

Operations Management and Market Analysis of Tesla Motors

Zhouhui Zhang

School of Management, Shanghai University, Shanghai 200444, China

Abstract

In the late 20th century, the automotive industry was booming and competitive, and in the 21st century, climate change and energy shortage are becoming more and more serious. Under such circumstances, Tesla Motors has brought great changes to the automotive industry, and new energy vehicles have had a certain impact on traditional cars. The paper examines the strategy of Tesla's initial entry into the automotive market and analyzes the strategy that Tesla should adopt in the Chinese market. In the early stage of Tesla's establishment, the company had clear objectives and adopted a strategy that was leading to the overall development of the company and gained a competitive advantage for the company. This paper argues that with the development of the company's IPO, further expansion of its scale, and development of overseas markets, Tesla's strategy should change with the changes of the external environment. This paper also analyzes Tesla's market in China and points out that the formulation and change of corporate strategy at this time should fully consider the internal and external factors of the company and realize the mutual synergy of all elements of the company.

Keywords

New Energy Vehicles; Operations Management; Corporate Strategy; Moat Analysis.

1. Introduction

The word "strategy" can be traced back to the Greek word "strategos", which was originally used as a military term referring to "the art of commanding an army by a general". In the middle of the 20th century, strategic thinking began to be valued in the business world. Business strategy can be described as market behavior, including policies, plans, and procedures. Strategic business management is a series of business management operations that combines the daily business decisions of a company with long-term planning decisions. Strategic business management is a dynamic process of defining business goals based on the external environment and internal business elements of a company, ensuring that the goals are implemented correctly, and accomplishing the mission of the company. In contrast to the concept of strategy, business operations management focuses more on the planning, organization, implementation, and control of the company's operational processes, which are closely related to product production and service creation. Product development includes processes such as technological research, product design, and process design. In the specific research process, the two main empirical methods in operations management are surveys and case studies.

The paper analyzes Tesla Motors (hereinafter referred to as Tesla) from its inception, current operations, and future trends, based on theories from management disciplines and focusing on aspects of business operations management and strategic management. Based on public interviews and statements by Tesla's founders and top executives, company documents, government data, and market sentiment reports, one of the empirical approaches to operations management, the case study, is conducted.

The remainder of the paper is organized as follows. Corporate strategy and operations management are analyzed in Section 2. Section 3 evaluates Tesla using Warren Buffett's moat

theory. Section 4 dissects the Chinese new energy vehicle market, identifies the opportunities and challenges for Tesla's entry into the Chinese market, and proposes coping strategies and initiatives on how Tesla should expand its market share. The last part provides an overview of possible future development areas and trends of Tesla. Concluding remarks are also presented in the last section.

2. Corporate Strategy and Operations Management Analysis

2.1. Company Profile

The global motor vehicle industry has experienced nearly a decade of sustained growth since the 1990s, and the industry has grown larger as the global economy has grown. In the 21st century, the industry has become more competitive, albeit at a slower pace. In 2016, the world's annual vehicle production exceeded 90 million units, with six top car companies accounting for half of the industry. Among them, Nissan, the shortest established company, was founded in 1967. General Motors Company and Ford Motor Company have more than a century of experience in the auto manufacturing industry. The strong barriers to entry in the auto industry have prevented many new entrants. Tesla, however, has attracted more and more car buyers to purchase electric cars with its stylish new energy vehicle image and considerable acceleration, and its entry and development has brought a great change to the global motor vehicle industry [1].

Tesla is an American electric vehicle and energy company that produces and markets electric vehicles, solar panels, and energy storage devices. Dating back to July 2003, Martin Eberhard and Marc Tarpenning created Tesla, headquartered in California's Silicon Valley, with the goal of accelerating human society's progress toward sustainable transportation through innovative technology. A year later, Elon Musk entered the company and led the Series A financing round. In June 2010, Tesla was listed on the Nasdaq Stock Market, becoming the only independent manufacturer of pure electric vehicles listed in the United States. In 2014, Tesla's annual revenue exceeded 2 billion USD, and its market capitalization rose approximately 144 times in the four years since its IPO. In 2017, Tesla became the highest market capitalization automaker in North America, which means that Tesla has become a major player and a competitor to be reckoned with in the automotive industry. Tesla currently has five models: the Roadster (two-door luxury sports car), the Model S (four-door coupe), the Model X (SUV), the Model 3, and the Model Y (seven-seat).

