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Analysis of Huawei's Business Model

Xiaoying Chen

School of Management, South-Central Minzu University, Wuhan, China
sxyying1225@outlook.com

Abstract: This article focuses on Huawei's business model, aiming to analyse its core competitiveness in the global communications and equipment market, as well as analyse the challenges and risks it faces in the future and suggestions for innovation. The background of the study is that Huawei, as a leader in the global communications industry, has excelled in the ICT industry, and has grown steadily in the face of sanctioning pressures, making the business model analysis a valuable reference for the industry. The research data in this article comes from Huawei's annual report and public data. While using the business canvas analysis method, Porter's Five Forces model and literature references, the research found that Huawei strengthens its competitiveness through technological integration and ecological construction, but faces problems such as balancing technological development and energy consumption. It concludes that Huawei needs to continuously improve and innovate its business model, retain its advantages and increase its research investment to meet industry challenges.

Keywords: Huawei (Company), Business Model, Business Model Canvas, Porter's Five Forces model

1. Introduction

Information and communication technology (ICT), as one of the most central economic drivers, will have an increasingly broad reach in the future. At the same time, under the double impact of rapid technology iteration and geopolitical complexity, the competition within the industry has become increasingly fierce. Existing research is more focused on the competitive comparisons between industries, and development trends, as well as the core advantages of the “end-to-end” synergistic ecosystem and high R&D investment. However, there is a lack of specific analyses of Huawei's business model for adapting to the controversial market environment, as well as a gap in the challenges and risks.

This paper focuses on Huawei's business model. It aims to answer the following questions: (1) How does Huawei's business model enhance its competitiveness? (2) How does Huawei maintain its business competitiveness under industry pressure? (3) What are the challenges and possible improvements in the context of globalization and market competition?

This paper focuses on combining business model canvas analysis and the BF5 model to analyze the strengths and effectiveness of specific parts of Huawei's business model, based on Huawei's annual report data, ICT public data, and other support. The significance of the study is to provide ICT companies with forward-looking strategies and a reference for coping with external uncertainties.

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2. Overview of industry and company background

2.1. Industry background

As technology continues to evolve, the information and communications technology (ICT) industry occupies an increasingly important position with expanding application areas. According to Statista data, the global ICT market size is almost $6 trillion in 2023. But at the same time, it is also facing a technological revolution led by 5G, the popularity of artificial intelligence (AI) and cloud computing. The competition in the ICT industry is fierce. In this context, European and American companies focus on high-end technologies such as chip design as their core competitiveness, while Asian companies concentrate on equipment manufacturing.

2.2. Huawei company profile

Founded in 1987 by Ren Zhengfei, Huawei Technologies Co., Ltd. has three core business modules: communications technology (development of 5G), smartphone design and sales, and chip design (development of its own chips). According to Huawei's annual report, Huawei generated about $862 billion in revenue in 2024, which is a 22.4% year-on-year increase. Meanwhile, Huawei continues to increase its R&D investment and enhance its innovation capability. According to the IPlytics 2023 report, Huawei holds about 14% of the world's 5G SEPs. It adheres to the ‘end-to-end management-to-cloud’ synergistic strategy, with rapid development in the fields of 5G communication technology, cloud computing services and independent semiconductor innovation. With its advantageous business model, Huawei has become a benchmark enterprise in the global ICT market.

3. Huawei's business model canvas analysis

3.1. Customer-related modules (customer segmentation, channel access, customer relationship)

Huawei's customers fall into three main categories: (1) individual consumer customers of mobile phones, computers, and other electronic devices; (2) enterprise customers adopting cloud services for digital transformation; and (3) operator customers deploying 5G solutions. This segmentation rule divides customer groups by finding commonalities of needs among them, enabling the provision of more accurate products and services [1].

Huawei serves enterprise/operator customers through direct sales, providing customized 5G private network and private cloud service solutions. It also relies on retail cooperation and e-commerce-covered distribution to sink into the market, with online channels integrating domestic Huawei Mall and overseas cross-border platforms such as Amazon and Sizzler.

Customer relationships are mainly bound through technology-driven means; Hongmeng system ecological integration requires long-term compatibility adaptation. Set up a tiered service system based on different customer types, such as a self-service platform and exclusive team customization. At the same time, through the empowerment of digital technology, in-depth exploration and analysis of customer relationships can be conducted [2].

