

# Research on the Competitive Strategy of China's Smart Home from the Perspective of the Ecological Chain

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**Abstract:** In recent years, with the rapid development of Internet of Things (IoT) technology and the development of cloud computing, big data, artificial intelligence and other emerging IT technologies, China's smart home has undergone significant changes. Smart home has become a new market wind mouth, many companies want to seize the opportunity to seek development, Xiaomi is no exception. Since 2010, millet company was born on the wind mouth of the Internet, the face of increasingly competitive domestic smartphone market, millet company took a different approach, began to focus on mobile phone peripheral electronic products, and gradually develop the smart home and other hardware products, is committed to the research and development of smart home products, manufacturing, sales, to provide users with one-stop smart solutions. In just a few years, Xiaomi's smart Internet of Things business has developed rapidly, through the "investment + incubation" mode, to the ecological chain of enterprises to export its values and provide full support, to build a symbiotic, mutual, regenerative, feeding the business ecosystem. This business ecosystem not only provides Xiaomi with a large amount of sales water, but also makes an excellent contribution to maintaining Xiaomi's brand heat and increasing Xiaomi's imagination. Useful insights can be gained from the construction motives, construction process, and characteristics of Xiaomi's AIoT business ecosystem. It is expected that the study of Xiaomi can have a certain degree of positive impact on promoting the development of the smart home industry.

**Keywords:** Xiaomi Ecosystem; Smart Home; Differentiation; Competitive Strategy.

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## 1. Introduction

Against the backdrop of China's steady and positive economic development and steady improvement in science and technology, the 5G + AIoT concept continues to provide a driving force for the development of various industries, and the New Generation Artificial Intelligence Development Plan has issued a strategic call to build an AI industry to build core competitiveness in science and technology in a global context. The trend of home intelligence has been revealed in the market competition, and home intelligence has become a general trend. Intelligent home from the early 1990s began to popular in developed countries in Europe and the United States, and then since the beginning of the 21st century began to spread to a number of developing countries, the concept also appears frequently in the public's field of vision, mainly the use of various types of interconnection technology will be diversified smart home products linked, and through a variety of terminal equipment in the voice and the operation of the intelligent control [1]. The improvement of people's living standards has brought about a diversified demand for home products and high requirements for the quality of life, and the original demand for the development of science and technology is to meet the needs of production and life, the smart home will be born on the basis of this impetus, and continue to develop.

As an emerging Internet enterprise, Xiaomi has built the Xiaomi ecosystem model, reconfiguring the internal and external value chain with a unique value co-creation logic. Relying on Internet technology and big data, Xiaomi's ability to collect and mine user information is constantly improving, accurately capturing the consumer demand that has shifted from focusing only on functional indicators such as product

quality and performance to experiential value such as product experience and scene experience. Xiaomi builds an ecological chain model by investing in and incubating startups, and carries out business cooperation with ecological chain enterprises through specialised division of labour. At the same time, through the combination of diversified community interaction and flexible production capacity of the enterprise, users are involved in the product design and production process, and a loyal user base has been cultivated. Unlike traditional industrial societies, where a single enterprise was the sole creator of a product, Xiaomi does not rely solely on investing large amounts of production resources to produce the best products to win the competition. Xiaomi's ecosystem model not only focuses on the improvement of internal production efficiency, but also focuses on the acquisition of user resources, tapping into user demand, oriented to user demand, Xiaomi, ecosystem companies and users as the creators of product production, so as to achieve the value of co-creation and sharing. Xiaomi eco-chain model not only helps Xiaomi's own rapid growth, forming the competitive barriers of Xiaomi's business ecosystem, but also co-create value with co-operative enterprises, successfully incubating a number of listed science and technology-based enterprises. Therefore, this paper will explore how the Xiaomi ecological chain model builds a smart home empire, providing reference and inspiration for the enterprise platform transformation and business incubation industry to improve the success rate of incubation and so on.

### 1.1. The Smart Home Industry Market has a Huge Market Space

In recent years, with the gradual maturity and popularity of artificial intelligence, cloud computing, sensors and other

Internet of Things (IoT) technologies, as well as the strong support of national policies, the market of the smart home industry has entered a golden period of rapid development. According to the data of China Smart Home Industry Alliance CSHIA, the market size of China's smart home market increased from 260.85 billion yuan in 2016 to 580.05 billion yuan in 2021, with an average annual growth of 63.8 billion yuan in 2016-2021, and a compound annual growth rate of 18%. China's smart home market size is expected to reach 651.56 billion yuan in 2022 [2].