2.2. Strategy Development Analysis

The automotive industry is capital-intensive, with the cost of launching a new model approaching 1 billion USD. In the 1960s, Ford, Chrysler Corporation, and General Motors (hereafter referred to as the "Big Three") dominated the United States auto market with 90% of market sales. In the late 1980s, specialized manufacturers emerged in the United States with the aim of supplying key components to large companies such as General Motors, branding them as their own, and distributing them through the vast distribution networks of General Motors and other companies [2]. Before the "Big Three" had fully considered the market impact of the changing structure of automotive manufacturing, the founders of Tesla realized that they could benefit from the changing structure of the industry by outsourcing the manufacture and assembly of most standard components to these specialized manufacturers, thus avoiding the initial capital expenditure of setting up manufacturing plants.

Detroit Thinking (Traditional Gasoline Car Thinking) considers that electric cars are about replacing the powertrain with a battery-driven one, and the selling point is the low cost of using batteries, environmental protection, etc., but the products have limited range and mediocre performance. Tesla's strategy at the beginning was to build an electric sports car, pursuing the

best performance and stylish appearance regardless of cost, and solving the problems of electric car range and light weight of steel frame structure. By starting at the high end, Tesla overturned the "odd circle" of electric cars entering the market only at low prices and low performance. The initial business plan emphasized the goal of high-end buyers.

Since then, Tesla has proposed a "three-step" strategy: the first stage is to enter the high-end, high-performance, sporty niche market; the second stage of the price is close to Mercedes-Benz BMW and other luxury car market; the third stage is to enter the low-cost economy of the mass market. The strategy is positioned as an introduction to the high-end market and a gradual extension to the mid- and low-end markets. After gradually gaining market recognition, the company will gradually launch models suitable for the middle and low-end markets driven by technological innovation and market maturity. The strategic route from high to low, advanced power management system and other technical advantages have enabled Tesla to produce products to meet market demand based on the current level of battery materials and pry the industry development.

2.3. Product Design Analysis

Tesla currently has five models: the first car, the Roadster (a two-door sports car), launched in 2008; the second product, the Model S (a four-door electric luxury coupe), launched in 2002; the third product, the Model X (a luxury electric SUV), delivered in September 2015; the fourth model, the Model 3, delivered in 2017; and the fifth The Model Y is versatile and can accommodate up to seven passengers and luggage. Recently, the Model S P85D was named the most outstanding car in 80 years by Consumer Reports, a United States non-profit consumer assessment organization, with a score of 103 out of 100. This is just as the company's CEO Musk would like it to be: Tesla strives to provide every consumer with a satisfying all-electric vehicle within their spending power.

The first car, the Roadster, with its 0.60 mph acceleration time of under 4 seconds, was on par with high-end luxury cars such as the Lamborghini, Bugatti Veyron, and Ferrari. As a newcomer to the automotive industry and a low-volume manufacturer, Tesla made early compromises on vehicle comfort in product design, such as seats that were virtually non-adjustable, low quality of fit and finish, and difficulty getting in and out of the car. This was replaced by an avant-garde and atmospheric appearance, a top speed of 200 km/h, and a full charge in 75 minutes. The product design gives the target customer a great driving experience (the pursuit of speed and acceleration) and a sleek, sporty appearance [3]. [Table 1](#) shows the aspects of Tesla's product design that are important to them.

