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The search of economies of scale by mergers and acquisitions in the Automobile industry

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Chapter 1 —— The Development of The Automobile Industry

We all know that the industrial revolution promotes the steps of advance of human beings. Actually, the source of revolution is a translation from feet to machine. Whatever is steamship, the earliest airplanes, steam trains, and even the original carriage, horse or something stuff like animals, they have changed the style of living of resident. But this is the angle of micro, these changes have given the positive effects to the social economic and production development simultaneously in the filed of macro.

In the terms of innovations of these transport products, we know in the air there have airplanes, which invented by Orville Wright in 1903, making the dream of fighting in the sky come true. In the vast ocean, due to the contribution of Robert Fulton in 1807, the adventurer and businesses can conquer the surging wave with the help of their loyal "sailor" - the steamship. As same as the steamship with billowing smoking in the land, Richard Trevithick invented the steam train and let the railway crisscross, extremely reducing the length between you and me since 1802.

These innovations do make the huge contribution to human civilization. But this time, we focus on another relatively small stuff-the automobile.

Since the ancient time, people are familiar with using animals working as the power of driving. We jump over the carriage history, till the 1886, Carl Benz created the first automobile in Germany[**Fig1.1]**.

[**Fig1.1**] **The first Automotive**

It looks like a three-wheeled wheelchair, with a single-cylinder engine, and the extreme speed is poorly 15km/h. However, that is the milestone of new century and shows a brand-new transport style.

1.1 The evolution of Automobile[1]

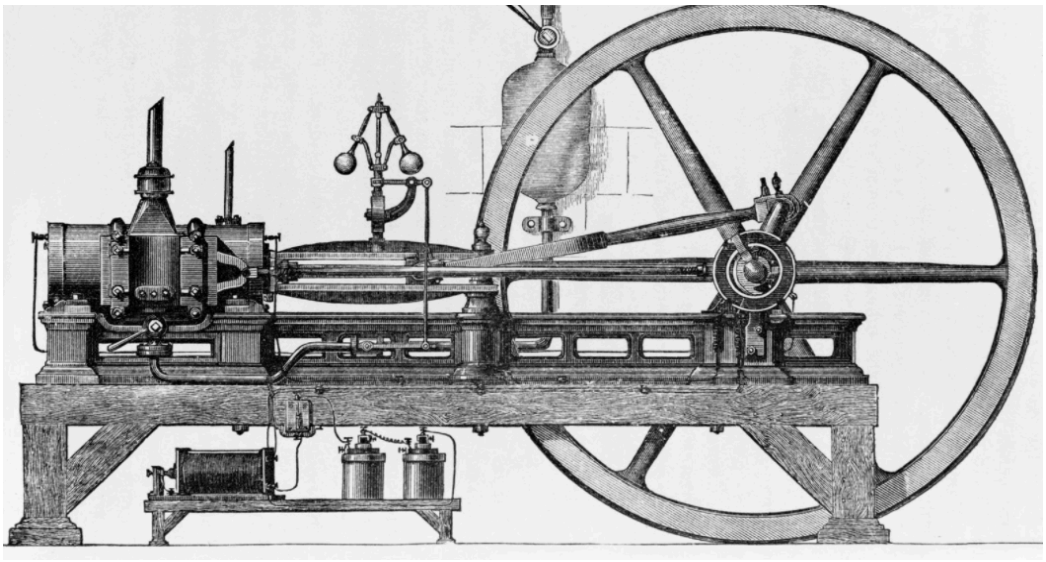
Let us review the progress of what makes automobile complete and perfect. The early automobile itself is like a cake without any decoration, every baker are going to rack

their brains to promote the shape, inside and flavor.

Now we are aware of the prototype of the automobile, we can not drive it because is does not have any safe facilities, strong power, and even the normal figure.

We can conclude that the essential process of automobile is divided into 3 part: they are the engine, the appearance and the components:

1. Here we start from the most essential part of automobile – the engine. In 1860, the first internal combustion engine come to the word by Joseph Etienne Lenoir[**Fig1.2**]. Then we have the durable source of power.



[**Fig1.2**] **The First Engine**

Then in 1861, Nicolaus Otto published the principle of Otto cycle and designed the experimental testing model. After that, Benz was the first one who applied the theory into the real machine, creating the automobile with first gasoline engine we have mentioned before.

After that, different kinds of engines are come out, but they share the same basic principal with Benz. Till the 21 centuries, apart from the internal combustion engine, new technological engines applied in reality, such as hydrogen power, full electricity only, and so on.

2. The appearance. The early outward appearance of automobile is just a wheelchair, we clearly check it in the Fig1.1, because of limited speed, the appearance is crude so that the appearance itself does not make any effects to the working of automobile. So there comes a amount of carriage-like automobiles, which change the horse by the machine power. Now we can see these stuff in most city museum[**Fig1.3**].

[**Fig1.3**] **The wheelchair Automotive**

With the power of engine is becoming stronger, engineer start to take the outward into consideration to cut down the drag coefficient. So the early modern-like automobile is coming into being, that is box-like[**Fig1.4**].