Moreover, the shipment of smart home devices in China has been increasing in recent years. According to data from the China Business Industry Research Institute, China's smart home device shipments increased from 110 million units to 230 million units between 2017 and 2022, more than doubling in four years. Even with the impact of the epidemic in recent years, China's smart home market shipment

Even with the impact of the epidemic in recent years, China's smart home market shipments can also exceed 200 million units mark, is expected to reach 240 million units in 2023, visible smart home development potential is broad, the market space is huge.

## **1.2. Smart Home Appliances Smart Home the Largest Proportion, Gradually Becoming the Industry Trend**

In recent years, the traditional home appliance market is gradually saturated, traditional home appliances have entered the stock market stage, while the epidemic has also led to a downturn in the traditional home appliance consumer market. In the role of consumption upgrading and the epidemic spawned a new "house economy" consumption mode, smart home appliances as an important segmentation of smart home products, through technological breakthroughs, to meet the diversified needs of home appliance consumers.

As an important sub-category of smart home products, smart home appliances have opened up a brand new space through technological breakthroughs to meet the diversified and personalised **needs** of home appliance consumers. Intelligent home appliances account for the largest proportion of smart home, and have gradually become an industry trend. According to IDC data from the Internet Data Centre, in 2020, smart home appliances in China's smart home equipment industry will account for 37% of shipments, and smart home appliances will account for 37% of shipments, making smart home appliances the largest segment of smart home market shipments [3].

## **1.3. The Digital Economy is Booming, and 5G + AIoT Technology Promotes the Leapfrog Development of Smart Home**

In 2021, the Ministry of Housing and Construction of the People's Republic of China, in conjunction with the Ministry of Industry and Information Technology and other sixteen departments, issued the "Guiding Opinions on Accelerating the Development of Digital Homes and Improving the Quality of Residence", which clarifies the requirements for the service functions of digital homes, the strengthening of the construction of digital home engineering facilities as well as the improvement of the digital home system, and puts forward the need to promote the synergistic application of information technology and the smart home, and the need to satisfy the residents' needs in the area of intelligent services for home

products and to perfect the standard system for smart products, digital home scenes and smart homes. At the same time, the technological integration of 5G + AIoT also promotes the leapfrog development of smart home. 5G + AIoT technology improves the computing power, intelligent level and energy-saving effect of smart home appliances, and effectively improves the quality of life of consumers. With the support of policy and technology, China's IoT market has achieved leapfrog development. from 2015 to 2020, China's IoT market scale grew from 750 billion yuan to 166,000 yuan in just five years, and the growth rate, although slowing down from 2017, reached an average annual growth rate of 15%, which is a rapid development. Smart home is an important application field of the Internet of Things, with huge development potential.

## **1.4. Smart Home Industry Competition is Fierce, Millet Ecological Chain Enterprises in the Embarrassment of Moving Forward**

From the market competition pattern of smart home, there are traditional leading enterprises of home appliances such as Midea, Haier and Gree, as well as Huawei, Xiaomi and other representatives of the Internet technology giant enterprises. Domestic in the whole-house intelligent programme to do more perfect millet and Huawei two enterprises. Among them, millet's ecosystem is more complete, millet ecosystem includes millet as the core of the millet brand and the brand of the Mi family joint. Join the millet ecosystem, become millet ecological chain enterprises can get millet investment empowerment, technology empowerment, and comprehensive incubation, to achieve resource integration, technology sharing, win-win cooperation. Xiaomi ecological chain enterprises with the help of millet to provide financial resources, customer resources, brand resources and sales channels on the road of high-speed development, to huami, cloud rice, stone technology, nine companies as the representative of the millet ecological chain enterprises and even achieved IPO listing. Although millet for millet ecological chain enterprises has brought a large part of the income growth, but as the leading ecological chain of millet requirements of the hardware business profit shall not exceed 5%, resulting in millet ecological chain enterprise profit space is extremely compressed, facing the situation of low profit. In order to break free from the bondage of cost-effective model, to get rid of the situation of low profits, more and more millet ecological chain enterprises choose to "go millet", the development of its own brand. However, the millet ecological chain enterprises are embarrassed, due to their own early over-reliance on millet, in brand and channel foundation is not stable, to millet to the development of the road of self-sustaining faces great difficulties and risks, millet ecological chain enterprises need to formulate a suitable corporate strategy to deal with the difficulties. 2. Significance of the Study