Table 1. Key Points of Tesla's Early Product Design

Aspect	Content
Acceleration	Faster acceleration is closely associated with higher performance and is considered to represent higher quality. The model of the number of seconds it takes for a luxury coupe to release a new car requires acceleration from 0 to 60 miles per hour
Battery Life	Tesla was known early on for its long-range battery electric vehicles. Range e is defined as the distance a vehicle can travel without refueling or recharging

After the launch of the Roadster in 2008, the high level of media attention and competition contributed to the model's iconic status, meaning Tesla did not need to engage in traditional advertising. The Model S was then priced at the high end of the market, forming the base of Tesla buyers at a time when Tesla was known for quality, innovative design, and exceptional customer service. Fall 2015 saw the introduction of the Model X. In April 2016, the highly

anticipated Model 3 received nearly 400,000 orders before going into production, priced at 35,000 USD. Each model launch has steadily tilted Tesla toward a larger market segment. The company's market capitalization increased from 226 million USD when it first went public in 2010 to 50 billion USD in 2017, by which time Tesla was already a serious competitor to the "Big Three".

Sustainability is also one of the most important features of Tesla's products. At the beginning of the company, the core competencies of traditional cars, such as engine design, were already firmly in the hands of the "Big Three". Without these technologies and production capabilities, Tesla turned to the development of advanced electric vehicle powertrains and AC propulsion charging systems. The car is built around an innovative technology with an aluminum body that offers unique design possibilities and light weight advantages and contributes to acceleration and mileage improvements. In addition to the aluminum structure of the body, boron steel is also used for reinforcement, which significantly reduces the required energy consumption while maintaining the performance of the car, which can reach a range of 400 to 500 km. In addition, the management decided that the entertainment facilities in the car must meet certain standards. Stereo radio supports AM, FM, HD, MP4, ACC, etc. The touch electronic screen of 17 feet and above, wireless operating system, etc. add to the high-tech feeling of the Tesla car; the owner can even check the car's condition through cell phone applications.

2.4. Marketing Model Analysis

Since the 1950s, the United States regulations have prohibited original automobile manufacturers from competing with dealers. Musk believes that under that regulation, dealers were not properly incentivized or trained to effectively sell electric vehicles. Tesla imported ideas from the consumer electronics sector and proposed using the Internet for direct sales, making high-end retail stores (owned and operated by the manufacturer) an effective marketing and education tool. At the same time Musk deliberately borrowed from the consumer electronics industry to drive sales and add excitement to the launch of new products. Collecting prepaid orders both helped to finance and reduce market uncertainty. Such a marketing strategy allowed Tesla to better enter the automotive industry by offering direct sales of premium electric vehicles to customers in the high-end market. Table 2 shows the comparison between Tesla's direct sales model and the marketing model of Apple, a typical representative of high-tech companies. Table 3 presents the SWOT analysis of Tesla.

Table 2. Comparison of Tesla's and Apple's Marketing Models

Tesla	Apple
More than 18 directly managed stores around the world, built in developed areas and high-end consumer places	The first directly managed store was established in the United States in 2008, and now there are more than 40 directly managed stores in China, mostly are in high-end customer gathering areas
Retail stores focus on building brand awareness and aim to experience and education; and install charging posts for owners to use for free	Retail stores focus on experiencing products, educating users, and providing relevant information to create a positive "Apple" culture
Use the brand thinking to do the market, and use the Internet thinking to do the product	Use the consumer psychology of seeking new and different to expand the market by continuously launching new products

Table 3. SWOT Analysis of Tesla

Aspect	Content
Strength	Technological advantages: advanced battery management system and differential pressure transmitter Brand: leading in the field of pure electric vehicles
	Innovation: advanced programming robots make car manufacturers more advanced than their peers Complete industry chain: hundreds of charging stations in California, solving the charging bottleneck problem
Weakness	Technical bottlenecks: long-distance charging problems remain to be solved
	Limited production capacity and insufficient popularization
	High selling price and relatively narrow consumer base High cost, low profit, low profitability; and most of the funds come from low-interest government loans
Opportunity	The global pursuit and vigorous development of sustainable concepts will lead to an increase in demand for new energy vehicles The strong demand in the Chinese and European markets: the spending power of young consumers is greatly increasing, and the Chinese government has subsidies for new energy vehicles The lack of maturity of potential competitors in mastering key technologies and their weak control over the market
Threat	Technically: the pure EV market is not mature enough and there are still many technical problems compared to the traditional gasoline vehicle market
	The pure EV market has been developed for too short a time and the market systems are not perfect
	New entrants are starting to flood into the market (caused by the expansion of new energy demand, government subsidies and other driving forces)

