

What's Next for the Emerging Internet Car Business?

Challenges and Countermeasures of XP Motor Corporation

Abstract: XP Motor Corporation is an internet car startup founded in 2014 specializing in new energy vehicles, smart cars, and car networking. It has completed the research and development on its first car. Throughout the 21st century, the automobile industry in our country has maintained sustained and rapid development, with continuous improvement in industrial concentration. Meanwhile, the automotive technology revolution, represented by new energy and auto-piloted vehicles, is moving from mere blueprints to practical applications. The core values of automobiles have gradually shifted from traditional body and chassis hardware to functions, algorithm software, and service operations. Since 2014, Google, Uber, Letv, NEXTEV, and other motor corporations have ambitiously launched driverless car programs. For an internet car company in the process of technological change, XP is facing the problem of how to gain a firm foothold in the highly competitive automotive market. In June 2017, the company obtained a strategic investment of 2.2 billion yuan led, by an automobile industry fund and strategic cooperation with a well-known domestic automaker and a number of international suppliers. It is expected that the first new car will be launched in small quantities by the end of 2017. The urgent questions facing corporate managers include: what kind of sustainable profit model should be adopted; how to formulate a suitable pricing and sales strategy according to the profit model of the enterprise, and whether a reasonable prediction of future corporate income and profitability can be worked out.

Keywords: Internet car; profit model; pricing strategy; financial forecast

As a graduating student majoring in accounting, to gain experience for future employment and career planning, Ma Li made great efforts to apply for internship opportunities at the end of the semester. Fortunately, due to his outstanding academic performance, Ma Li was eventually hired by XP, an emerging motor corporation. His occupation is mainly assisting the CFO to do data collection, data analysis, and work report composing.

Founded in mid-2014, XP Motor Corporation is an internet car startup that aims to create a new energy vehicle for young people who love the Internet. Its main founders are from domestic first-class vehicle companies and internet companies with rich work experience in the research and development of new energy vehicles, intelligent automobiles, and internet products.

At the very beginning of its establishment, XP acquired millions of dollars in Angel Investment from many internet company executives, including Alibaba and YY. In March 2016, the company completed a series of tens of millions of A round financing; in June 2017, it received a strategic investment of 2.2 billion dollars led by an automobile industry fund.

During the first two years after establishment, XP Motor Corporation realized the development of a purely electric-driven system centering on a motor, battery, and electric control and a smart system based on large screen (i.e., “three electrics and one screen”), completed modeling design and development, and established a motor supply chain system. In the second half of 2016, XP Motor Corporation publicly announced its first XP car, a near-production-level internet car product. Some investors and auto media person; el were invited to take a test drive. According to the feedback, XP car gained positive evaluation in terms of its appearance, interior decoration, and intelligence level.

At the beginning of the internship in July, everything about the occupation, including the industry, the corporation, and the post was new to Ma Li. As a motor startup whose products haven’t been listed yet, XP Corporation has very simple accounting system that includes almost nothing more than costs. However, the occupation of finance itself is not easy. Last Friday, the CFO of the company assigned Ma Li a task and asked him to fulfill it as soon as possible.

The task is closely related to the most pressing issues facing the company currently. The company’s previous focus was on research and development, which

made the company a model in the development of mass-produced cars in the domestic industry. It has reached a strategic cooperation with a well-known domestic automaker and a number of international suppliers and expects to launch the first new car in small quantities by the end of 2017. At present, the most crucial problems for XP Motor Corporation are: how to make right pricing and sales strategy and sell the first XP car; and, closely related to this, is this the kind of profit model the company should adopt. Although executives have already conducted several further discussions on these issues, more data are needed to help them make their own decisions while providing the foundation for the next round of financing negotiations.

During the weekends, Ma Li collected information about the company, the external policy environment, and the industry, all of which are presented in the following text; this helped him gain more information about the problems facing the company. However, he clearly knows that the most challenging thing in answering these questions is to create a perfect report during this internship.

1. XP Motor Corporation

1.1 Team

The company has nearly 300 employees, of which about two-thirds are automotive R&D personnel and one-third are internet technology talents. Their backgrounds mainly include well-known automobile companies including Guangzhou Automobile, SAIC, BMW and Lamborghini; automobile parts companies like Delphi; and some IT and internet companies such as Samsung, Huawei, Tencent and Alibaba. Individuals from these companies specialize in auto styling, R&D of new energy vehicles, software and hardware development, internet backstage, and some other fields. To some extent, it is the strong talent team that supports XP Motor Corporation in completing the development of new energy vehicles within a short span of two years.

Like most startups, XP Motor Corporation has implemented equity incentives for its employees. Meanwhile, with its continuous growth and high degree of attention and support from local governments, XP is able to provide its employees with hundreds of high-quality apartments, including a 50m² single apartment, a 90m² family apartment and a 140m² luxury apartment, eliminating the problems of employees' settlement and their children's education.

1.2 Product Positioning

With the rapid growth of the production and sales of electric vehicles under the favored market for SUV, XP Motor Co. plans to launch a technology-driven, stylish and cool electric SUV—with price-friendly features, strong acceleration performance, and prospective endurance mileage, providing users the pursuit of individuality with an entertaining and unique electric car product.

The internet car planned by XP Motor Corporation uses a combination of driver-vehicle networking (to satisfy the car owner's needs of photographing, photography, live broadcast, and sharing), vehicle-vehicle networking (sharing and social contact exploration), and vehicle-cloud networking (big data computing based on cloud platform, and business model expansion such as burglary prevention, insurance, and maintenance) based on electric car and smart car models (realizing environmental identification, self-decision-making, and intelligent control through large numbers of sensors and computing control).

With the ubiquity and popularity of the Internet, the automobile is transforming from traditional a travel tool to a new generation of intelligent living platform. It surpasses the user attributes and the scope of use as is commonly understood by ordinary people. It evolves from a physical driving function into a new living platform and space for consumers. Just as smartphones, which are used for phone calls only 20% of the time, internet cars will go beyond driving pleasure, combining data, internet services, and operating systems with driver, consumer, and automotive hardware to realize the connection between the physical world and the virtual world among car drivers and users, with cars working as the medium.

The 360-degree HD camera on top of the XP car can take pictures or video recordings, satisfying the social sharing needs of consumers. Each XP car consumer will have a dedicated ID account. XP cars will upload a large amount of vehicle status data to the server, enabling real-time visibility of vehicle status in the cloud. Through the after-sale service on the cloud, the XP car can guide users to better use and maintain their vehicles, including making use of after-sale maintenance service in the most convenient XP car sales outlets.

Compared with the traditional automotive industry, the threshold for internet cars is much lower. The two most important components of a traditional car—the engine and gearbox –cost roughly \$1 billion for research and development. But in electric cars, except for several core components like the battery, the rest of the parts lack core technical barriers, thus reducing research and development costs. According to an

estimation conducted by UBS Securities, whereas the previous break-even point for fuel-car companies is 2 million models, the break-even point of electric vehicles is just 200,000, or even 100,000. In fact, the production of batteries, which make up about a quarter to one-third the costs of making electric vehicles, have fallen by half in the past five years.

In the car market, both in the field of new energy vehicles and the field of traditional cars, passenger cars represent the main segment of the automotive industry. Among them, the SUV market is another important part which has developed rapidly in the passenger car market. According to statistics from the China Association of Automobile Manufacturers, although limousines occupied an absolute dominant position in the sales volume of passenger cars in 2016, the SUV outdid this with a cumulative sales volume of 9.023 billion cars and an increase of 47.1% over the same period of the previous year, accounting for 37.01% of the passenger vehicles and 88.1% of contribution to passenger car sales growth. According to a forecast by the China Association of Automobile Manufacturers, future SUV models will continue to grow in popularity, and soon SUV sales are expected to catch up with limousines, accounting for more than 50% in the passenger car market. In the SUV segment, the compact SUV is the mainstream SUV model which is very popular among customers. In 2016, sales of compact SUVs exceeded 4.85 million, accounting for more than 53% of the SUV market.

In the fall of 2016, XP Motor Corporation released a prototype vehicle in Beijing. This prototype has reached 90% of production level. The main performance parameters of the automobile are shown in Table 1. The company's first new car is expected to be available in small quantities by the end of 2017.