## **2. Theoretical Significance**

Based on the theory of enterprise core competitive strategy, this study selects Xiaomi enterprise and deeply analyses the path of enterprise ecological chain mode realization as well as the realization effect. Core competence is a kind of competence that can enable enterprises to exert competitive advantages in competition, so as to outperform competitors.

Creating core competence requires technological innovation and coordination between organisations, which can help the enterprise to have a lasting competitive advantage, broaden profit margins and obtain excessive profits [4].

### 2.1. Practical Significance

Through the "investment + incubation" model, Xiaomi has constructed a symbiotic and co-evolutionary AIoT business ecosystem in just a few years, in which both eco-chain enterprises and Xiaomi can benefit from the business ecosystem [5]. For eco-chain enterprises, Xiaomi empowers eco-chain enterprises to help them overcome deficiencies and grow smoothly; for Xiaomi, the business ecosystem helps it to rapidly expand its smart IoT product line and rapidly capture the market with less investment in capital and manpower. Xiaomi chose the mode of investment without holding to cooperate with specific external business entities, using its own experience and resource endowment, exporting high-quality talents and advanced management concepts for the ecological chain enterprises, jointly constructing the business ecosystem, and maintaining the independence of the ecological chain enterprises, transforming the product range from horizontal expansion to vertical development, and gradually forming core competitiveness by continuously improving core technology and perfecting the construction of the platform [6].

### 2.2. The Current Situation of Ecological Chain Research

At the end of the twentieth century, Moore (1993) found that the operation of business organisations was similar to the operation of ecological chains in biological research when he studied the operation process of business organisations, so he introduced the concept of ecological chain into the study of economic management, and the concept of business ecological chain was formally put forward [7].

At present, domestic and foreign scholars on the ecological chain model focus on the characteristics and nature of the ecological chain model, but few scholars are involved in the study of the ecological chain model and strategy theory. The ecological chain model originates from the systematic viewpoint of business model research. In order to cope with the survival, competition and future development, enterprises need to consider a series of issues such as the operation mode, profit model, strategic positioning and business development of the enterprise as a whole. On the surface, the ecological chain model is an organisational structure composed of multiple stakeholders, and studies have shown that this organisational structure will evolve from a chain structure to a network structure and a business ecosystem. At the same time, despite the different strategic positioning, the ecological chain model has established a complex transaction mechanism and business process between the various subjects through the conduct of business. It has been shown that the essence of business model is symbiosis, coexistence and value creation, taking interaction and resource integration approach as the core of the construction of value co-creation process of ecological chain model, and emphasising the formation of unique enterprise capabilities in the process of value co-creation of ecological chain model, which in turn creates competitive advantages and ultimately achieves value co-creation. Therefore, the thesis will analyse the path and mechanism of ecological chain development strategy theory in depth from based on the above theory.

## 3. Internal and External Environment Analysis of Smart Home Company

### 3.1. Political Environment Analysis

Political, economic, social and technological factors are the most important reasons restricting the development of China's smart home, while politics and economy are also important macro conditions for the development of China's smart home, while technology, social and cultural are also important factors in the development process. As an emerging industry, smart home is regulated and developed under the support of relevant national policies, laws and regulations. National policy support provides a good foundation for the development of the smart home industry, especially the promulgation of the document "Made in China 2025", which puts forward a clear goal and implementation path for China's manufacturing industry, and also promotes the development of the smart home industry.

### 3.2. Social Environment Analysis

As China's current network penetration rate and the number of Internet users has been increasing, coupled with the government's "broadband country" development strategy plan, coupled with China's booming network, the wireless network coverage area is getting wider and wider, and the speed of the Internet is also getting faster and faster. China's popularity of the Internet, greatly expanding China's information consumption market, but also a new generation of smart home industry in the development of social waves to stand firm.

