

Research on Business Model Innovation of Electric Vehicle Industry

—Taking Tesla as an Example

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ABSTRACT

With the increasing challenges of global energy shortage, environmental pollution and driving safety, the global automobile industry is developing in the direction of new energy, intelligence, networking and sharing. Based on both energy security and ecological environment, China has taken the new energy vehicle industry as an important new industry to develop.

As one of the key industries to be promoted internationally, the new energy vehicle industry can both alleviate the problem of environmental energy depletion and promote structural changes and transformation of the country's production industry. Finding a new economic pillar from it is of great value and significance in both the short and long term.

As a leading brand in the new energy vehicle industry, Tesla's successful strategy of marketing their products have led them to their current successful position. Tesla's business model has attracted global attention and attention. In this paper, Tesla will be used as a case study to analyze their business model and business strategy. This paper will use cases and literature to analyze Tesla's business model and how they were able to reach the heights they are now in the new energy vehicle industry.

The results of the study show that the business model of the new energy vehicle industry is a set of structures that can meet the travel needs of consumers and the needs of the environment, and can continue to operate to create business value. This open business model is not the same as that of traditional cars. Compared with the traditional way, the new energy vehicle industry focuses more on service, and it is equivalent to sales in their eyes. In this article, will be discussing the different sales strategies and business models in China and abroad.

Keywords: *Business Model, New Energy Vehicle Industry, Tesla*

1. INTRODUCTION

With the development of the times and the improvement of living standards, we are increasingly aware that maintaining ecological balance and protecting the environment are fundamental issues related to human survival and social development. And the air and people are inseparable. The emission of automobile exhaust is the most serious pollution to the air. Therefore, the environmental benefits brought by the introduction of new energy vehicles have been well received by the public and the government. However, due to the problems of imperfect technology and slightly higher prices than traditional cars, finding a suitable business model for new energy vehicles has become the primary

issue in the industry and this topic also has received attention from various parties.

Thus, in this case, we decided to conduct business analysis for new energy vehicles. This study will first study the business model of new energy vehicles. As the new energy vehicle industry is still in the early stage of industrialization and commercialization, it faces a series of early dilemmas such as imperfect supporting facilities that bring many inconveniences to the use of new energy vehicles, resulting in a vicious circle of early market dilemmas due to the lack of motivation for enterprise promotion and supporting facilities construction. Therefore, to break through this dilemma, business model innovation is a very effective way. By studying the

business model of the new energy vehicle industry in this paper, investors and industry participants will have a better understanding of how business model innovation can address barriers to consumer use, which can lead to broader expansion and deeper exploration of the industry, while creating business value. In this process to make their own access to viability and growth space to have a clear understanding and certain inspiration, so as to develop new strategies and investors' investment decisions countermeasures suggested ideas that can effectively help the new energy vehicle industry to flourish.

2. BUSINESS MODEL RESEARCH OVERVIEW

2.1. Domestic Business Model Research

In recent years, domestic academic research on business models has become richer and richer, and the scope has begun to gradually extend to the connotation, elements and evaluation system of business models. In terms of the definition and components of business models, domestic scholars have conducted a lot of systematic research. In their book "Discovering Business Models", Zhu Wuxiang and Wei Wei define a business model as a transaction structure based on interests wanting to do this. And systematically put forward the six elements model of business model. In his book "Business Model Innovation", Junyi Weng summarizes business model as a three-dimensional spatial value analysis system consisting of value support, value proposition and value maintenance, which provides a way of thinking about a business model from different perspectives. [1] On the other hand, Yuan Xinlong and Wu Qinglie believe that the business model is an organic system with different components and interaction mechanisms during the period. Through this system, a company can provide value to its customers and share the benefits with other related parties. They also point out that the structure of the system consists of product and capital flows, service flows and information flows, and the roles of the participants and their connections, as well as the forms of benefit distribution among them.

On this basis, domestic scholars have also studied the business model as a whole, its overall brother constituent elements and the role of the relationship between the elements. In "Organizational Management", Romin mentions that business model is the prerequisite for the establishment and operation of an enterprise as well as the means of operation. Although a business model is composed of many elements, its wholeness cannot be ignored, but the essence of the business model is the connection between its elements and their wholeness. By studying the structure of business model elements, Wang Weiyi and Li Qianwen have divided the elements of business model into two structures: reticulation and

horizontal enumeration, and strong logical connection exists between each element, which well reflects the connection between the elements of business model and its wholeness. [1] Most domestic scholars have conducted research in the area of research methods for business model innovation. Wang Weiyi believes that the optimal selection of all value activities, the innovation of the core elements, and the integration and optimization of the relevant resources are the core of business model innovation.