1.3 Product Research and Development

The “automobile+Internet” model of XP Motor Corporation redefines the term “car” as a combination of internet technology and a business model based on an automobile team. Since the beginning of its business in 2014, the company has taken the three-power system and the intelligent system technology of large screens (collectively, three electrics and one screen) as its starting point and core of development. In the research and development of new energy vehicles, electric motors, batteries, and electric-controlled pure electric drive systems (collectively referred to as the “three-electric system,” shown in Figure 1) are regarded as the core

technologies in the industry. Since its inception, XP has devoted a lot to the research and development of the “three electrics and one screen” technology, taking the technology as the entry point for the exploration of technology and supply chain and collectively developing the program with a large number of excellent suppliers at home and abroad. Through practice, XP Motor Corporation worked out a high-performance and low-cost development approach. At present, it has applied for more than 200 patents and has been granted 42 licenses, most of which focus on battery packs, electric controls, autopilot, internet black technology, pure electric chassis, and light weighting.

Table 1 Performance Parameters of XP Cars

Item	Parameter
Energy density	152Wh/kg
Capacity	45kWh
Lifespan	80% decrease for charging and discharging 1000 times /o.3 million km
Accelerating ability (0-400 km)	7.9 Sec (Two-drive); 5.8 Sec (Four-drive)
Motor system power	15kW/L
Endurance mileage	300km
Intelligence level	Autopilot driving technology L2 (Automatic parking, remote call, low-speed track), full touch control (voice)
Other functions	Real-time high-accuracy (30cm) road condition and navigation, online music, voice interaction, 360 degree panoramic photography, HD photography inside and outside the vehicle, personalized setting of apparatus information.
Subsequent iteration	OTA upgrading

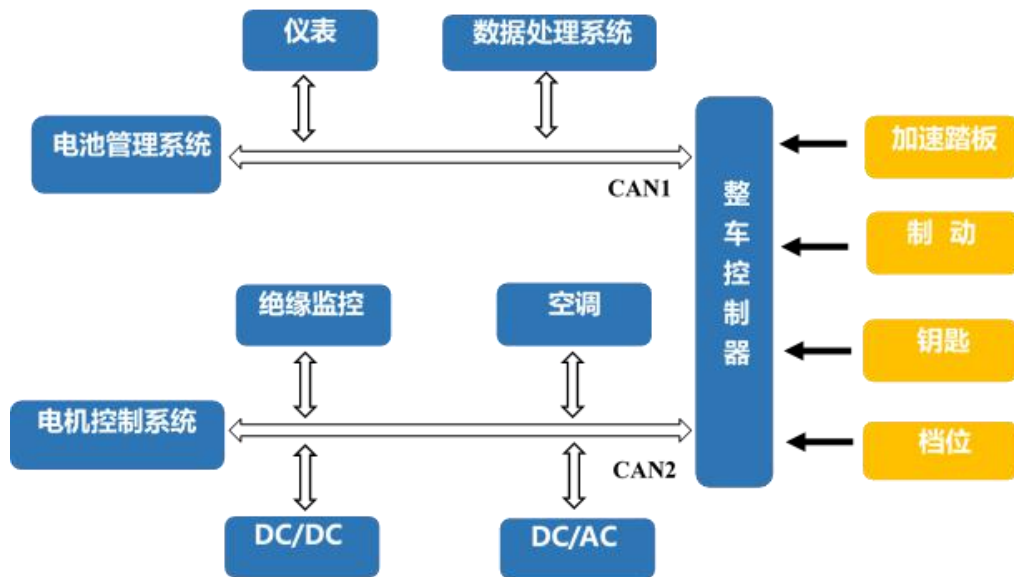


Figure 1. Sketch of XP Motor “Three Electrics” System

XP Motor Corporation acts boldly in car development. In the early stages of car styling, the company invited fans to participate in project alternative review, selection of opinions, and determination of final programs. In the development process, adhering to the iterative thinking that befits an internet company, XP iterated its hardware and software and continue to upgrade its product after being sold to customers with a modular design. The system can keep upgrading according to the driving habits of consumers and the practical driving conditions, which will become more intelligent in the process of interaction with consumers.

1.4 Production and Manufacture

In automotive manufacturing, XP adopts a two-step strategy with foundry followed by production. According to the relevant state policies and regulations, enterprises can only produce new energy vehicles when awarded production license based on their corresponding production ability. However, it usually takes more funds and two to three years for them to build factories. To maintain its leading position in the world of internet car manufacturing, XP Motor Corporation will work with manufacturing OEMs with rich manufacturing capabilities to produce OEM products and bring them to market as soon as possible so that they can win a certain reputation and recognition among users.

In the process of building factories, XP Motor Corporation has taken a solid initial step. Not long ago, XP signed an agreement with Z municipal government on investing in the construction of new energy vehicle production base in Z City. The

project intends to use 3,000 acres of land, with a total investment of about 60 billion yuan. The first stage of construction requires 600 acres of land and an investment of about 2.5 billion yuan and is expected to be put into operation in mid-2019 with the prospective production capacity of 100,000 cars/year; during the second stage, 1,000 acres and about 40 billion investment will be used, with an estimated production capacity of 150,000 vehicles/year; another reserve of 1,400 acres of land will be put into use for the long-term planning of smart car industry and ecological projects.

1.5 Marketing Ideas

Tesla's sales offices adopt Apple's "golden" retail standard, following Apple's retail strategy. XP currently plans to use a marketing program similar to Tesla's, opening product experience shops rather than offline 4S service shops to conduct specific sales through experiencing, test driving, online ordering, and product delivery in experience shops.

In after-sales maintenance, considering the limited funds, the company decided to cooperate with vehicle maintenance and repair service providers. For electric vehicles, its engine structure is simpler than the traditional fuel-car system and its failure rate is low, thus most of the faults can be eliminated through system upgrade iteration, without the monthly maintenance inevitably needed for fuel vehicles. Its maintenance is mainly related to the low-tech sheet metal and painting projects. Therefore, most of the car maintenance work will be covered by an XP experience shop + authorized service store system. An auto repair shop will be authorized as an XP repair store responsible for XP car sheet spray and other maintenance work once its professionals obtain certification from XP training courses. Of course, there is still a small part of car repair that involves replacing core components. XP Motor Corporation has provided two options for this: 1) drive the car to the nearest experience shop for parts replacement; or 2) drive the car to the nearest authorized repair store, where XP will send professional maintenance personnel to repair in the authorized repair store.

2. Policy Environment

2.1 Industry Development Planning

The State Council recently issued *The Thirteenth Five-Year Plan for the Strategic Emerging Industries Development of China*, providing a comprehensive plan for the development goals, key tasks, policies, and measures of China's emerging

strategic industries. This plan includes new energy vehicles during the 13th Five-Year Plan period, of which the new energy automotive industry has been included in the key development targets. It is mentioned in the document that efforts will be made to expand the application of new energy vehicles, strengthen technological innovation, improve the industrial chain, optimize the supporting environment, implement supportive policies, upgrade the industrialization of pure electric vehicles and plug-in hybrid vehicles, and promote the industrialization of fuel cell vehicles. By 2020, more than 2 million vehicles will be manufactured and sold per year and the total production and sales will exceed 5 million Yuan. The overall technical level will keep pace with that of the rest of the world and form a batch of internationally competitive NEVs and key components and parts companies.

The *Plan* also calls for promotion of several tasks: the “Internet +” action; the integrated development of new-generation information technology and various fields; the cultivation of “Internet +” ecosystem; the integrated application of the Internet in all fields of production; the further combination of technologies, including mobile internet, cloud computing and internet of materials with agriculture, energy, finance, commerce, logistics and express delivery; the exploration and integration of industrial software supporting network collaboration; and the high-end transformation of manufacturing to production services and production services to value chain. Driven by the above plans, more and more car companies have chosen to work hand-in-hand with the internet. In addition, internet companies and IT companies have also entered the automotive industry with strong advanced technology.