3.2. Value creation module (value proposition, core resources, key businesses)

Huawei focuses on the innovation and improvement of technological capabilities, and through technological autonomy breaks through the global semiconductor industry to encounter the dual challenges of technological blockade and geopolitical games. And customer-centric to provide cost-effective communications equipment [3], while the Hongmeng system to break the terminal

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barriers has been connected to 300 million + devices to form a super terminal experience, ecological integration capabilities become a unique value anchor point.

Huawei's core competitiveness stems from continuous high-intensity investment in R&D, with more than 10% of its annual revenue going to innovation. Its 100,000-strong global R&D team promotes technological breakthroughs through independent research and collaborative innovation [4]. Moreover, Huawei has broken through the patent barrier by virtue of its continuous innovation ability, and has ranked first in the international patent list for many consecutive years.

Huawei's key businesses are 5G infrastructure, smart devices, and enterprise services. According to the annual report released on Huawei's official website, the ICT infrastructure business as well as the terminal business are back on the fast track of growth, while the digital energy and cloud computing businesses are also growing.

3.3. Profit and cost module (revenue sources, cost structure, key collaborations)

Huawei's core profit source is the carrier business, but since 2018 the consumer business has become the largest source of revenue [5], with a volume of more than 320 million Hongmeng devices. Patent licensing is likewise a source of revenue, together forming a unique and diversified revenue structure.

Huawei's cost structure is centered on a high proportion of cost of goods sold (COGS), which is mainly derived from the raw materials and production costs of smart devices, and selling and administrative expenses (SG&A), which cover R&D, brand promotion, and distribution and administrative expenses, and which together comprise its main cost structure [6].

Depending on service needs, Huawei has entered into important collaborations with communications operators (e.g., Deutsche Telekom, Vodafone) and supply chain partners [7]. Huawei continues to focus on cross-regional cooperation, working with BYD to achieve a revenue of $26,353 million by 2024, a 474.4% year-on-year increase, in its smart car solutions business.

4. Competitive analysis of the industry based on the porter's five forces model

4.1. Bargaining power of suppliers

Under external pressure, suppliers of semiconductors are restricted, and Huawei's relationship with its suppliers is forced to shift from a synergistic to an antagonistic strategy [8], accelerating domestic substitution, such as SMIC. At the same time, with high R&D investment, Huawei independently developed the Kirin series of chips. By enhancing its core technology, Huawei has reduced its dependence on suppliers, which is also an effective way to weaken the bargaining power of suppliers.

4.2. Bargaining power of buyers

In terms of 5G base stations and cloud computing services, the large scale of enterprise acquisition leads to strong bargaining power for such buyers. According to Dell'Oro Group's analysis, Huawei leads the global 5G base station market share in the mid-first quarter of 2023 (approximately 30%), but the European market share declined due to political factors. The market for smart devices is highly competitive due to high consumer choice and price sensitivity.

4.3. Threat of potential entrants

The communications equipment market has high technical requirements and high barriers to entry, while a large number of patents make leading the vast majority of new and old brands. In smartphones and cloud computing, while there is a constant influx of new brands, the barriers to entry for high-end brands are high, and the top 5 RAN providers in 2023 are Huawei, Ericsson, Nokia, ZTE and Samsung [9].

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4.4. Threat of substitutes

There is no replacement for 5G technology for the time being, but the Open RAN architecture continues to evolve by allowing more vendors to sell products to carriers, potentially threatening the traditional equipment vendors already in place. However, the threat posed in the short term is not significant.

In terms of smart devices, there are smart watches, but their functionality is limited, and existing smart devices will remain dominant for a long time.

4.5. Threats from competitors

In terms of 5G infrastructure, there are commercial competitors, such as Ericsson and Nokia. In terms of smart devices, in a survey of 1,377 Chinese smartphone users, 34.35% of respondents chose Huawei, higher than Apple, suggesting that Huawei dominates in the domestic market [10]. But in the global market, Apple still maintains the advantage, in addition to Xiaomi, Vivo and other competitors.

