The Marketing and Business Mode of New Energy Vehicle Industry: Evidence from BYD

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Abstract. Against the backdrop of increasing global energy constraints, fuel car's consumers are facing high price pressure on car refueling. New energy vehicles emerge at the historic moment, and different automobile brands have gradually invested a lot of energy in the research and development of new energy vehicles. Besides, the competition for new energy vehicles in the industry is also becoming increasingly fierce. This paper concluded that the whole new energy vehicle industry is more suitable, the effect of the better marketing strategy based on the analysis of the new energy vehicle marketing strategy of the BYD brand. At the beginning, this study first elaborated on the development background of the new energy vehicle industry and introduced the basic situation of BYD company. Subsequently, the BYD is analyzed comprehensively based on the SWOT model. Finally, this paper will focus on BYD's two marketing models for evaluation, and put forward suggestions for other enterprises in the new energy vehicle industry. According to the analysis, BYD company uses its marketing and business mode captured a lot of market share. However, this strategy let most consumers have the stereotype of "low price" for BYD's products. It directly affects to BYD company's high-end new energy vehicle sales. These results shed light on guiding further exploration of other companies in the new energy vehicle industry.

Keywords: New energy vehicle; BYD company; marketing mode; strategy.

1. Introduction

New energy vehicle is a broad concept, which is different from the use of gasoline and diesel as the engine of vehicles [1]. It refers to the use of unconventional energy, or the use of conventional energy but with new power devices to convert energy, drive vehicles. Generally, it has a wide spread of category including hybrid electric vehicles, pure electric vehicles, fuel cell vehicles, hydrogen energy-powered vehicles, gas vehicles, biofuels, automobile, solar energy vehicles, other new energy vehicles, etc. From the energy sources, traditional cars use gasoline and diesel. The energy source of new energy vehicles can be directly the electricity of the power grid, or it can also be some new fuels, including natural gas, ethanol gasoline, methanol, dimethyl ether, hydrogen, biofuels, etc. If it was a tram, the vehicle design would be completely different from a traditional fuel car. If the fuel is still used, then the engine will make some modifications. From the perspective of energy conversion, new energy vehicles can be divided into three categories: electric vehicles, fuel cell vehicles, and hybrid electric vehicles. Under the overall environment of international energy supply shortage and sustainable development advocacy, the energy saving and environmental protection characteristics of new energy vehicles occupy great advantages. The government attaches great importance to the development of new energy vehicles. China's new energy vehicle production. The industry has developed rapidly. In 2015, the annual production and sales volume reached 34.05 and 331,100, respectively, jumping to become the biggest new energy vehicle production and sales country, continued to maintain its lead in 2016 and 2017 [2]. During the tenth Five-year Plan period in 2001, China included the research and development of new energy vehicles in the "863" major scientific and technological topics. China puts forward the strategy of "energy-saving and new energy vehicles". Driven by the overall environment, the government has put forward relevant requirements for new energy vehicles. In 2010, the ownership of electric vehicles can reach 5% -10% of the total car ownership. In 2030, the ownership of electric vehicles will need to account for 50% of the total car ownership [3].

There are some common marketing models in the new energy industry. Primarily, the Interest policy where some brands of new energy vehicles down payment is only 10% of the total price, pay the full car fee within three years can be exempted from interest, the pay can enjoy within five years of the low-interest policy. Besides, Baojun Company provides free door-to-door charging pile installation service for customers who buy their new energy vehicles, and Liuzhou Power Supply Bureau installs free electricity meters for consumers who buy new energy vehicles [4]. Moreover, consumers who originally bought the Baojun new energy vehicle E100 model can upgrade the E100 to the E200 through replacement.

The marketing of new energy vehicles faces several key problems at this stage, which is demonstrated as follows:

- High price, new energy vehicles are emerging things. Under the cloak of "new", it means that enterprises need to invest a lot of manpower and material resources in scientific and technological research and development and innovation. In this case, it requires a lot of time, energy and money. Therefore, the enterprise reflects the high cost in the pricing of new energy vehicles. Expensive prices lead to low purchase intentions [5].
- Single product. Compared with traditional fuel vehicles, the appearance of new energy vehicles is relatively single, simple interior, and almost simple electronic display, which is quite different from the look and experience of traditional interior.
- The sales system has not been fully built up, and the new energy vehicles are concentrated in big cities, and the number of new energy vehicles in the market in some remote urban areas is relatively small [6].