The popularity of smart home is still facing a lot of problems, such as consumers, despite the demand and spending power, but consumers are still relatively insufficient knowledge of the smart home, the acceptance of the concept of smart home is still not high. Good development of the smart home industry, in addition to smart home enterprises to provide good products and services, the education of consumers is also an essential part. Xiaomi smart home to pre-empt the layout of the Internet of Things, smart home field, in today's consumers gradually improve the quality of life today, can be said to have seized the opportunity, consumer demand for smart home gradually increased. At the same time the popularity of the Internet, but also for the smart home field to lay a good foundation. So, the current social environment factors, the development of smart home has a positive impact.

### 3.3. Analysis of Technical Environment

As a technology-driven smart home industry, its development cannot be separated from advanced technology as support. With the wide application of artificial intelligence, cloud computing, sensors and other Internet of Things (IoT) technologies and 5G technologies in the field of smart home, the smart home industry has made great technological breakthroughs and become a sunrise industry in the field of Internet of Things. Driven by IoT technology, the IoT industry has entered a period of rapid development. In recent years, the number of IoT terminal connections around the world has shown unprecedented high-speed growth, with the number of global IoT connections growing from 9 billion to 15 billion in 2018-2021, with an average annual growth rate of more than 18%, and it is expected that the number of global IoT connections will reach 25 billion in 2025.

### 3.4. Analysis of Industry Competitiveness

Currently, there are a large number of competitors in the smart home industry in China, the industry is growing at a fast rate, and the degree of competition among existing competitors is relatively intense. The current competitors are mainly of the following types: (1) Traditional home appliance enterprises. Represented by Haier Smart Home, Midea Group, Gree Electric Appliances and other enterprises, which have outstanding manufacturing capabilities and advantages in supply chain, sales channels and brands; (2) Internet enterprises. The main representatives are Xiaomi Group, Baidu Group, Alibaba, Huawei, etc. They favour the design and development of smart home systems, have a user traffic base, strong technical support and strong financial strength; (3) other enterprises. Such as fluorite network, Orbe and other smart home specialised enterprises, as well as some of the home enterprises that are actively developing smart home. These enterprises are mostly small and medium-sized enterprises, focusing on smart home scenarios, with greater capital needs and higher growth [8].

## 4. Implementation of Xiaomi's Competitive Strategy

Xiaomi is a platform company with three business segments, namely mobile phone business, intelligent hardware business and IoT platform. Xiaomi was officially founded in April 2010, and its company executives come from excellent companies such as Kingsoft, Microsoft and Google, etc. Xiaomi is committed to the use of information technology in the research and development and production of related hardware, and pioneered the mobile phone enthusiast and other research and development modes. With the continuous development of Xiaomi, gradually formed its unique "triathlon" business model, Xiaomi's business model consists of hardware, e-commerce and new retail, Internet services, is committed to the continuous improvement of efficiency and reduction of operating costs, at the same time to bring the value generated by the improvement of efficiency to the user. Compared with its peers Samsung, Huawei and Apple, Xiaomi's products are known for their high "price-performance ratio", and it uses online marketing as its main marketing tool, reducing its investment in offline experience shops. Xiaomi was officially listed on the main board of the Hong Kong Stock Exchange on 9 July 2018, and after 10 years of development, Xiaomi has become a leading company with annual revenue exceeding RMB 200 billion, and a business that has grown over the past decade. exceeding 200 billion yuan, with operations in more than 80 countries and regions around the world, a comprehensive Internet + intelligent consumer electronics brand company. Currently, Xiaomi is the world's fourth largest smartphone manufacturer, through the unique "ecological chain model", Xiaomi has invested in, incubated and driven a number of electronic products ecological chain start-ups, as of 30 June 2023, the company has been connected to a total of 471 million IOT devices. Xiaomi has successfully incubated and listed many eco-chain enterprises.

### 4.1. Ecological Chain Stage

Xiaomi Group was founded in 2010, adopting a cost-leading strategy to emerge in the domestic smartphone market. In 2012, several million smartphones had been sold, with sales of tens of billions of yuan, and Xiaomi's market value

had reached more than \$10 billion, while successfully launching two rapidly developing start-ups, ZiMi Technology and WanMo Acoustics, with which Xiaomi Group jumped to the first team of domestically produced smartphones.