2.2 Industry Admittance Standard

Since 2014, the Ministry of Industry and Information Technology has unified the national catalog for new energy vehicles, and in principle it does not allow localities to have their own small-scale policies regarding enterprise access and industrial access. According to the *Regulations on the Admittance of New Energy Vehicle Manufacturing Enterprises and Products* officially promulgated on July 1, 2017 by the Ministry of Industry and Information Technology, in order to apply for the access requirements of new energy automobile manufacturers, it is necessary to have the design and development capability, production ability, product manufacturing consistency assurance capability, after-sales service, and product safety assurance capability; all of these are indispensable for the production of new energy automobile products and in line with the *New Energy Vehicle Manufacturers Access Requirements*.

According to the *Requirements*, there are 17 specific conditions for the review, of which eight are vetoed items. As long as more than two items are violated, the company will not be admitted. At present, among enterprises of internet car manufacturing, many adopt the model of developing and building factories abroad. If they want to enter the Chinese market and obtain qualifications, they must comply with the regulations on the administration of state investment.

By the end of June 2017, a total of 15 new car manufacturers have obtained the qualification certificates for new pure electric passenger cars: BAIC BJEV, Changjiang Motor, Qiantu Motor, Chery New Energy, Jiangsu Minan, Wanxiang Group, JMCG, Chongqing Jinkang, Guoneng New Energy, YUDO New Energy, Zhidou, Suda, Hezhong, GreenWheel, and JAC Volkswagen. Among these, there are eight traditional power OEMs, three auto parts manufacturers, one low-speed electric vehicle transformation enterprise, one vehicle design company, and one energy supplier. The new automobile production based on the Internet is still under exploration. However, obtaining the new pure electric passenger car production qualification is just the beginning. To conduct sales and obtain a car license, the company also needs to pass the assessment of *Regulations on the Admittance of New Energy Vehicle Manufacturing Enterprises and Products* and *Regulations on the Admittance of Passenger Vehicle Manufacturing Enterprises and Products* conducted by Ministry of Industry, and must have its products listed in *Vehicle Manufacturers and Product Announcements*.

2.3 Industry Subsidy Policy

In order to speed up demonstration and promotion of new energy vehicles, fully mobilize the enthusiasm of the vehicle manufacturers to participate in research and development, increase consumer acceptance of using new energy vehicles, and nurture industries and activate the market, the relevant state departments have promulgated a series of policy measures, including financial incentives (such as financial subsidies) and non-fiscal incentives (such as elimination of traffic restriction and purchase restriction for new energy vehicles). Early in 2009, China released the first subsidy policy on energy-saving and new energy vehicles to subsidize these vehicles in the public service. Since then, subsidy policies for the new energy vehicles have gone through several rounds of additional amendments, continuously adjusting its objects, scope, subsidy amounts, and regions.

In the future, subsidy standards for vehicles other than fuel cell vehicles will be

	$100 \leq R < 150$	$150 \leq R < 250$	$R \geq 250$	$R \geq 50$	
--	--------------------	--------------------	--------------	-------------	--

properly decelerated from 2017 to 2020, of which the subsidy standard for 2017-2018 will drop by 20% on the basis of 2016 and the maximum allowance for local government subsidies for bicycles will not exceed the upper limit financial bicycle subsidy amount of 50%; requirements on the battery quality energy density (specific energy) and 100 kilowatts power consumption Y (under curb weight and operating conditions) are increased. Among them, the subsidy standard for specific energy requires more than 90wh/kg, and there is a subsidy of 1.1 times if energy use exceeds 120wh/kg. Subsidy standards for 2019-2020 will drop by 40% on the basis of 2016, and new energy subsidies will be canceled in 2021.

Table 2 Subsidy Standard for New Energy Passenger Vehicle in 2017

Vehicle Type	Endurance Mileage of Pure Electrics R(mode-test, km)		Maximum Local Financial Subsidy for Each Vehicle (10 thousand yuan)		
	Pure electric passenger vehicle	2	3.6	4.4	/
Plug-in hybrid vehicle (including extended-mileage type)	/	/	/	2.4	

According to regulations, only vehicle models listed in *Recommended Model Directory for New Energy Vehicles* released by the Ministry of Industry can obtain state subsidies. New energy companies applying for the *Directory* should meet the technical requirements in *Notice on the Financial Support Policies for the Promotion and Application of New Energy Vehicles of 2016-2020*. The specific requirements are as follows.

Table 3. Endurance Mileage Requirement for Pure Electric New Energy Vehicles (unit: km)

Type	Passenger vehicle	Coach	Truck	Vehicle for specific use

	≥70 (isotachophoresis)			
Purely electric	≥100	≥150	≥80	≥80
Plug-in hybrid vehicle (including extended-mileage type)	≥50 (mode-test)	≥50	≥50	≥50
Fuel battery	≥150	≥150	≥200	≥200

Up to the current time, the Ministry of Industry and Information Technology has released four batches of recommended catalogs of new energy vehicles in 2017. A total of 1,473 models have been selected for the 2017 *Recommended Directory*. However, models that haven't been sold within a year after entering the directory will be canceled from the directory.

In addition, on March 20, 2017, the *Notice on Carrying Out the Liquidation of 2016 Funding for New Energy Vehicles* (the “expedited” document jointly issued by the Ministry of Finance, Ministry of Science and Technology, Ministry of Industry and Information Technology and Development and Reform Commission) proposed that for subsidies applied by non-individual users of new energy vehicles, the cumulative mileage must reach 30,000 km (except for vehicles with special operating purposes). New-energy vehicles that do not meet the mileage requirements of the current year should apply for grants after reaching this standard. Subsidy standards and technical requirements shall be implemented in accordance with the annual certificate for obtaining a driving license.

2.4 Industry Tax Preference

From September 1, 2014 to December 31, 2017, the state will exempt the purchase of new energy vehicles from the vehicle purchase tax. For new energy vehicles that are exempt from vehicle purchase tax, vehicles meeting the technical requirements shall enter the *Catalog of New Energy Vehicles Exempted from Vehicle Acquisition Tax* (hereinafter referred to as the *Catalog*) issued by the Ministry of Industry and Information Technology and the State Administration of Taxation. New energy vehicles listed in the *Catalog* must meet the following conditions

	≥70 (isotachophoresis)		
--	--------------------------	--	--

simultaneously:

First, pure electric vehicles, plug-in hybrid electric vehicles (including vehicles of extended-range), and fuel cell vehicles licensed to be sold in the PRC;

Second, the use of the battery does not include lead-acid batteries;

Third, the pure electric driving range must meet the requirements in the following table.

Table 4. Endurance Mileage Requirement for Pure Electric New Energy Vehicles (unit: km)

Type	Passenger vehicle	Coach	Truck	Vehicle for specific use
Purely electric	≥80	≥150	≥80	≥80
Plug-in hybrid vehicle (including extended-mileage type)	≥50 (mode-test)	≥50	≥50	≥50
Fuel battery	≥150	≥150	≥200	≥200

Fourth, the combined fuel consumption of plug-in hybrid passenger cars (fuel consumption excluding electric energy conversion) is less than 60% of the corresponding target value of the current national standard for conventional fuel consumption; the combined fuel consumption of plug-in hybrid business cars (fuel consumption excluding electric energy conversion) is less than 60% of the corresponding target value of the current national standard for conventional fuel consumption.

Fifth, vehicles must pass the special test for new energy vehicles and meet new energy vehicles standards.

The exemption from purchase tax concession will expire at the end of 2017. By 2018, vehicle purchase tax will be levied at the statutory rate of 10% on the recovery of passenger vehicles with displacement of 1.6 liters and below. For new energy vehicles, it still remains to be decided whether the announcement, implementations in accordance with the notice, or re-introduction of relevant preferential policies will be extended into next year.

In addition, the *Notice of the Ministry of Finance, the State Administration of Taxation and the Ministry of Industry and Information Technology on the Tax Policy of Saving Energy and Using New Energy Vehicles and Ships* (Financial Tax [2012] No. 19) stipulates that travel tax on vessels using new energy sources is exempted. The document explicitly states that new energy vehicles include pure electric vehicles, plug-in hybrid vehicles, and fuel cell vehicles. It also sets the standard that power batteries do not include lead-acid batteries and that the maximum power ratio of plug-in hybrid electric vehicles should be greater than 30%. *Notice on Preferential Policies for Energy-Saving and New Energy Vehicles and Ship Taxes* released by Ministry of Finance and State Administration of Taxation on May 7, 2015 pointed out that energy-saving passenger cars, commercial vehicles, and new energy vehicles meeting the above criteria will be recognized by the Ministry of Finance, the State Administration of Taxation, and the Ministry of Industry and Information Technology through the jointly-issued *Catalog of Energy-Saving Vehicles and New Energy Vehicles with Preferential Concessions for Tax*. Energy-saving and new energy vehicles can enjoy the tax exemption policies after the publication of the *Catalog*, according to the *Catalog* and other relevant regulations on preferential policies for tax incentives.