Aim at finding a suitable marketing model for the new energy vehicle industry. This article selected BYD as a target company and will make a brief introduction to BYD company basic description to give a preliminary impression and understanding of BYD company [4-6]. Secondly, it will conduct a market analysis of BYD company, including the company's advantages and disadvantages. Subsequently, the case analysis will be carried out, which will evaluate BYD's two specific marketing strategies. Afterwards, the suggestions and relevant advice will proposed to other companies in the industry [7, 8].

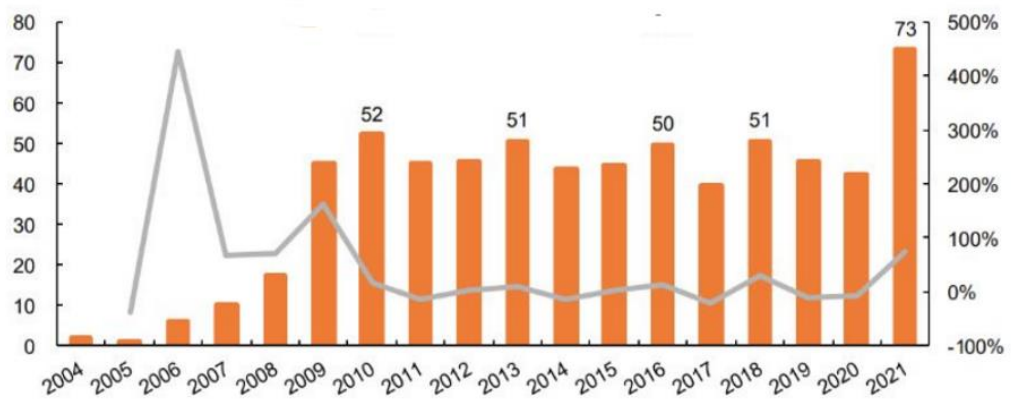

Fig. 1 BYD 's car sales and growth rate. The unit is ten thousand vehicles. The gray line and organge bars represnt for the growth rate and sales volume, respectively.

2. Basic Descriptions of BYD

In 1993, the research institute established Bigge Battery Co., Ltd. in Shenzhen, and appointed Wang Chuanfu as the general manager. In the Bigge company, Wang Chuanfu has accumulated a lot of working experience in enterprise operation and battery production technology and experience.BYD Industrial was established in 1995, focusing on the battery business. In 2003, BYD acquired Qinchuan Automobile and officially entered the auto industry. In recent years, the tram trend

is popular, as the battery power of BYD to master the core technology, in the field of electric vehicles first, is the leader in the industry as shown in Fig. 1..

BYD launched the blade battery at the beginning of 2020, and the first ride on BYD Han, Han's new energy vehicles price of more than 200,000 yuan, Han monthly sales of more than 10,000, Han's success marks BYD's long-term accumulation in the field of new energy into the outbreak period, consumers' brand awareness of BYD cars has also been significantly improved as illustrtaed in Fig. 2. Besides, BYD's new-energy vehicle sales exceeded 90,000 units in a single month. which can be seen in the December 2021 sales data depicted in Fig. 3.

Fig. 2 The China's new energy vehicle sales (left panel) and BYD's fuel car and new energy vehicle sales (right panel). As for the sales volume (left panel), the gray line and orange bars represent for Penetration rate of new energy vehicles and new energy vehicle sales. Regarding to the right panel, the gray and orange bars represent for fuel vehicles and New energy vehicle sales, respectvely.