3. Moat Analysis

Just as a moat protects a castle from being captured by enemy forces, a corporate moat is a sustainable competitive advantage that protects a company from being eroded by competitors. Coca-Cola, Wells Fargo, and Geico Insurance are some of the stocks chosen by Warren Buffett, the "God of Stocks", based on this theory. Interestingly, Buffett had a "war of words" with Silicon Valley's "Iron Man" Elon Musk in 2018. Musk attacked the concept of moats as outdated and untenable, and the power of technology to allow rivals to break through them. Warren Buffett politely said that Musk is a good manager, but he will not buy Tesla stock. The following part will analyze how Tesla stock, which is hard to get into Warren Buffett's eyes, is proving its value with a "tenacious" move.

3.1. Competitive Advantage

Moat theory emphasizes sustained competitive advantage, which refers to a firm's ability to create more economic value by implementing strategies that make it difficult or impossible for competitors to replicate. [Table 4](#) below shows the Michael Porter's Five Forces Analysis of Tesla, which is used as a basis to develop the moat analysis of Tesla.

3.2. Intangible Asset

3.2.1. Brand Attraction

The most loyal car brand: Tesla is positioned as the only premium electric car brand in the world, creating a unique brand context for Tesla. Some followers buy Tesla, not to buy an electric car, but to buy a brand different from "Mercedes" or "BMW", to highlight their own taste. The name Tesla is a household name in China, and even people who have nothing to do with

cars can recognize the "T" logo on Tesla's cars on the street. Even when the manufacturer launches a new electric car, the first question auto critics ask is: how does it compare to Tesla? Fan base: large fan base, high viscosity, and only 15 years to go from nothing to something. From a marketing perspective, Tesla fans will advertise for free through actions such as shooting videos and posting blogs. Measured in numbers, Tesla held 854 million USD in user deposits at the end of 2017 and still has over 400,000 sitting around waiting to be delivered cumulatively from 2016 to 2018. This is in addition to deposits for two unproduced models and deposits for features that are not yet developed [4]. It is equivalent to fans lending their money to Tesla without interest, and banks do not have such branding power.

Table 4. Michael Porter's Five Forces Analysis of Tesla

Aspect	Content
Bargaining power of supplier	The industry chain can be divided into three fields: lithium battery, motor electric control and vehicle. Lithium resource supply shows obvious oligopoly and enjoys pricing power; motor electric control upstream industry is highly concentrated and pricing power is in the hands of large international groups
Bargaining power of buyer	Weak customer bargaining power: Tesla targets high-end consumers, whose focus is not on price, but on technology and driving experience; the more recently launched mid-range models, there are fewer similar models in the Chinese market, buyers lack reference, and Tesla is prone to unilateral pricing
	Weak government demand bargaining power: if the Chinese government has demand, it is not entirely cost-oriented, more to alleviate the conflict between the environment and economic development
Threat of new entrant	Chinese government regulations disallow non-automotive companies to produce new energy vehicles
	Automotive industry barrier: strong
	New energy vehicle industry barrier: high technical threshold and high manufacturing cost
Substitute	Traditional vehicles: mature development, fierce competition, and high consumer propensity to buy
	Hybrid vehicles: mature technology, but low room for innovation
Rivalry	Ministry of Industry and Information Technology of People's Republic of China announced a total of more than 100 companies in the new energy vehicle industry, and competition is fierce

Table 5. Tesla versus BYD

Brand	Type	Popular Model	Target Market	Delivery Growth Rate / %
Tesla	Pure EV	Model 3	International market High consumption groups	142
BYD	Mainly hybrid	Tang	Localized in China Mid- and low-end groups	118