As the idle resources in terms of user base, marketing experience, product definition capability and supply chain relationship were not fully realised in the smartphone production process, Lei Jun formulated a set of eco-chain in November 2012 with mobile phone as the core, covering hardware products such as TVs, readers, set-top boxes, displays, etc., and attracted customers into the Xiaomi Mall and the high-margin zone with high-quality and cheap hardware of Internet services. However, this ecology is not really implemented, millet box in the release of ten days, suffered a series of infringement lawsuits; internal R & D staff developed millet mobile power sales dismal; NFC payment module in the market is also difficult to compete with Alipay.

### 4.2. Ecosystem Stage

Xiaomi's smartphone market has faced fierce competition since 2013. As a startup, Xiaomi Group's manpower, energy and financial resources have not yet formed a scale, assuming that according to the traditional business model of Lenovo and LeEco, etc., it is difficult for the smart hardware ecosystem to grow in a short period of time. So, Xiaomi Group took another approach and invested its capital in existing enterprises. This also protects the cash flow of the enterprise in the case of investment and expansion needs have been implemented.

In the second half of 2013, it began to build a business ecosystem based on IoT home smart hardware, and Xiaomi's ecological chain products quickly entered the market. In late 2013, Lei Jun predicted the future development trend of combining hardware and IoT with extreme foresight and set up a smart hardware ecosystem department. With the help of Shunwei Capital, the with the help of Shunwei Capital, he made strategic investments in startups that met Xiaomi's expectations, thus establishing the Xiaomi ecosystem. At the critical time period of 2013, Xiaomi Group had certain limitations in terms of capital, market timing, and idle resources, and it was not a bad decision to establish an intelligent hardware ecosystem to expand its business territory.

Xiaomi Group's annual revenue of the intelligent hardware ecosystem as of 2017 reached 20 billion yuan, and the ecological chain companies invested or cooperated with reached 77 companies, 16 of which had revenues of more than 100 million yuan.

### 4.3. Ecosystem Stage

Xiaomi successfully went public in 2018, a year in which Lei Jun promised Xiaomi's users that the comprehensive after-tax net interest rate of all hardware businesses (including mobile phones, IOT, and consumer goods for life) for the whole year should not be higher than 5%. If it exceeds, it will be refunded to Xiaomi's users in a reasonable way. While continuing to promote the cost leadership strategy, further layout of the "mobile phone × AIOT" strategy, in the continuous development of mobile phone business at the same time ploughing the IOT intelligent platform products, in February 2018, Xiaomi intelligent ecological chain in the Huami technology company listed in the United States on the New York Stock Exchange, and in September, focusing on intelligent white home appliances Yunmi technology in the

United States on the NASDAQ, and in the United States on the NASDAQ, the company focused on intelligent white home appliances. Yunmi Technology was listed on the NASDAQ in the U.S. In 2019, Xiaomi Group launched the Redmi automatic wave washing machine, and in 2020, it released a large-screen intelligent Xiaomi TV product, and in February 2020, Stone Network Technology JSC, the producer of one of the Xiaomi sweeping robots, one of the Xiaomi Group's products that has reaped good feedback from the market, has completed its listing on the Kechuan Board. The successful listing of enterprises within the Xiaomi ecosystem is an example that fully confirms the feasibility and superiority of the Xiaomi Group's business ecosystem.

## 5. Discussion and Conclusion

Xiaomi Mijia, as a pioneer in China's smart home market, has achieved success through its competitive strategy carried out through the lens of the Internet. By building an open and interconnected smart home ecosystem, Mijia integrates a wide range of smart products and services to provide consumers with a comprehensive smart life solution. The Mijia App serves as the core platform, enabling interconnectivity between devices, while enhancing user experience and brand loyalty through data-driven smart scene optimisation. This model not only expands the product line, but also promotes customer demand and the start of cooperation in the field of smart home at Mijia. However, with the continuous advancement of smart technology and deepening market competition, Mijia needs to continue to strengthen its innovation capabilities and launch competitive new products and services to meet the growing needs of consumers. In addition, deepening cooperation with chain partners and committing to further expanding market influence and sustainability will provide useful reference for

future smart home enterprises. With the development of technology and market, Mijia's potential will continue to drive the industry and create more smart home products and convenient living experiences for consumers, while continuing to expand the global smart home market.

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