2.5 Industry Technology Policy

With the rapid increase in the number of new energy vehicles popularized in China in recent years, some of the power batteries have begun to enter the expiry phase. The government attaches great importance to power battery recycling and has begun to study and formulate relevant policies and standards. Recently, China released the *Technical Policy on Recovery and Utilization of Power Battery for Electric Vehicles (2015 Edition)* in 2016, which explicitly adopted the extension of producer responsibility system. Electric vehicle manufacturers bear the primary responsibility for the recovery and utilization of discarded batteries for electric vehicles. The power battery manufacturers assume the main responsibility for the recycling of spent power batteries. Enterprises of cascading use of battery production undertake responsibility for recycling cascade-used batteries, and scrapped car recycling dismantling enterprises should be responsible for recycling scrapped vehicle power batteries.

In January 2017, the General Office of the State Council promulgated the *Proposal on the System of Producer Responsibility Extension*, and proposed the establishment of a system for the recovery and utilization of electric vehicle battery

power in the field of new energy vehicles so as to ensure the recycling and safe disposal of used batteries, promote green manufacture, and protect the ecological environment.

In addition, some major cities also introduced several local car battery recycling policies. For example, in 2014, the Shanghai Municipality promulgated the *Interim Measures of Shanghai Municipality on Encouraging the Purchase and Use of New Energy Vehicles*, requiring the car companies to recycle power batteries, with a reward of 1,000 yuan/set and a subsidy of 1000 yuan/set from the government. In 2015, the Shenzhen Municipality promulgated the *Notice on Printing and Issuing Some Policy and Measures for the Promotion and Application of New-energy Vehicles in Shenzhen*, indicating a demand to formulate a policy for the recovery and utilization of power batteries. The vehicle manufacturer shall be responsible for compulsory recovery of the power batteries of new energy vehicles and shall apply for a power battery recycling disposal subsidy with 20 yuan per kWh. The local finance department will undertake 50% of the audited amount of funds so as to establish and improve the system of recycling of used batteries.

2.6 Industry Sales Management

In early April 2017, the Ministry of Commerce released the *Measures for the Administration of Automobile Sales* (hereinafter referred to as the new *Measures*) and announced that it will be formally implemented on July 1st of 2017. After the implementation of the new *Measures*, the automobile circulation industry will usher in a “three multi-” model: suppliers sell cars in multiple channels; distributors sell multiple bands of cars; and consumers can buy cars and enjoy services through multiple channels. The implementation of the new *Measures* not only broke the traditional sales model of 4S with brand authorization as the core, but also achieved new breakthroughs in aspects such as the monopoly of sales of auto parts and the like, provided guarantees for the parallel circulation of automobiles in various modes, and opened an era of automobile circulation while diversifying competition in aftermarket.

2.7 Auxiliary Facilities

In order to further promote the popularization and application of new energy vehicles, China is increasing its investment in charging equipment in several pilot cities and accelerating the construction of battery charging infrastructure. State Grid, China Southern Power Grid, Sinopec, CNOOC, and PetroChina have entered the charging station market, together with some direct charging equipment companies

such as Cologne Electronics, BYD, Xu Ji Electric, Aotexun, Taitan (Zhuhai), Yulin (Yantai), and Kstar. Charging stations are composed of direct charging equipment, power distribution equipment, and management ancillary equipment. Investment in general-scale charging stations is about 3 million to 600 million yuan. Direct charging equipment is the core of the charging station, which generally accounts for about 50% of the charging station cost. With the improvement of the battery life, the charging period of the charging station will be shortened, which will help speed up the charging infrastructure construction.

According to the statistics of the National Energy Administration, the number of public charging posts nationwide increased from less than 50,000 to 150,000 in 2016, while that of private charging posts exceeded 80%. In 2017, China plans to add 800,000 charging posts and subsidies and the direction will be tilted from the car subsidies to the charging subsidy. In *Direction for Electric Vehicle Charging Infrastructure Development 2015-2020*, a document formulated by the National Development and Reform Commission, and *Construction Blueprint for Electric Vehicle Charging Infrastructure*, issued by the National Energy Administration, it's pointed out that by 2020 the number of refueling stations will reach 12,000, and that there will be 4.5 million charging piles and 100 billion construction spaces for charging facilities. Pile ratio will reach 1:1, fundamentally eliminating worries about the lack of infrastructure and improving consumers' consumption willingness.

3. Key Technologies of Internet Car

The Internet car is an integrated innovation. That is, all elements will be creatively integrated to complement each other so that the overall innovation of the system functions undergo a qualitative change, forming a unique ability in innovation and competitive advantages. Instead of simply adding elements of the Internet to traditional cars, it fundamentally changes the concept of the car and reimagines the car based on Internet-thinking. At present, the rapid development of information technology and internet technology has provided a broader space for integrated innovation and paved the way for its commercialization.

The key technologies of the Internet car mainly include the following:

3.1 Autopilot

The following table shows the standards for automatic driving classification in the automotive industry.

Table 5. Autopilot Grading¹

自动驾驶分级		称呼 (SAE)	SAE定义	主体			
NHTSA	SAE			驾驶操作	周边监控	支援	系统作用域
0	0	无自动化	由人类驾驶者全权操作汽车，在行驶过程中可以得到警告和保护系统的辅助。	人类驾驶者	人类驾驶者	人类驾驶者	无
1	1	驾驶支援	通过驾驶环境对方向盘和加减速中的一项操作提供驾驶支援，其他的驾驶动作都由人类驾驶员进行操作。	人类驾驶者系统			系统
2	2	部分自动化	通过驾驶环境对方向盘和加减速中的多项操作提供驾驶支援，其他的驾驶动作都由人类驾驶员进行操作。	系统	系统	系统	
3	3	有条件自动化	由无人驾驶系统完成所有的驾驶操作。根据系统请求，人类驾驶者提供适当的应答。				系统
4	4	高度自动化	由无人驾驶系统完成所有的驾驶操作。根据系统请求，人类驾驶者不一定需要对所有的系统请求作出应答，限定道路和环境条件等。	系统	系统	系统	
	5	完全自动化	由无人驾驶系统完成所有的驾驶操作。人类驾驶者在可能的情况下接管，在所有的道路和环境条件下驾驶。				系统

The autopilot level of present mass produced autopilot vehicles on the market is about L2, which is not enough for automatic drive. But these cars can provide driving support to steering wheels and operations in speed adjustment through driving the environment, namely through partial automation. However, the hardware required for autopilot technology, such as sensors and cameras, has been able to complete L5-level autopilot. It is expected that the autopilot level of the Internet car will be completed in three to five years, eventually reaching the software and hardware match and meeting fully autopilot requirements. Technologies that affect the level of autopilot technically mainly include:

(1) Positioning and navigation

Satellite positioning and navigation are the foundations for planning and controlling autonomous driving routes. At present, GPS-oriented global positioning and navigation technology is relatively mature. For example, high-precision GPS can provide centimeter-level positioning services for automatic driving, calculate the ground speed and heading angle information through coordinate positions, and provide a technical basis for interaction between automatic driving and a complicated navigation environment.

(2) Driving assistance technology

¹ Material source: document of American Society of Automotive Engineers

Driving assistance technology mainly refers to active safety technology that can improve driving safety through conducting identification, detection, and tracking of static and dynamic objects based on immediate environmental data both inside and outside the vehicle collected by on-board sensors, such as ADAS technology. At present, the application of ADAS technology can effectively assist motorists in driving safely and reduce the probability of accidents. However, the auxiliary driving technology is still in the L2 stage of only the vehicle level and can be used to control the steering wheel and multiple operations of acceleration and deceleration through the driving environment; for the high-level driverless stage, communication between vehicles still needs to be further realized.