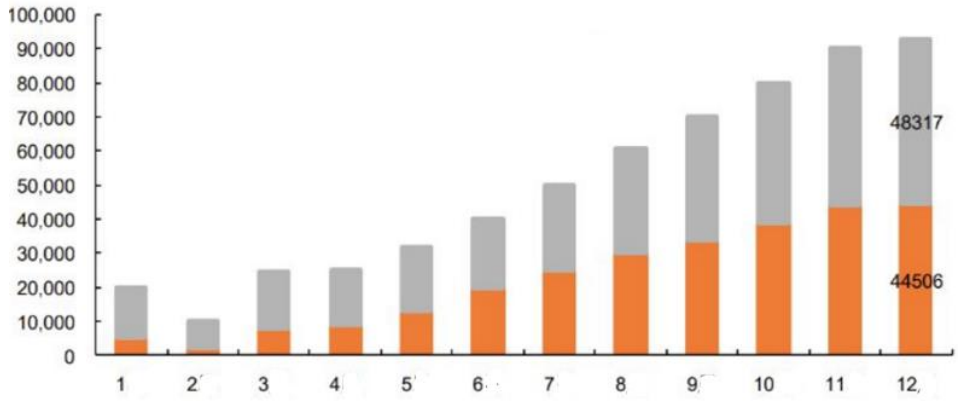

Fig. 3 BYD's monthly sales of new energy vehicles in 2021. The gray and orange bars represent for pure electric and hybrid power vehicle, respectvely.

3. Marketing & SWOT analysis

Based on the Boston matrix model for the analysis, for the current BYD company, the new energy vehicle business belongs to the Star, with a high market share and a high market growth rate. As exhibted in Fig. 4. For the Stars bussiness, it is important to take the market share rapidly. For the Stars business, the competition will be going to get more intense. In January 2022, BYD's passenger car sales reached 92,926 units, up 367.65% year on year, and increased by more than three times compared with the same period last year! In addition, despite the global chip shortage, ranking at the top of Chinese mainland new energy vehicle sales, occupying the largest share of China's new energy vehicle market. Table. 1 lists the detail comments from SWOT analysis.

Fig. 4 Schematic of the Boston matrix model.

Table 1. The SWOT model for the analysis

Strength	At first, BYD made its fortune through batteries with rich technological reserves and a relatively complete supply chain. It can greatly reduce the production costs, and the final price of the sedan is low. Take BYD Han EV as an example, its official price is 214,800 to 284,500. With the same level of competitors, Xiaopeng P7 official price is 22.42~40.99. Tesla Model 3 is 266,7400 to 339,900 yuan. NiO ET 5 is 328,000 to 386,000 yuan [6]. Secondly, occupy a large number of markets in the new energy vehicle industry, BYD company has a high brand awareness. Customers are familiar with the brand. Customers are more assured of the quality, and have a relatively strong willingness to buy.
Weakness	Firstly, the publicity intensity is not in place. The traditional consumers do not understand the safety, comfort, and convenience of new energy vehicles. The mass market has a certain resistance to new things like new energy vehicles, which can not fully accept and spend money to buy. Moreover, supporting facilities are not perfect. Charging piles are not complete, and the charging piles have not been popularized in various cities and regions. As a result, the owners of new energy vehicles need to park their cars in the charging piles a few kilometers away from home. Then this segment of consumers have to walk home. China's total number of charging piles and charging stations for new energy vehicles lags far behind the sales volume and registration volume of new cars. It has increased customers' concerns about consuming new energy vehicles.
Opportunity	In the first place, the concept of environmental protection and sustainable development is popular. The exhaust emissions of fuel vehicles exceed the standard, seriously pollute the air. It increases the PM 2.5 concentration, and reduce the air quality. The national government vigorously advocates the use of new energy vehicles and green travel. Customers will choose to buy new energy vehicles to save energy and help with sustainable development. Secondly, gasoline price is becoming more expensive, and so far, the price of No. 92 gasoline has soared to 9 yuan per liter. Consumers spend too much on refueling and turn to new energy vehicles. Finally, with the completion of a well-off society, the domestic per capita consumption level has gradually increased, which can afford the price of a new energy vehicle [6].
Threat	Policy support for new energy vehicles is facing the whole industry, not for BYD company exclusive. At the same time, under the background of preferential policies, new energy automobile industry competition is intensifying. Although by now in mainland China new energy vehicle sector occupy the absolute big market. Japanese hybrid power cars are cheaper and cheaper. German and American luxury new energy vehicles are entering the Chinese market. The traditional fuel car brand research on new energy vehicles, which means that the industry competition is intensifying. It will be a great threat to Byd in the future.