Foreign Business Model Research:

The study of the definition of business models. 2018 Timmers is one of the early foreign scholars to dabble in the field of business model research. He believes that business model is an organic system, which contains three main characteristics, namely the description of the source of benefits, a system framework containing three streams of information, products, and services, and the description of the market participants and their roles. Rappa, on the other hand, believes that the core content of the business model is the way of business operation in order to achieve its own development and breakthrough, which means that it is the way of business operation in order to gain profit, and how to find its own position in the value chain and gain profitability. Teece's business model clearly articulates the business logic and provides data and other evidence to demonstrate how a company creates and delivers value to its customers, and lists the revenue, cost and profit structure associated with delivering that value. [2]

Study of the components of the business model. Although there is still considerable disagreement across the academic community on how to define a business model, there is relative agreement on what constitutes a business model: value proposition, customer base, cost and revenue flows, and value network of company partners. Then later they divided the business model into nine elements, most of which have been mentioned in other influential theories. Together, these theories consider the components of a business model to be value proposition, customer and market segmentation, value chain, cost and profit structure, strategic position of the firm in the value network and competitive strategy.

Business model innovation research. Morris argues that business model innovation is the process by which a company evolves its current business model from the basic level of value creation to the proprietary level that dominates the implementation of the company's strategy, and finally to the rule level that governs a set of operational norms. Linder and Cantrell argue that different companies need different levels of business model innovation at different times. [2] When an enterprise innovates its business model, it should identify the aspects of the business model that need to be transformed, and then choose the transformation from its own reality, to coordinate and guide the change of the

business model. Depending on the degree of change in the company's original operation, four types of transformation models can be classified: realization, renewal, expansion, and so on.

2.2. Domestic New Energy Vehicle Industry Research

2.2.1. Policy

Domestic research on the new energy vehicle industry includes industrial development strategies, technology routes, enterprise business models, and other aspects. In 2012, Qiang Ye and He Wu Wang considered that the new energy vehicle system is a huge system containing logistics, products, capital and information flow, and the business model used needs to build a good institutional environment to make all the system parties work together and the whole system reaches the optimal state. [3] In the same year, Zhang Leping summarized the policies of developed countries in Europe and the United States to promote the development of the electric vehicle industry into three forms: decrees, tax incentives and price subsidies. The three charging modes and the four operation modes of different dominant parties are analyzed and compared in detail, which is a reference value for the formulation of domestic policies.

2.2.2. Technology

In 2014, Sun Buxiang believed that adopting the business model of battery lease loan combined with bare car sales could greatly increase the market acceptance of electric vehicles in the market environment of that year, but due to the influence of factors such as the higher unit price of battery systems with lower overall charging capacity, battery lease loan operators needed to further improve the utilization rate and operational efficiency of charging facilities while reducing battery procurement costs in order to expand the scale of profitability. [4]

2.2.3. Enterprise Business Model

At the enterprise level, domestic research has focused on two new energy vehicle companies, BYD and Tesla. In general, domestic scholars have abundant research results in the new energy vehicle industry. On the other hand, most of scholars focus on a certain element of industrial development strategy or business model, and there is a lack of research on the business model penetration evaluation system at the enterprise level, and the empirical research mainly focuses on two leading enterprises. For example, BYD and Tesla, and the richness of cases needs to be strengthened, which provides more room for expansion for subsequent research. [4]

3. TESLA'S BUSINESS MODEL INNOVATION

At the beginning of 2020, the share price of the U.S. electric car company Tesla skyrocketed, even surpassing the combined market capitalization of the three largest U.S. car companies, and even surpassing Toyota to become the world's largest automaker by market capitalization in early July 2020. [5] Tesla has grown by leaps and bounds, both in terms of reported data and financial market data. From the beginning, Tesla has defined its own positioning to meet the needs of consumers, change the sales channel from product to consumer, and improve after-sales service. The following is an analysis of Tesla's product positioning, marketing model, and after-sales service to discuss Tesla's new business model. Because from these aspects, Tesla is the leader in all new energy vehicle industry and the aspect that interests every company.

3.1. Product Positioning

Product positioning is essentially the process of finding the target consumers. Manufacturers need to compare their products with similar products in the market, find selling points, and stimulate consumers' desire to buy; only by satisfying consumers' needs can they successfully sell their products to target customers and realize the conversion of goods to monetary resources. The founders of Tesla's electric cars targeted high-income customers who enjoyed the thrill of a high-performance sports car but wanted to reduce environmental pollution. Therefore, Tesla's positioning is different from other companies, in that the product strategy is to first sell high-end brands to meet the needs of this target group and open the market; in order to expand the target group, gradually launch products that can be consumed by the general public. Tesla has followed a high-end to mass product launch approach from its inception to its current model launch, from the initial million-dollar Roadster to the current Model 3, which costs around 300,000 to 400,000 yuan. [6] In short, Tesla's product launches have been consistent with its revenue growth trend, which explains the continued increase in revenue.

3.2. The marketing models

Tesla's marketing model is innovative in that it starts where consumers buy their cars, bypasses dealers' barriers to major product launches or rapid changes in corporate culture and adapts its strategy to market demand at any time. Tesla has adopted Apple's sales strategy of selling its own products and providing after-sales service, bypassing dealers and going directly to customers. [7] By opening offline stores, Tesla is able to connect directly with consumers and understand their needs more clearly. Tesla's offline stores are also located

differently from traditional dealers, usually in busy downtown malls, which are more attractive to consumers. Consumers can visit the stores to experience Tesla's products, make test drive appointments and place online orders. Tesla has zero cars in stock and requires a deposit before production can be scheduled and delivered to the customer's door. The Tesla Model Y, which will be available for pre-order in January 2020, will not begin production until 2021, according to its Chinese website.