(3) Processor and operating system

High-performance processors and operating systems are key to future automotive companies gaining a competitive edge in the marketplace. On the processor side, autonomous vehicles require sophisticated visual engines, powerful image processors, and central processing units. NVIDIA released TegraK1, the latest mobile processor for mobile phones, tablets, and autonomous vehicles, and offered programming tools to help automakers develop a wide range of applications. In addition, Google is building an Android-based system and has co-founded the “Open Automotive Alliance” with a number of car makers and NVIDIA companies; Apple is also developing a car-based IOS system.

3.2 New Energy

(1) Battery technology

Currently the most widely used battery uses lithium iron phosphate battery technology. Lead-acid batteries, which have been widely used in the past, have advantages such as relatively mature technology, high-volume production, low production cost, strong exchangeability, and low price. However, the disadvantages of this battery are also obvious—it is heavy and has a short battery life. The emergence of the lithium iron phosphate battery overcomes its shortcomings. Because it does not contain any precious metals and, because global reserves of lithium carbonate, its main raw material for the production of iron oxide cathode material, are relatively rich, using this battery can effectively reduce manufacturing costs. In recent years, the emergence of American new energy vehicles produced by Tesla have attracted greater public attention to three-cell lithium battery technology than to the lithium iron

phosphate battery. Longer battery life is one of the characteristics of the three-cell lithium battery, with the current new energy vehicles installed with three-cell lithium battery technology reaching a mileage of more than 200 kilometers. The safety problem of three-cell lithium batteries has been solved. Three-cell lithium batteries currently adopt a 1: 1: 1 structure, which is safer and more stable. Table 6 presents the major domestic battery manufacturers and their counterparts of vehicle business.

In order to support the development of new energy vehicles, continuous improvement of battery cell energy density and reduction of the unit cost are very important. For battery cell energy density, single cell energy density of power battery in pure electric vehicles aims to reach 500Wh/kg in 2030, and single cell energy density of power batteries in plug-in hybrid vehicles aims at 300Wh/kg by 2030. When it comes to cost, the battery cost for pure electric vehicles aims at 0.8 yuan/Wh by 2030, and the cost for plug-in hybrid vehicles aims at 1.1 yuan/Wh by 2030. The development target values of the monomer energy density and the cost of the battery system, as well as the development route of the pure electric vehicle battery technology, which are shown in Table 7.

Table 6. Major Domestic Battery Factories and Auxiliary Vehicle Enterprises

Battery Enterprise	Battery Type	Auxiliary Vehicle Enterprises	Battery Enterprise	Battery Type	Auxiliary Vehicle Enterprises
CITIC GUOAN MGL	Lithium manganate	Jinlong, NAC, Zhongtong, FOTON, SUNWIN, Ankai, Changlong, Tianlu	Amperex Technology	Lithium iron phosphate	WZLmotors
Phylion Battery (Suzhou)	Lithium manganate, lithium iron phosphate	SUNWIN, FAW, SAIC, Chang'an, CHERY	Hai'aotong (Henan)	Lithium iron phosphate	Jiangnan (Hunan)

Wanxiang EV	Lithium iron phosphate	Jiangling, Nissan (Zhengzhou), Jiangnan (Hunan), Ankai, SUNWIN, Haima, CHERY	Gaomi Lithium Electric (Zhuhai)	Lithium iron phosphate	Guangtong Motor
BYD	Lithium iron cobalt phosphate	BYD	Chunlan Group	Ni-MH	SG Auto, Dongfeng, Nanche Shidai, FAW
An'naixin Energy Storage	Lithium iron phosphate	Jinlong, JAC, Changlong, Ankai	Forever Battery	Ni-MH	Chang'an
PULead Technology	Lithium iron phosphate	Futian, Tianlu	Shenzhou (Hunan)	Ni-MH	Dongfeng, Chang'an
Weilike Energy (Xianyang)	Lithium iron phosphate	SUNWIN, Guangzhou Automobile, Hengtong (Chongqing)	COBASYS	Ni-MH	General Motors (Shanghai)
Tiankong Energy (Luoyang)	Lithium iron phosphate	Guangtong Automobile, Dongfeng, Jiangnan (Hunan)	BESK	Three-cell lithium	BAIC
HZCENS Technology	Lithium iron phosphate	SUNWIN	BERTIE (Hefei)	Three-cell lithium	JAC

In the utilization of resources, power lithium batteries still have the problem of having an incomplete recovery system and low recovery value. Although large-scale recycling enterprises such as Greenmead and Hunan Bangpu have emerged in China

at present, there is a problem of high recycling cost and recycling industrial chain in power lithium battery recycling.

Table 7. Monomer Energy Density Development Targets and Battery System Cost Development Targets for Each Year

Monomer Energy Density Development Targets (Wh/kg)			
Year	2020	2025	2030
BEV	350	400	500
PHEV	200	250	300
Battery System Cost Development Targets (元/Wh)			
Year	2020	2025	2030
BEV	1	0.9	0.8
PHEV	1.5	1.3	1.1

(2) Motor technology

In the field of new energy vehicles, a permanent magnet synchronous motor is widely used. Compared with other types of motors, the greatest advantages of the permanent magnet synchronous motor are its high power density and torque density. That is, under the same mass and volume, the permanent magnet synchronous motor can provide maximum energy output for new energy vehicles and acceleration. Therefore, for new energy industry, which has high requirements about space and weight, the permanent magnet synchronous motor is the first choice for the majority of car manufacturers.

In addition to permanent magnet synchronous motors, asynchronous motors are also attracting people's attention because of the emergence of Tesla. The advantages of the asynchronous motor are low cost and simple process; the disadvantage is that the power density and torque density are lower than the permanent magnet synchronous motor. In addition, the hub motor is also a hot spot for new energy

automotive motor applications. Compared with the traditional power plant, the hub motor saves a lot of transmission components and the vehicle structure is relatively simple; of course, there are still many problems that the hub motor still needs to solve in terms of synchronous control of the motor and watertight seal.

(3) Electronic control technology

The design and calibration of the electronic control system are highly related to the motor system. Based on different matching motors, the electronic control system needs to develop different technology platforms. With the extensive use of induction motors and permanent magnet motors, vector control technology and direct torque control technology have become the mainstream technology of electric control products. The popularization of electric passenger cars demands higher requirements on the integration of electric motors and electric control systems. It is foreseeable that in the future the cross business degree of motor and electronic control will gradually increase. Enterprises that can provide motor-driven integrated powertrain products will help vehicle companies to further reduce vehicle weight and cost and help increase competitiveness.

3.3 Information security

While connecting the Internet to vehicles, car networking also brought the issue of information security. In application, each vehicle and its owner's information will be connected to the network anytime and anywhere. When exposed in public, the signal could easily be stolen, interfered with, or even modified, which directly affects the security of the car network system. Therefore, information security design is particularly important in car networking.

4. Industry Status

4.1 Market Development

In the car market of China in 2016, car ownership reached 194 million. The production and sales volume of automobiles in China surpassed 28 million. The total car output and total sales volume increased by 14.50% and 13.95% respectively over the previous year.



Figure 2. Sales Change of China Automobile²

Among these, the production of new energy vehicles reached 517,000Yuan, an increase of 51.7% over the same period last year; the sales amount was 507,000Yuan, an increase of 53.13% over the same period last year.

2017 is the year when many Internet cars have been on the upswing. Hundreds of billions of capital flowed into the industry. Various Internet car makers pledge financing, research, and development, and are planning to enter volume production in 2017. According to the estimation of the China Association of Automobile Manufacturers, the total sales volume of new energy vehicles in China will reach 750,000 Yuan in 2017.