[**Fig1.4**] **The box-like Automotive**

And then, here comes a turning point. Benefiting from research of fluid mechanics, the first successful commercial automobile-The Beetle, creating a new selling record in the automotive industry. The beetle is more comfortable, fast and sturdy, and quickly walked into thousands of households[**Fig1.5**].

[**Fig1.5**] **The Beetle**

After that progress, there comes the boat-like, fish-like, finally, the last type of appearance is wedge-like, this is also the modern automobile we are witness right now.[**Fig1.6**]

[**Fig1.6**] **boat-like-1, fish-like-2, wedge-like-3**

3. The components. It is interesting that the German created the car, but the French achieved the great success in the early stage during 1889 – 1902.

The modern automobile has serval essential parts, they are:
engine part: The problem of engine start system is powered by electricity, which are invented by Kettering, an American engineer. After that, automobile is no more need a hand lever to roll and start.

driving system: In 1895, Andre and Edouard Michelin invented the pneumatic tires and was the first guy to apply them in the automobile. Drivers and seaters are no more feel bumpy.

breaking system: In 1914, the drum brake appeared, and in 1921, an American company Dusenberg invented the hydraulic booster to improve the breaking system, they have been being applied till now.

transmission system: In 1921, Cadillac developed the synchronizer and completely solve the problem of gear shifting.

With the four systems we have mentioned, and combined them with developing road system, the modern automobile system is complete.

So far, the automobile finished the steps from being invented to mature.[1]

1.2 The milestone of Automobile

The previous section is just like the popular science story, and next section, we are going to talk about critical events that effect the history of automobile.

Let us create a timeline from world war I to contemporary society.

During the world war I, the capitalist industry and commerce achieved great progress benefit from the promising revolution of industry. The automotive industry was in the stage of seed. Most automotive brands were currently small and little factories, just like the home workshops. Someone produced wheel, someone rigged out engine, so the production was fluctuating and only satisfied the requirement of patrician. This stage has notable characteristics: large scale and low threshold.

This stage we focus on the market: Europe and Unite States. The characteristics of large scale and low threshold full of the market of Europe, at the same time, the new enterer – US has another mission: assembly. Making use of the technologies that have been applied in the Europe market, finally, the mass production was found by FORD in 1913. That was so-called famous assembly line. This creation solved the problem of low production, extremely reduce the cost of production, which was up to incredibly $360! The half production of world were made from FORD, after that event, automobile was no more exclusive to the rich.[**Fig1.7**]

[**Fig1.7**] **Herry Ford**

However, capitalists will try their best to do something, they will not allow one to

dominate the whole market.

With the failure of outmoding of T-style cars, the competitors in the area of Europe caught this opportunity, it just like the reincarnation, the productor of Europe tuned back on the luxury cars, and cut down its cost, similarly, that action affected the normal cars. During this state, Herbert Austin(UK), André-Gustave Citroën(French), and Louis Renault(French) were represents and push the progress in the Europe mass production.

So far, by the effects of market, we can vaguely perceive that the organizations and brands are going to form spontaneously.

As matter of fact, after world war I, FORD had become a 'monster', it seems that the product it produced was everywhere in the world, this phenomenon was still till 1921, a terrible economic crisis destroyed the world economy, that was Great Depression, the FORD word was forced to 3 shares, they are GM, FORD, and CHRYSLER.

GM relied on the strong technical accumulation and finance, once became the largest world pravity automotive company. After asset restructuring, CHRYSLER was getting powerful and gave an acquisition to the Dodge Brother Company. combined the share of FORD, these three oligarchy capitalists occupied over 75% of the American market. At this time, no more home workshop to have a factory with automobiles[**Fig.1.8**]

[**Fig1.8**] **General Electric, Ford, Chrysler**

The same scene happened on European continent, due to the world war I and effects of the American market the production of Europe increasing significantly. From 1922-1929, the automotive production increased from 73,000 to 239,000, however, the number of factories decreased from 90 to 41, till 1929, like the GM, FORD, and CHRYSLER, there was a three-company combined with Austin, Morris and Singer, they had occupied 75% of British market. In France, Citroën had accounted 40% of market in 1925. During the 1920s, In Italy, FIAT company even realized the goal that most European taxi cars were made by FIAT!

However, although the European market is full of developing, there have a technological gap and geographical limits. So the European market is far away from the economic scale comparing to the US.

Let us put the attention to the time after the world war II.

During the world war II, automakers in various countries were forced to shelve parts of their auto business and were controlled by the government to produce weapons and equipment, on the one hand, this period improved the capabilities of automakers. After experiencing the baptism of war, various auto manufacturers have demonstrated their vitality and creativity, the era of "big bang" in the automotive industry has arrived.

The automotive industry after the war can be summed up with diversification. The U.S. automobile share decreased from 80% of the world to 20%. A large part of losing share comes from the development of European market.