This requires a lot of targeted publicity for newly launched new energy vehicles. To solve the target customer's potential questions. BYD company is supposed to keep good communication with

local government. BYD company need to communicate and discuss solutions with the government on the issue of charging pile. In addition, BYD should spend some of its time and money on technological research and development for the core competitive advantage of new energy vehicles in order to face the increasingly fierce competition in the industry.

4. Case analysis

4.1 Viral marketing strategy

The rise of new energy vehicles in recent years has gradually entered the public view, but it is still a new thing in the eyes of most Chinese people. Chinese society is a complex network of relationships, with people getting used to asking opinions (e.g., family and friends) when considering buying new things. Viral marketing, as the name suggests, refers to the use of existing and existing social networks to spontaneously spread word of mouth, so that the company brand can snowball to spread to thousands of audiences. In the process, public praise is particularly important. Byd in the sales process to show transparent, thorough service, and constantly gain consumers' trust in the brand. Improve the quality of after-sales service, to build a reputation. The first response potential consumers asked their friends and relatives was BYD. Based on the service, the brand communication speed is very fast, so the customer consumption experience is improved. On the other hand, the service cost is high, with high requirements for employees to follow up with customers, and high demand for high-quality employees, that is, for the company, the salary cost will also increase [7].

4.2 Price strategy

Price is the most direct bridge to communicate between buyers and sellers, and if the price is too high, less attractive to consumers. The price is too low, the product grade can not match. Byd new energy vehicles just entered the market when the use of penetration pricing method, with a lower relative market average price into the market, through the expense of high gross profit in exchange for a larger market share and high sales. As BYD's new energy vehicles became more well-known to the public, it began to launch new models at relatively high prices. In these models, BYD uses a higher-market pricing strategy. At first, it is entering the market at a low price can create brand awareness in the field of new energy vehicles and attract target customers. In the later stage, the price increase of some products reflects product diversification, some products transition to the middle and high-end, and the profit space of individual products increases. However, at the beginning, the price is low, in the eyes of consumers is not a high-end brand of products, and consumers with high consumption power will not choose the BYD brand, resulting in the high consumption level of BYD consumers group being relatively small [5]. Later BYD launched higher price products, its target audience may not have the ability, or willingness to pay, and the higher consumption level will choose other traditional high-end brands of new energy vehicles, and will not spend almost the same price, to buy BYD brand of new energy vehicles. The external image and brand positioning of cars are quite meaningful in the hearts of most Chinese people.

According to Boston matrix model, the new energy vehicle business belongs to Stars. BYD company should be given to capturing market share preferentially and BYD has done. For a Stars business, capturing a large share of the market is necessary. It helps expand brand awareness and influence. This will be useful to future sales.

5. Suggestions

The current competition between new energy vehicles is actually to some extent similar to the experience of smartphones replacing clamshell phones. Tesla, similar to APPL, was the first leader and pioneer in the world to launch new energy vehicles. A decade ago, Volkswagen, BMW, Mercedes-Benz, Audi, Honda, etc. were the leading brands of traditional fuel cars, just like Nokia, it was difficult to jump out of the comfort zone in the field of fuel cars. Nevertheless, in the oil resources

are increasingly scarce, gasoline prices increasingly expensive environment, the development of fuel cars large probability is limited, national policy support will be smaller and smaller, make new energy vehicles will be the trend of The Times, these brands should increase the brand of new energy vehicles development and investment, allocate funds in the independent innovation of new energy vehicles, rather than still dead in the field of fuel vehicles [9].

In the overall environment of advocating new energy, these brands have also begun to produce new energy vehicles. Whereas the traditional concept of consumers and the obsession with brands will make these big brands in the fuel vehicle industry reduce the sales of new energy vehicles. Customers will worry about whether the brands used to make fuel vehicles are immature in the technology and quality of the field of new energy vehicles. At this time, these traditional enterprises launching new energy vehicles at the same time should increase efforts to conduct product publicity, convey new values to customers, and transfer the core of environmental protection, energy saving products [10]. In the meantile, one ought to apay attention to their brand in the customer level of the reputation, and strengthen the sense of service.