² Material source: Wind Database

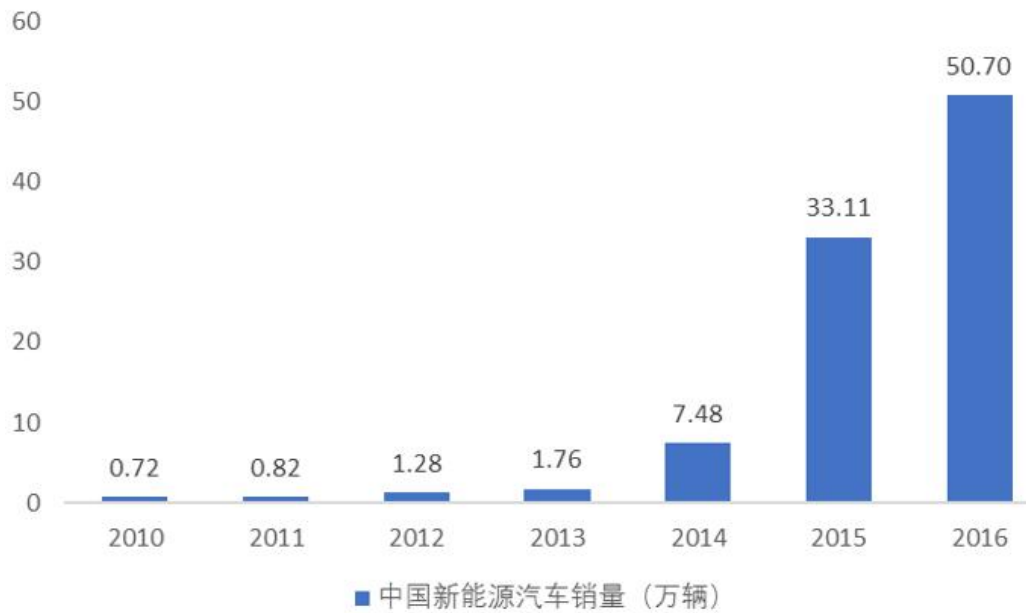


Figure 3. Sales Change of China New Energy Vehicles³

4.2 Industry Value Chain

The value chain of the automotive industry is quite long, including R&D, manufacturing, sales, and aftermarket. The aftermarket segment can also be divided into maintenance, auto finance, leasing, and insurance. The current automobile manufacturers rely more on division of labor models, with their own commitment to vehicle development and assembly, control of key technologies, and even vehicle marketing. They purchase ordinary parts from the upstream auto parts manufacturers.

4.2.1 Research and Development

Technology R&D and application is one of Internet cars' core strengths. It is the key to winning the market. From the value chain point of view, the vital aspect determining the degree of differentiation of automotive products is the development and product design. As an innovative and pioneering enterprise, internet auto companies invested heavily in product development in the early stage, including high-energy density battery pack assembly technology, the development of pure electric drive systems with electric motors and electric control at their core, and an intelligent system. The initial investment is huge, accompanied by a certain amount of risk pressure, but the successful development of the formation of intellectual property advantages can bring greater added value.

Motor and electric control systems determine the main performance indicators of

³ Material source: China Automotive Industry Association

vehicle operation and are the focus of Internet car development. New energy technologies carried by Internet cars have certain requirements for drive motors: small size and light weight to meet optimal design; high efficiency over the entire operating range for a reasonable choice of thermal management design and cooling methods; low speed and high torque; wide range of constant power; high reliability and safety; and relatively low cost. At present, the domestic automotive drive motor system has reached the level of small batch production. Permanent magnet motors with high safety, small installation space, and low energy requirements have become the first priorities for new energy vehicles.

At the same time, the development of internet products is different from that of traditional software. Its high demand for iteration determines the added value of Internet cars to a certain extent; constant iteration also determines the need for constant research and development. Faced with a large user groups, the demand for internet products cannot be clarified within months of user research, market research, and product planning, not to mention that the internet user community itself is also in rapid dynamic development. In this case, certainly not every product launch will be perfect. In order to quickly conform the product to the needs of users, continuous upgrading, evolution, innovation, and research and development is the only way to stay ahead. Therefore, for the emerging Internet car business, quick upgrading, continued collection of user feedback, and constant adjustment to changes are the basic requirements. Companies should seek to understand their customers' minds through rapid iteration. During iteration, they should pay attention to users' high frequency use, strong perception function, and performance at the software level; at the hardware level, the modular design is made for users to update and replace components by including providing online services, continuously tracking product and user experience, and helping to continually improve the product.

4.2.2 Manufacture

The manufacturing process consists of auto parts production and vehicle production. Some NEVs choose to outsource purchased components over their own R&D components; others choose to integrate the industrial chain to cover the production of parts and complete vehicles such as BYD. For the Internet car companies that belong to innovative start-up enterprises, their manpower, material, and financial resources are limited during the start-up period, and their R&D mainly focuses on complete vehicles so they choose auto parts production. For Internet car

companies, the power battery is the main outsourcing part. Internet car companies outsource battery packs and assemble battery packs by themselves, producing Internet cars based on the technologies developed. In addition, at present some of the Internet car companies choose the mode of heavy assets, reach strategic cooperation with the regional governments, and set up their own factories and put them into production; another segment of Internet car companies choose to transit from light assets to heavy assets. They adopt entrusting manufacturing at the previous stage to promote the product listing process and realize factory construction and sales growth.

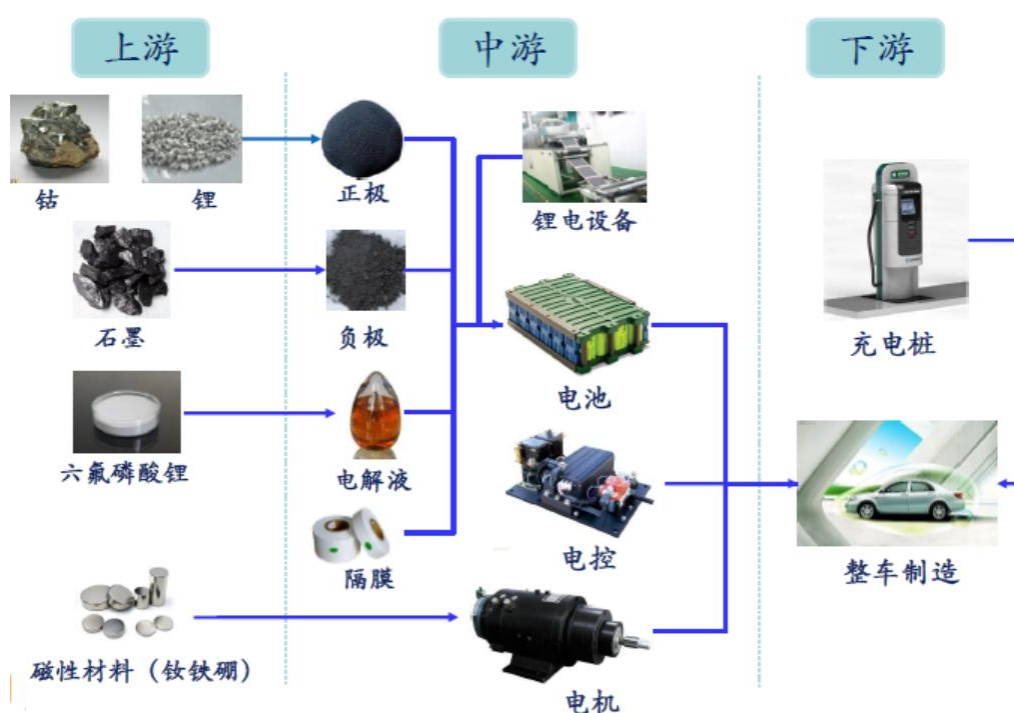


Figure 4. Industrial Chain of Automobile Manufacture

4.2.3 Sales

In sales, traditional car companies usually adopt the +4S shop model, and currently the new energy vehicles also use the dealer mode. But they have gradually begun to transition. For example, BAIC BJEV New Energy gradually transformed from a traditional dealer model to a model of “offline experience and online sales”; and BYD is establishing dealer channels. There are also some new energy vehicles using a direct sales model, such as the new energy smart car created by Tesla, whose direct sales model is: model understanding, intention to buy → experience in store, booking test drive → official website reservation, payment of deposit → factory

orders, custom production → final payment, delivery of vehicles. The development of the Internet car sales model is based on the new energy vehicle sales model, placing greater emphasis on communication with customers.