Pricing power: the above Table 4 has analyzed Tesla's pricing power in the Chinese market: high bargaining power for suppliers but low bargaining power for buyers. After the US-China trade war, the bargaining power of buyers is becoming stronger. 25% tariff rose to 40%, which is a huge blow to Tesla with its high unit price. After the new price hike, its number one competitor in the Chinese market, BYD, sold 2,571 vehicles ahead of Tesla in 2018. Table 5 below shows a detailed comparison between Tesla and its number one competitor in the Chinese market, BYD [5]. However, Tesla has significantly reduced prices only for the Chinese market, and prices in the United States are not only firm. Whether Tesla's leading technological

advantage can still dominate the pricing power depends on whether the "BYD's" can break through the technological dilemma in the next few years.

3.2.2. Patent

There is a saying in the electric vehicle industry that "the one who gets the power battery gets the world". The battery not only occupies the core technology position, but also occupies "half of the cost" of the whole vehicle. Tesla mastered the core battery technology in the initial stage. As of January 2019, according to the Derwent patent database, Tesla has disclosed 372 related patents, and most of its core technologies are focused on power battery and power unit-related fields. For example, the latest 21700 battery installed in the Model 3 has 20% higher energy density than its predecessor, which is significantly ahead of its competitors. Tesla has stated that it wants to disclose all its patents, an action that has not reduced its competitiveness. Tesla's main competitors are still traditional car companies, as sales of new energy vehicles represent only 1% of the automotive market. Tesla's disclosed patents are difficult for traditional cars to exploit, so Tesla's patents remain a strong moat for it.

3.2.3. Legal Licensing Right and Direct Sales Model

Unlike the dealership model of traditional car companies, Tesla has learned from Apple's direct sales model. It is not that traditional car manufacturers do not want to adopt this direct sales approach, but they cannot. For one, several laws in some states of America that allow Tesla to sell directly were created just for Tesla. For two, in the century-long evolution of the division of labor in the traditional automotive industry, dealers have become one of the largest organizations, and automakers cannot easily bypass dealers to sell cars directly. Tesla's high-end retail stores focus on building brand awareness, using brand thinking to do the market, and different aspects of the moat intertwine to form a complex ecological network. The product is made with Internet thinking: on the one hand, the software and hardware are perfectly handed over, and on the other hand, the middlemen are reduced to share the profits. The three intangible assets of brand, patent rights and legal licensing rights help Tesla to fend off competitors. However, its managers still need to pay close attention to the changes of intangible assets and adjust measures in time to maintain the leading edge.

3.3. Industry Chain and Cost Advantage

LUXSHAREICT, XINWEI communications and other industrial good stocks are Apple industry chain in the A-share cultivation, Apple index from 900 points to 11,899 points. The same Tesla effect also triggered the launch of domestic "Tesla concept stocks", mainly energy and battery, such as Narada (300068) and Desa (000049). Additionally, the cost of the new car is expected to further reduce the cost. The upcoming new version of Model 3 is equipped with lower-cost lithium iron phosphate batteries [6]. Domestic power battery supplier CATL has reached a supply agreement with Tesla. With the embedding of the new battery, the localization rate and overall cost of the Model 3 is estimated to drop by 6%. Furthermore, the resource advantage also comes from Tesla's system integration innovation: from vehicle engineering, electric drive, in-vehicle internet to market terminal, Tesla adopts system integration to form an optimal whole-process system and realize the integration of "whole value chain" for customers.

3.4. Will Tesla's Moat be Eroded?

Instead of having an impact on Tesla's moat, technological development will facilitate the implementation of Tesla's smart models, such as self-driving and car sharing. However, there are still many safety risks associated with such technologies, such as the tragedy of Mr. Huang's death in 2018: a safety accident caused by the owner's use of Tesla's Model X autopilot mode. While developing high technology, Tesla needs to weigh the trade-off between benefits and owner's personal safety to avoid tragedies. Optimistically, Tesla has used high technology to achieve the installation of a 17-foot touch electronic screen and wireless operating system in

the car; it has also enriched the in-car entertainment facilities, such as supporting AM, FM, HD, and other forms of stereo stations; owners can check the vehicle through the cell phone app.