6. Limitation & Future outlooks

Nevertheless, the analysis and evalutiaons of this paper have some shortcomings and drawbacks. The data support of the full text is almost from the Internet and the lack of reference data for field research. New energy vehicles are a new thing, and there is less literature on related research. The research and investigation time of previous scholars in this field is relatively short, and the accumulation of research results is less. The authenticity and integrity of many data need to be investigated. Beisdes, this paper only studies China's new energy vehicle market. The data collection, collation, and presentation of BYD company are based on the Chinese mainland market, not including the overseas market. The sales data of BYD company in the international market was not studied and analyzed. The comparison between BYD and new energy vehicle brands such as Tesla and NIO is also limited to the Chinese market.

In future research, it is hoped to collect more data on new energy vehicle brands, conduct an in-depth comparison with BYD, and make an analysis from more angles, not only limited to the sales level. We also hope to collect specific data on the research and development of new energy vehicles (research and development funds, etc.). In the future, scholars need to expand the scope of research, put BYD brand in other countries such as the United States and Britain, compare it with its competitors, and study what marketing strategies BYD will use after losing the advantages of its local brands in different countries.

7. Summary

In conclusion, this paper takes BYD's data as an example to discuss the marketing model of enterprises in the new energy vehicle industry. At the beginning of this paper, the development background of the new energy vehicle industry is expounded, and the basic situation and sales data of BYD are expounded and analyzed. The market share of BYD's new energy vehicles in the industry is analyzed, and the advantages and disadvantages of BYD are evaluated based on the SWOT model. Finally, this paper focuses on BYD's viral marketing strategy and price strategy for evaluation, and puts forward suggestions for other enterprises in the new energy vehicle industry. The limitations of the analysis are mainly reflected in the lack of previous research data and insufficient reserves of new energy vehicles. Specifically, this paper only considers the sales and development prospects of new energy vehicles in the Chinese market. In the future, collecting more data and expanding the field of research is necessary. Overall, these results summarize the better marketing means and market segmentation for BYD and marketing mode of new energy vehicles, which offer guideline for other enterprises in the new energy vehicle industry.

References

[1] Xie Zhiming, Zhang Yuan, He Zhengchu, Zhang Mi. Analysis of patent trend of new energy vehicle industry. China Soft Science, 2015(09): 127-141.

[2] Ma Jian, Liu Xiaodong, Chen Yi-song, et al. Current situation and countermeasures of new energy vehicle industry and technology development in China. China journal of highway and transportation, 2018, 31(08): 1-19.

[3] Shen Wei, Lu Minxun. Development status and prospect of China's new energy automobile industry. Automobile practical technology, 2020, 45(22): 239-242.

[4] Wu Liping, Tan Xinqu, Wu Xing. Comparative analysis of "marketing mode" market research of new energy vehicles in Liuzhou and Guangzhou. Journal of Nanning Vocational and Technical college, 2020, 25(01): 71-76.

[5] Wang Junwen. Research on Marketing Strategy of New Energy Vehicles. Science & Technology Economic Market, 2019(12): 70-72.

[6] Sun Haolun. Marketing Strategy Analysis of BYD New Energy Vehicles. Straits Technology and Industry, 2019(02): 64-66.

[7] Lv Qing. Analysis of Effective Marketing Strategies for New Energy Vehicles -- Taking BYD as an Example. Automotive practical technology, 2020, 45(23): 252-254.

[8] Zhang Jin, Gao Jing. What pricing strategy does BYD need?. Economic Data Translation, 2015(02): 1-7.

[9] Zott C, Amit R, Massa L. The business model: Recent developments and future research. Journal of Management, 2011, 37(4), 1019–1042.

[10] Bohnsack R., Pinkse J, Kolk A. Business models for sustainable technologies: Exploring business model evolution in the case of electric vehicles. Research Policy, 2014, 43(2): 284–300.