4.2.4 Aftermarket

Due to intensified competition in the automobile market, a considerable portion of profit margin has shifted to the aftermarket. With the continuous increase in car ownership in our country, as well as the aging of cars and changes in consumer habits, the aftermarket automobile market in our country shows a more rapid growth trend. According to the data from the China Association of Automobile Dealers, the profit of 60% of the industrial chain will come from the automobile aftermarket, and the profit in the automobile aftermarket will be three-fold the profit from vehicle sales. It has become the "big cake" in the automobile market after vehicle sales. The size of China's automobile market is expected to exceed 1 trillion yuan in 2017. From 2015 to 2020, China's automobile market will maintain its growth rate of 10-15%. It is estimated that it will reach 1.435 trillion yuan by 2020, and its domestic market size will overtake the United States in the future.

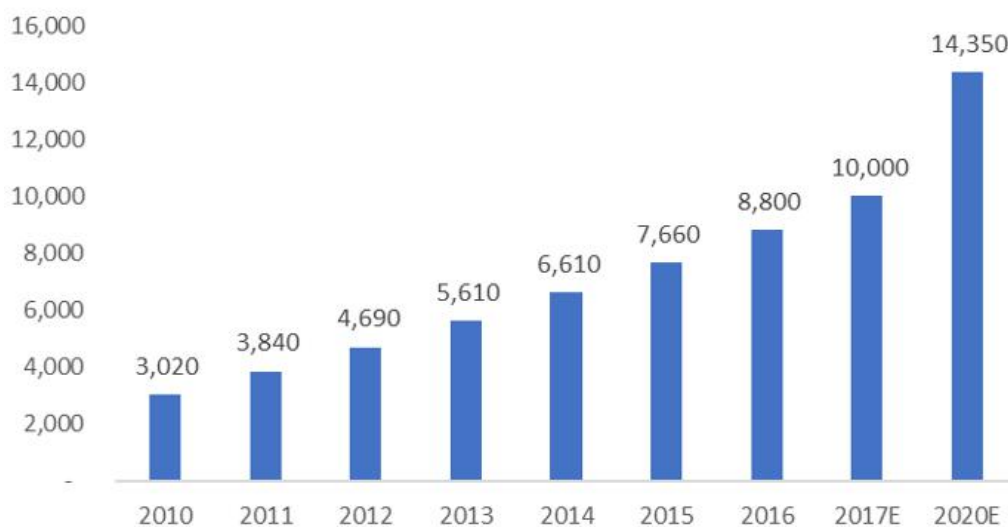


Figure 5. China Automotive Aftermarket Scale (a hundred million)⁴

Aftermarket includes maintenance, auto finance, leasing, insurance, and other specific procedures.

(1) Maintenance

With the increase of automobile ownership in our country and the gradual

⁴ Material source: China Investment Consulting

recognition of the concept of “maintenance rather than repairing,” the automobile maintenance and repair market in China is expected to develop into a trillion-yuan level. According to the 2017-2021 *Investment Analysis and Forecast Report of China's Auto Maintenance Industry* released by advisers of China Investment Corporation, the output value of China's repair industry is expected to exceed 1 trillion yuan by 2020.

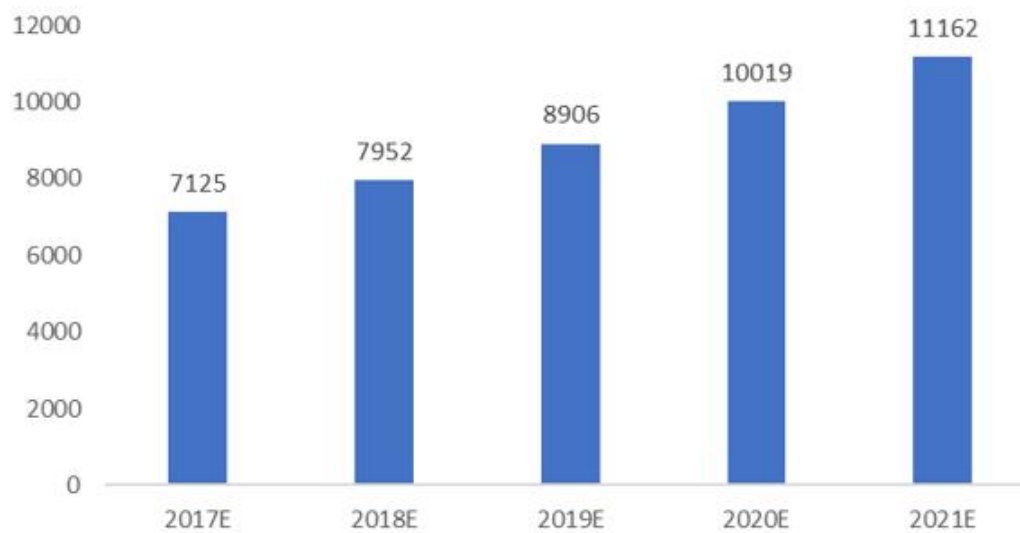


Figure 6. Output Value Forecast in Automotive Maintenance Industry 2017-2021 (a hundred million)⁵

At present, in China's vehicle maintenance market, service providers can be divided into two types. One is a 4S shop with a large scale and complete services, and the other is convenient small-and-medium-sized car service store. Due to the low failure rate of electric vehicles and the low rate of maintenance and repair, the current electric vehicle maintenance system of 4S shops is not complete. For small-and-medium-sized car service providers, the high cost in customer acquisition and low conversion rate of old customers is its weakest part. Tesla currently adopts experience shop construction plus authorized service point system so as to achieve a wide range of low-cost after-sales coverage. The electric structure of the electric vehicle is simpler than the traditional fuel system and its failure rate is lower. Most of the faults can also be eliminated through system upgrade iteration, so the maintenance needed for gasoline vehicles will not be overly involved in the maintenance of electric vehicles. These mainly involve the maintenance of sheet metal and exterior paint. Therefore, most of the car repair work can be done by outsourcing authorized service

⁵ Material source: Consultants of China Investment Corporation

stores.

(2) Auto finance

In the international market, auto financing accounts for about 5-15% of the total revenue of the automotive industry, with profits accounting for 20% and penetration of 80%. However, according to the China Banking Association's *2015 Annual Report on the Development of China's Auto Finance Companies*, the current penetration rate of auto finance is only about 20%. The auto finance revenue accounts for 6% of the total revenue of the industry, much lower than that of developed countries, forming a mismatch with the rapid growth of car sales. The *2016 China Auto Finance Company Industry Development Report* released by the Central Bank shows that in 2016 China's auto finance market has exceeded 700 billion yuan and the market is still expanding at a rate of 25% annually. With the improvement of the supply and demand segment and the development of the generations of the 80s and 90s who have strong acceptance of fashion consumption ideas as the major consumers, the report predicts that in 2020 China's auto finance penetration rate will reach 40%. The China Association of Automobile Manufacturers predicts that in 2025, China's auto finance industry will have a market cap of RMB525 billion.

At present, there are mainly four kinds of automobile financial service modes in our country: automobile consumption mortgage loan constructed by commercial banks and insurance companies; installment service mode constructed directly by automobile manufacturers; automobile leasing service mode interfered with by car rental companies; and financial services model constructed by other institutions of multiple cooperation. From the age structure of car consumers, young people under the age of 30 have a sense of advance consumption and favor installments. Despite their considerable income prospects, young people in this age group, who are limited by current income, may find it difficult to keep up with the down payment needed to obtain consumer credit, and it may make it difficult to meet consumer demand among those with consumer credit. In the financial leasing model, without a high down payment, users can just pay the rent on an equal basis to obtain the right to use the car and will ultimately obtain ownership of the car. This directly addresses the car-buying needs of newly-employed young people, hence boosting car sales.

3. Leasing

China's car rental companies are still in the primary stage of the quite fragmented

industry. Consumers are still in a highly price-sensitive period with relatively weak brand awareness. But there remains great potential for development. According to the *2016-2021 Consultation Report on Market Analysis and Investment Prospects of China's Automobile Leasing Industry* released by the Research Institute of Commercial Industries, it is estimated that by 2020, the market scale of China's automobile rental industry will reach 80 billion yuan.