Tesla's unique marketing model is well reflected in its financial data, with accounts receivable, inventory, and other accounting data validating the "zero cost - zero inventory" model. The traditional dealership model is somewhat outdated in the information age, but Tesla's self-operated sales model is free from this constraint and has developed a unique e-commerce platform and information system that provides consumers with a better shopping experience and timelier consumer feedback through self-operated sales channels, while improving operational efficiency and profitability, controlling product inventory, and maintaining and enhancing brand awareness. The company's brand awareness is maintained and enhanced. [7]

3.3. After-sales service

Tesla's after-sales service is reflected in several aspects.

First, the after-sales service center. Before setting up a direct store in a new city, Tesla will first establish a complete after-sales service network system, including the construction of a charging network, service centers, etc. In recent years, the sales range and the number of Tesla vehicles. At the same time, Tesla has been increasing the number of after-sales service outlets, which to a certain extent eliminates customers' worries.

Second, after-sales commitment. Due to the drawbacks of the traditional dealership sales model, the profit from the manufacturer through the dealership to the consumer is divided up into layers, and the 4S store can earn relatively limited profits. Therefore, how do dealers maintain their operations? In essence, dealers earn most of their profits from after-sales repair and maintenance services. Tesla has overturned the design structure of the car, using the current of the battery pack to directly drive the car forward, making the failure rate of the vehicle significantly reduced; and its quality assurance service for consumers includes a guaranteed commitment to the car product and high-voltage battery, for example, Tesla's Model S and Model X high-voltage battery and drive total warranty period is 8 years unlimited kilometers, which is a fairly long period of commitment. [8]

The third is the repair service. Tesla's repair is mainly conducted in two ways: one is self-diagnosis and troubleshooting. Consumers can solve smaller faults on their own through the cloud services provided by the

manufacturer. The second is service center repair. When the cloud service cannot troubleshoot and fix the problem by itself, consumers can make an appointment to repair the vehicle at the service center by themselves or make an appointment for on-site repair. Tesla will provide customers with a new car free of charge to help them get around when their vehicle breaks down or during the warranty period. This kind of considerate service greatly enhances customer satisfaction. [9]

Fourth is the used car warranty service. In the current auto market, the depreciation rate of electric cars is significantly higher than that of fuel cars. Tesla's selling price is significantly higher than other brands, and in order to improve its competitive advantage, it has to make concessions for the value of its products. Tesla's first three-year warranty buyback concept in China, which guarantees no less than 50% of the car's price, is also a marketing strategy that has won consumers' favor. [10]

Overall, the business model Tesla has created is a success. Tesla is constantly working to retain and grow its customers, and it has achieved breakthrough after breakthrough without the need for expensive advertising and through word-of-mouth. Tesla has created a business model that is different from most electric car manufacturers by positioning its products after a thorough analysis of the automotive industry's business models. [11] Tesla's business model has distinctive features that are difficult to replicate, both in terms of marketing and after-sales services, which is an important reason for its success.

3.4. Improvement

Based on my research and the analysis of Tesla's business model, I propose countermeasures for the event of China's new energy vehicle industry from the attitude of business model innovation. (1) improve the range of recent energy vehicles; [12] (2) reduce the acquisition price of recent energy vehicles; (3) innovate the operation mode; (4) strengthen the intelligent charging facilities support; (5) improve the auto industry services; and (6) cultivate new consumption habits. [13]

4. CONCLUSION

First, combining the characteristics of the new energy vehicle industry and the current stage, the evaluation system of new energy vehicle industry business model innovation at the early stage of the industry is proposed, and the index weights and comprehensive weights of each layer are determined using hierarchical analysis and the three indicators with the highest weights are: reduction of vehicle ownership cost, reduction of electricity ownership cost and intelligent charging facilities.

Second, summarize the business model innovation model of the new energy vehicle industry: the connotation of the industry refers to the solution that the new energy vehicle industry has failed to maximize consumer travel demand and social environmental requirements, using its own key resource capabilities to integrate the resource capabilities of other stakeholders to form an efficient core competitive and sustainable profitable operating system that creates value for the enterprise itself and the industry.

Third, it can be carried out some countermeasures for the development of China's new energy vehicle industry from the perspective of business model innovation: (1) improve the range of new energy vehicles; (2) reduce the purchase price of new energy vehicles; (3) innovate the operation model; (4) strengthen the intelligent charging facilities support; (5) improve the service of the automobile industry; and (6) cultivate new habits of consumption.

At last, in this paper there are many shortcomings, this new energy vehicle industry analysis report can be said to stand on the shoulders of many predecessors to see the world. Many summary places are not in place, but also did not fully understand the mystery, and literature review is also relatively chaotic. It is expected that future research can be more in-depth and analysis of the future situation.

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