The structural changes in the automotive industry have positive implications for Tesla's development. The concept of electric car was born as early as 1881, when French engineers made electric cars by fitting batteries to horse-drawn carriages. In 1904, Baker's Stanhope electric car was popular in the market, and then Ford produced gasoline cars to launch an impact on electric cars and successfully monopolized the industry market. With the importance of theories such as environmental protection and sustainability, electric vehicles returned to the market. Tesla, born in Silicon Valley, has its innovative gene, and with its advanced power management system and other advantages, it has been able to pry the development of the new energy vehicle industry alone. Early 2020, the pneumonia incident of the new coronavirus infection, an uncommon "black swan" event, had an impact on the global economy.

In short-term analysis, Tesla's five models were temporarily shut down by the outbreak, but the company increased research and development for a new model, the Semi all-electric truck. Tesla's share price is mainly affected by the mass production of new vehicles and the rebound in demand after the epidemic stabilized. In the long-term analysis, the value of Tesla's global high-quality industrial chain is gradually coming to the fore. For companies like Tesla that are involved in high technology such as artificial intelligence, it is meaningless to study fundamental indicators for investment, and it is the right choice to consider long-term technology development and innovation capability. Considering the development trend of the new energy sector, Tesla is still in the leading position and the epidemic has little impact on its long-term development.

4. Analysis of Tesla in the Chinese market

4.1. China New Energy Vehicle Market Overview

China's development has always been focused on green and sustainable concepts. In early 2020, the Chinese government has set a target of 2 million CNY on new energy vehicles and has been supporting the marketization of new energy vehicles in terms of policies. For example, the "Four-Dimensional Incentive Policy System" is to support the production and consumption of new energy vehicles from the national strategy, tax relief, financial subsidies, and industrial policy. With both market and government incentives, China's new energy industry has led the world in production and sales for four consecutive years. Tesla values the potential of the Chinese market and has chosen Shanghai, China, for the first time to build a factory outside of the United States. The company says that it is also the first complete vehicle plant that Tesla has truly designed entirely according to its own design wishes.

From factory construction, production to mass production, the Shanghai super factory took less than a year, creating the "Shanghai speed" of Tesla. The impressive speed also shows the Chinese government's support for Tesla. From the macro agreement to use Shanghai Lingang New City as the site of the factory, to the simultaneous financial and credit policy "package", to the recruitment of employees, all of these show the strong resource allocation ability of the Chinese government. [Table 6](#) below presents a selection of typical competitors in the Chinese new energy vehicle market for further analysis. These include BYD Auto, which has left much to think about, and Better Place.

"Accelerating the transformation of the world to sustainable energy" was the vision of Tesla when it was founded, and it has been its goal during its development. Musk has mentioned that "China is an important part of Tesla's planning map". Tesla China has been established for a short period of time but has grown very rapidly, with more than 1,600 employees since its establishment in 2013. Data show that sales in the Chinese market have accounted for 17.13%

of the total global sales in 2017. The following Table 7 is a categorical analysis of the new energy market in China.

Table 6. Comparison of Tesla, BYD and Better Place

Brand	Content
Tesla	Use the wisdom of IT to build electric cars, the collection of all the technology chain to create a fashionable electric sports car
	By the influence of the suppliers, the risks are more than BYD who is the vertically integrated enterprise
BYD	Relying on its own battery advantage, it has integrated a new industry chain
	Entering the new energy vehicle market by vertically integrating internal resources and insisting on positive R&D
Better Place	Better Place broke into the new energy vehicle market in 2007 with its unique and innovative business model
	It does not produce cars, but works with related car manufacturers, and its core technology is battery replacement technology
	Failure to launch a new energy vehicle model that satisfies consumers, and eventually go into bankruptcy protection