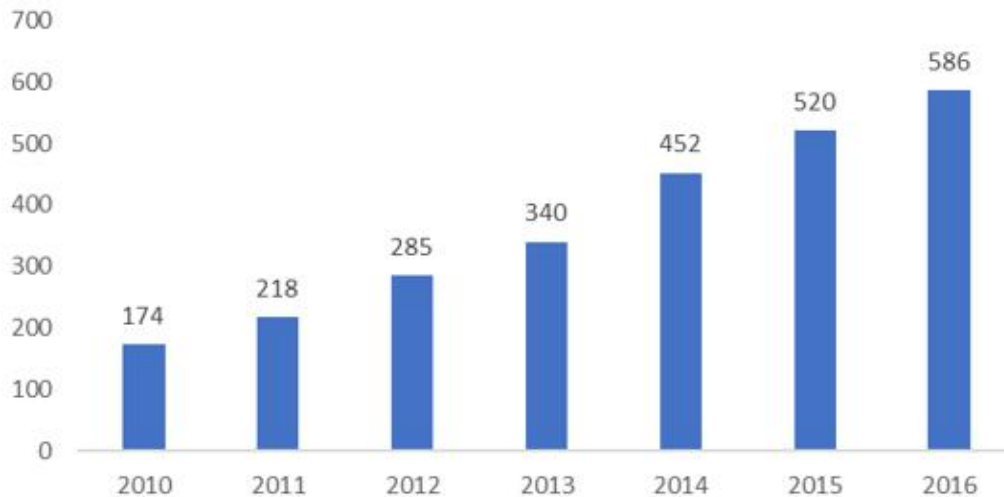


Figure 7. China Automotive Leasing Scale (a hundred million)⁶

At present, China has formed a dozen large-scale car rental companies, such as China Auto Rental and eHi Auto Services. However, the overall market share is still relatively low compared to the mature market. As there remains a huge space for car rental market development, some car manufacturers also choose to set up their own rental companies providing car rental services.

(4) Insurance

With the full implementation of auto insurance fee reform in the country in June 2016, the insurance field in the aftermarket has developed rapidly. Currently, the proportion of Chinese families owning a car is 28.3%, and the size of the motorized escapement market is about 2.5 billion yuan. With reference to the proportion and law of escape vehicles of America, the size of the escape vehicle market in China will reach 15 billion yuan in 2020.

4.2.5 Buyback

⁶ Material source: Rolandberger Consulting Co., Ltd.

According to the eight-year and 120,000 km warranty standard of new energy vehicles, the first batch of new energy vehicles will soon enter the payback period. In general, the lifespan of a new energy car battery lasts for eight years. In contrast, the life of traditional fuel cars is about 15 years, nearly twice the life of new energy vehicles. After five years of use of traditional fuel trucks, the salvage value is about 60%. After one year of use of new energy vehicles, however, the residual rate is only 40%. Low residual value rate mainly results from two aspects. One is derived from the impact of power batteries. China's mainstream new energy vehicles are powered by the form of electricity. The power battery cost in most of the pure electric vehicles accounts for 40% to 50% of the entire vehicle cost. Since the power battery itself is easily susceptible to wear and tear, after several times of charging and discharge, its capacity will gradually decrease and the driving mileage will be reduced accordingly, resulting in lower value for second-hand new energy vehicles. Second, new energy vehicles are under the influence of high renewal frequency. They are developed on the basis of the technology of traditional fuel trucks. The pace of updating technology will be faster than that of conventional fuel truck. Cars purchased this year will significantly lag behind new models that use the same type of vehicle technology.

New energy vehicle buyback is mainly used for battery recycling. A power battery with a capacity less than 80% can be used as a power carrier of other fields to increase its residual value. For example, it can be used as power-storage-peaking power station, household storage power station, or enterprise storage power station for low-speed electric vehicles and electric bicycle enterprises; waste plastics, battery boxes, and packaging should be recycled as much as possible. The use of power battery cascades should make low cost the primary consideration, otherwise it will fall into the pursuit of technical indicators and ignore the plight of commercial value, leading to operational difficulties in cascade utilization. The use of power batteries for energy storage stations in areas such as communications base stations needs to be ensured in terms of safety and stability. Price differs a lot between the wave peak and wave trough in industrial electricity. If electricity can be stored at night and used during the daytime, the pressure on the grid can be relieved and the general cost of electricity will also be reduced.



Figure 8. Target Market for Cascade Utilization of Battery Pack

Another way to utilize waste batteries is to dismantle and recycle them directly as scraps, refining various useful elements or raw materials therein to realize the recycling of raw materials. At present, the recycling rate of raw materials has reached more than 70%, and lead-acid battery recovery has even reached 95%. Currently, the comprehensive utilization of waste batteries in our country is technically not a problem. What remains to be done is to control cost, explore business models, and find suitable market to produce good economic benefits and maximize the value of mining power batteries. The Beijing-Tianjin-Hebei region has been planning the construction of companies of comprehensive utilization of used batteries, exploring the comprehensive use of a power battery together with BAIC BJEV, Tianjin Lishen, and other enterprises.

5. How to Sell the First Car?

Although XP Motor Corporation has been at the forefront in Internet and new energy vehicles in the early product development, with the upcoming target of small batch cars, the company managers are now facing greater challenges. Whether from product demand or product supply, the future market will be full of fierce competition. For example, new energy vehicles are often criticized by consumers for the following three issues. First, even if we add the national new energy subsidies, new energy vehicles usually cost 50 to 60 thousand yuan more than fuel vehicles of the same type

because of the high cost of power batteries at this stage. Second, the current mileage of new energy vehicles is limited, each charge is allowed to run mostly 200-300 kms. The maximum can reach 400 km, but it still does not meet the long-distance travel needs of consumers. Third, charging piles are hard to find, which makes car charging even more burdensome. In addition, judging from the production capacity plans of 15 newly-qualified enterprises for newly-built pure-electric passenger car manufacturing, the total production capacity has reached 1.17 million, accounting for 58% of China's 2 million new energy vehicles in 2020 predicted in the *Medium and Long-term Development Plan for Automobile Industry*. They will also face product jockeying from both joint venture automakers in China and mature brand automakers of new energy vehicles.

Every emerging car brand is facing the dilemma of lacking brand power and customers' understanding of the vehicle models. To win over so many brands, XP Motor should learn from Qoros to avoid the same mistakes. Established in 2007, Qoros has a production base with the production capacity of 150,000 vehicles. Unlike most newly-founded brands, Qoros has positioned itself as an international big brand from its establishment, placing profit at the top of its list. The first Qoros SUV, the Qoros 3 Urban, appeared on the market in December 2014 with the price range of 139,900 to 17,900 yuan. However, the creation of a top brand needs to be accomplished through years of accumulation. When the consumer has a low awareness of the brand, the price of the product is a key issue that consumers will consider.

Under this positioning, in December 2014, the sales volume of the Qoros 3 Urban SUV was 181; in 2015, the total sales volume was 7,617; and in 2016, the cumulative sales were 5,079. From January to April in 2017, however, sales were only 412 units. Under the currently hot automotive market in China, the sales volume of Qoros in the recent three years decreased even more than the monthly sales of some hot models.

Using the experience of Qoros 3SUV, XP Motor Corporation should carefully plan their market positioning and develop appropriate sales promotion programs and product pricing strategies so as to solve their sales problems and develop a sustainable profit model.

Based on the above information, Ma Li hopes to complete the following tasks in a qualitative and quantitative manner in a later report:

- 1) Explore appropriate product pricing strategies based on the target consumer decision-making perspective;
- 2) Analyze and compare different possible sales patterns and their financial implications;
- 3) Analyze and compare the different possible product strategies and their financial implications;
- 4) Choose the most suitable profit model and forecast XP Corporation's revenue and earnings for the next 5 years.

Ma Li really hopes that relevant historical financial data of the company such as complete production costs can be made available to support his analysis. Unfortunately, there are no reliable historical data of XP for him to rely on. He must learn from data of the listed car enterprises in other domestic and foreign capital markets—especially data of comparable enterprises—and analyze the data based on his own judgments of the industry and the future development of the enterprise. Although the accuracy and reliability of the data cannot be guaranteed, the reasonableness of the data and the logical consistency are what need to be focused on. Ma Li understands that his difficult and exciting journey as a management accountant is about to begin.