5. Analysis of the interaction between business models and industry competitiveness

5.1. Business model to strengthen competitiveness

The business model is strengthened from multiple dimensions. At the organizational level, Huawei integrates multiple segments of the R&D team, suppliers, and carriers to strengthen connections, build strategic alliances, and improve response resilience [11]. At the technical level, it relies on the Hongmeng system to achieve vertical integration of hardware and software and build an autonomous and controllable ecosystem. Meanwhile, expand integrated digital solutions and develop new areas of business. On the service level, deepen digital transformation and focus on the customer.

This business model, which guarantees continued breakthroughs in core technologies and multiplies business value through ecological partner synergy, enables Huawei to consistently take strategic initiative in ICT industry changes and build systemic advantages that are difficult for competitors to replicate.

5.2. Industry pressure forces model adjustment

As a domestic enterprise, external sanctions and industrial chain pressure have forced Huawei to accelerate the reorganization of its supply chain and shift to the enterprise market. Through independent research and development of Kirin chips and Euler OS, it has broken through the supply limitations. Huawei's cloud growth rate Huawei's cloud growth rate is significant: its market share in this sector will reach 31.5% in 2023, continuing to rank first.

A typical example is Huawei's “Nanniwan Plan” in response to US sanctions. Against the backdrop of restrictions on the use of U.S. technology, Huawei was forced to “de-glamorize” its supply chain, for example, by adopting the self-developed Hongmeng operating system and self-developed chips in the field of smart screens. Under the pressure of the industry, Huawei has demonstrated the strength of technological breakthroughs.

6. Challenges and recommendations

6.1. Challenges and risks for Huawei

Huawei currently faces challenges and risks from two sources. The most obvious of these is from competitors, where the industry's technology has been upgraded in line with Moore's Law, but market

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demand has led to a surge in energy consumption [12]. Huawei therefore needs to balance the relationship between technology development and energy efficiency, or face the challenge of mismatches between technology and demand capacity.

Infrastructure equipment in the ICT industry often has high energy consumption and carbon emissions [13]. Huawei should focus on emissions while ensuring product quality. Otherwise, it may face the challenges of environmental regulatory restrictions, rising operating costs, and damage to its brand reputation.

Meanwhile, there are many players in the industry chain, so it is necessary to coordinate the cooperation between all parties and the allocation of resources; otherwise, there is a risk of uneven resource allocation and waste.

6.2. Recommendations and innovations

In the future, Huawei should continue to adhere to customer-oriented, data-driven product optimization, and multi-platform data integration to obtain a more comprehensive user portrait [14]. Innovative use of NLP models to improve the accuracy of emotional polarity judgement, identify the user's invisible needs, and conduct deep learning emotional analysis.

Combined with the development of technology, Huawei can introduce intelligent after-sales service, such as remote diagnosis, to improve after-sales response speed and customer satisfaction. Sustainable innovation based on energy and carbon emission issues, focusing on the substitution of environmentally friendly materials and the mining of energy-saving technologies, while achieving high-efficiency and low-carbon emission goals.

7. Conclusion

This study analyses Huawei's business model from multiple perspectives, and systematically analyses Huawei's core competitiveness and adaptive strategies. It is argued that Huawei's competitiveness mainly stems from the construction of an ‘end-to-end management-to-cloud’ collaborative ecosystem, high investment in R&D to enhance its core technological capabilities, a customer-centered value system, and a strategy of high-quality development to win by quality. Its specific customer segments are individual consumer customers, enterprise customers and carrier customers. It deepens customer relationships through technology-driven binding, tiered service systems, and digital technology empowerment. The Porter's Five Forces model analyses Huawei's suppliers with medium bargaining power, buyers with medium to strong bargaining power, potential entrants with weak threats, substitutes with weak threats, and existing competitors with strong threats. It further reveals that Huawei's independent R&D capability required for sanctions has to be continuously strengthened, and that it still needs to continuously improve and innovate in order to create more economic benefits in the international market facing the double squeeze from geopolitics and competitors. Huawei's business model also interacts with competition in the industry.

In the future, Huawei is still facing problems of technology breakthrough, technology upgrading, energy consumption contradictions, etc. It is recommended that Huawei should develop and deepen the research and development of green technology; expand the cooperation in the fields of cloud computing business and smart car solution business; and find more means to meet the personalized services of customers. In an increasingly competitive market, Huawei should continue to uphold its customer-focused original intent, and continue to retain its advantageous innovative technologies and seek a more comprehensive business model.

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