Table 7. China New Energy Vehicle Market Analysis

By Class	By Brand	By Area
<p>China's new energy vehicle market is still dominated by models below the A-class level</p> <p>In the future, as the subsidy policy slides and the price of models above the A-class level drops, the consumption of new energy vehicles will gradually upgrade, which will release the demand for Tesla electric vehicles to a certain extent</p>	<p>The largest market share of pure electric vehicles is BAIC Motor</p> <p>The largest market share in the hybrid is BYD</p> <p>There is no absolute market leader in the high-end pure electric vehicle market, Tesla's market positioning makes it still have a large market opportunity to fill the market gap of this high positioning</p>	<p>Above A-class models are mainly concentrated in the first- and second-tier cities, and rarely penetrate in the third- and fourth-tier cities, with great correlation between consumption level and market</p> <p>Estimating the future supply and demand, the supply and demand situation in the B-class EV market positioned by Tesla is relatively good and the market risk is low</p>

4.2. Challenges and Responses in Chinese Market

First, Tesla should face and solve the problems of the company's operational management itself. From 2016, Peter Kohan, a contributor to the American magazine Forbes, pointed out for the first time that Tesla has "arbitrary dictatorship", to 2019, Tesla's stock market began to appear "ups and downs". There are several management problems on the road of its development. This paper summarizes the following points and makes corresponding comments.

1. The problem behind the "ups and downs" of the stock price. From June 2019 to January 2020, Tesla's share price rose from 177 USD per share to 451.54 USD per share, an increase of 155%. A month later, the stock price even rose to 900 USD per share, and its market capitalization surpassed 166.5 billion USD, making it the second-largest auto company in the world by market capitalization. However, the stock price continued to plummet after the peak, and although the market capitalization remained high, but the stock price has fallen more than 100 USD per share. To address this issue, Tesla's management should consider how much strength the company has behind such a sharp rise and fall? After fully recognizing the fact that Tesla is still a loss-making company, facing the capital market cycle and volatility, the management should lay out the capital strategy in advance and make full use of the capital market cycle to achieve leapfrog development. For example, it can take

enough equity at the low share price to prepare for the capital launch in two or three years, etc.

2. "Dictatorship" and corporate governance issues. For Tesla to spend a huge amount of 2.86 billion USD to buy Solar City (founded in 2008, the U.S. home photovoltaic power generation project company), this matter is almost Musk's final decision. In the decision-making process, no one raised objections to the board of directors. When interviewed by the media, Musk always simply stated that "the deal is a clear-cut matter" and so on. What's interesting is that a few years later, Solar City has proven to be an infringement on Tesla's balance sheet, but not a comprehensive product for Tesla buyers, and the idea of selling solar energy in retail stores was a paper exercise that ultimately became a failure. To address this issue, first the board of directors should fully fulfill its obligation to be responsible for the day-to-day operations and management of the company, oversee the work and fully exercise its voting rights. Secondly, the company's professionals, such as financial personnel should do a good job of asset evaluation for major decisions such as acquisitions and mergers and acquisitions, and third parties to do due diligence.
3. Autopilot mode brings a variety of problems, of which the safety risks are particularly significant. In March 2018, Apple software engineer Mr. Huang, in the United States in California, using the autopilot mode to drive Tesla Model X, the vehicle lost control and hit the concrete barrier in the middle of the road, Mr. Huang then unfortunately died. Artificial intelligence, automation, the Internet of Things, and other emerging technologies will occupy an important position in the future in the development of various industries, but Tesla management must pay attention to such safety incidents, treat new technologies with caution, educate managers at all stages of responsibility and safety, and make trade-offs between the interests and personal safety of buyers to avoid more tragedies. Additionally, as a car company, it can supervise the country and the market to improve the policies and regulations related to traffic and vehicle safety management.

Second, Tesla should adjust its strategy to better expand its share in the Chinese market. China's open market is conducive to stimulate the vitality and innovation of enterprises. Smart, new energy and other directions are the unstoppable trends in the automotive industry, but easy charging and range are still two inevitable problems that hinder its development. Compared with other companies, Tesla has obvious technological advantages, but the current strategic "pace" in the Chinese market is still too conservative due to capacity and price issues.

It seems that Tesla should adopt vertical integration strategy, market development strategy and product development strategy in the Chinese market. In the business level of strategic choice, it should adopt local-specific strategy. In the functional level of strategic choice, it should adopt marketing and research and development strategy. At the same time, to better achieve the strategic objectives, Tesla needs to break through the bottleneck of charging technology, coordinate the planning of charging network, and gradually reduce the construction and operation costs of charging infrastructure; further improve the service level and adopt a local-specific market strategy in the Chinese market; accelerate the development of intelligent areas and keep up with the level of Internet development in China.

Furthermore, Tesla should adjust vehicle prices to increase its share of the Chinese market. In the Chinese market, price is the first element. Even relatively affluent buyers of high-end coupe models will tend to compare the price of the model with well-known brand cars such as Mercedes-Benz, Audi and BMW while focusing on the driving experience. In considering pricing, we should consider the Chinese herd mentality and comparison mentality, if the price is not as good as expected, most buyers will tend to buy the "high-profile" brand cars. To reduce the price and improve the competitiveness of the market, we should take measures such as extending the product type, increasing the number of lower models, diversifying the sales network to reduce costs and accelerating localization.

5. Future Development Trend of Tesla and Conclusion

5.1. Future Trend

The energy business is a major driver for achieving Tesla's business goals, given the trends in the energy market and the importance it is receiving from governments. While continuing to develop the automotive business, Tesla management can also develop the company's business towards the energy industry. Gradually lay out solar energy, glass solar roof and other businesses to accelerate the shift to sustainable energy. In addition, Tesla also intends to enter the California insurance industry to increase its business coverage. Musk mentioned in Tesla's Q4 2019 "earnings call" that Tesla will launch the same brand of insurance for its cars and expand its business to more areas while pursuing lower premiums. The company's management still needs to consider the following aspects: first, to enter new markets to do a full review of the contract specifications; second, from California to adjust premiums, Musk needs to avoid arbitrariness, clearly recognizing the strict rules of the insurance industry, and get permission from the California regulators and other parties.

5.2. Conclusion

This paper analyzes Tesla's market environment, competitors, and other factors, examines the strategies it has adopted, points out the problems in operation and management and proposes corresponding solutions, and outlines the opportunities and challenges facing the company's future development, from its inception and entry into the competitive American auto market to its expansion into overseas markets (mainly in China). This paper also outlines the opportunities and challenges for the company's future development. However, this paper still has the following shortcomings.

1. In terms of the data, the author's data on the market share and the share of each company in the United States automotive market, Tesla's stock price and market value at various stages, government policies and competitor information in the Chinese market are all derived from information appearing in other authors' literature, and the authenticity and reliability of the data in these papers have not been confirmed.
2. In terms of the content, the author focuses on the analysis of Tesla's strategy and future strategic plans at the corporate level, including purpose, resource allocation, new business opportunities, etc. The strategic plans at the functional level are not considered in terms of finance, production, human resources, etc.

References

- [1] M. Safari: Battery electric vehicles: looking behind to move forward, *Energy Policy*, Vol. 115 (2018), p. 54-65.
- [2] S. Meisel, T. Merfel: Economic incentives for the adoption of electric vehicles: a classification and review of e-vehicle services, *Transportation Research Part D: Transport and Environment*, Vol. 65 (2018), p. 264-287.
- [3] A. Bergek, C. Berggren: The impact of environmental policy instruments on innovation: a review of energy and automotive industry studies, *Ecological Economics*, Vol. 106 (2014), p. 112-123.
- [4] N. Wang, L.H. Tang, W.J. Zhang, et al: How to face the challenges caused by the abolishment of subsidies for electric vehicles in China, *Energy*, Vol. 166 (2019), p. 359-372.
- [5] T. Gnann, T. S. Stephens, Z. H. Lin, et al: What drives the market for plug-in electric vehicles? A review of international PEV market diffusion models, *Renewable and Sustainable Energy Reviews*, Vol. 98 (2018), p. 158-164.
- [6] W. B. Li, R. Y. Long, H. Chen: Consumers' evaluation of national new energy vehicle policy in China: an analysis based on a four-paradigm model, *Energy Policy*, Vol. 99 (2016), p. 33-41.