In Europe, Germany was reborn in the ruins. The Volkswagen group once produced more than half of West Germany cars. This laid the foundation of Volkswagen group to become the world's four largest automobile manufacturers. The German BMW company has ever gone from being a motorcycle group to the one of most successful luxury automotive manufacturers in the world.

However, the post-war automotive industry, there were two entrants from east Asian – Japan and South Korea. After the war, Japan was the most emerging automobile country. From its insignificant position in 1950, it once surpassed Germany and American the become the world's leading automobile manufacturer. The strong economic capacity of Japan counteracted the manufacturing industry. Among them, Toyota and Nissan (it later merged with Renault) occupied two seats in the worlds four major automakers. Hyundai, in South Korea has also achieved brilliant results, occupying more than 90% market its country market, as well as the market of Europe and U.S. In the Unite States, one-sixth industries depend on the automotive industry, such as the terms of selling, service, manufacture, however, this ratio of Japan and South Korea is already closed to that comparing to the U.S.

At this point, the overall layout of the automotive industry has formed, the later economic events related to the automobile are almost under this basic.[2]

1.3 The four stages of the automotive industry

Since Karl Benz used a four-stroke gasoline engine to manufacture the first three-wheeled car in 1885, the world automobile industry has gone through a history of more than a century. In this hundred years of history, the growth of the world automobile industry has mainly experienced the following four stages:

The first stage was the advent of Ford's Model T from 1885 to 1908

In this stage, the automobile started from technological invention and finally entered the era of experimental production. The automobile industry also appeared in the so-called "combination of heroes" that was common in the early stages of the growth of most emerging industries. At that time, only the United States, Germany, the United

Kingdom, and France, which are still major car-producing countries, started one after another, and even Japan produced its first car in 1907. At the same time, well-known automobile companies such as Mercedes-Benz, Daimler, Ford, Rolls-Royce, Peugeot and Renault have also been established one after another, from large and small automakers and many independent inventors and various new cars. , New parts and new processes are emerging in endlessly. However, because the technology of the automobile industry at this stage is still in the period from invention to its initial formation, automobile manufacturing is constantly exploring technology and craftsmanship. Therefore, before 1908, not only the output and sales scale of the automobile industry in various countries were still small. , And the manufacturing capacity of a single manufacturer is also at an extremely low level. For example, from 1886 to 1890, the largest Mercedes-Benz car company at that time sold a total of 1,753 cars, of which the highest annual output (1890) was only 603. In 1907, France, Britain, the United States, Germany, and Italy, etc. Although the average output of the major car-producing countries has increased 8.1 times compared to 190, its total output is only 88,850.

The second phase started with the advent of the Ford Model T in 1908, until the early 1940s

In this stage, with the initial formation of automobile manufacturing technology in major automobile producing countries, and the rapid popularization of mass production methods represented by the "Ford system" and "full product series system" in the automobile industry, the world automobile industry has entered This is a new era characterized by mass production and mass sales. Although the First World War and the biggest economic crisis in the modern world economic history occurred during this period, the world automobile industry has won an astonishing rapid growth. For example, in 1913, the world's total automobile production reached more than 570,000 vehicles, an increase of 5.4 times over 1907. After entering the 1930s, although the growth rate of world automobile production slowed down significantly, it still basically maintained an annual output of about 500,000 vehicles. With the rapid growth of the world's automobile industry, with its advantages in technology, production methods and domestic market capacity, the United States has become the world's largest automobile producer since the 1910s. China's automobile industry has always been in an absolute position in the international competition.

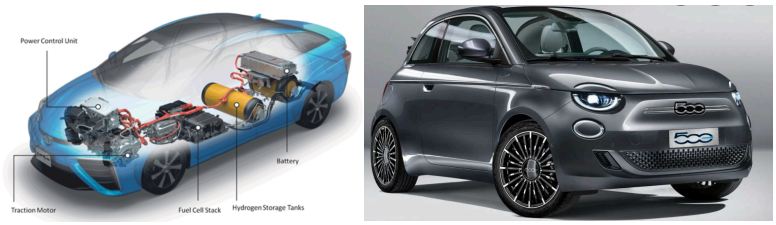
The third stage is from the early 1940s to the early 1960s

In this stage, due to the rapid increase in military vehicle orders during the Second World War, the rapid popularity of automobile consumption in developed countries after the war, the automobile industry's product series, industrial technology and quality standards have made great progress. At that time, the major automobile producing countries The automobile manufacturing technology of China has also gradually matured. In major developed countries, automobiles have not only become popular consumer goods, but the automobile industry has also become a pillar and dominant position in the economic growth of various countries. At the same time, with the revival

and rapid growth of the automobile industry in Western European countries, especially under the impact of the new generation of European products represented by the "Beetle" produced by Volkswagen, the United States has also suffered a severe competitive advantage. challenge. In addition, at this stage, the auto industry of some emerging countries has also entered a substantial initial stage (including Eastern Europe, East Asia, and the Americas). Some of them have already developed on a considerable scale to varying degrees. For example, In 1953 alone, the automobile industries in Canada, the Soviet Union, Australia, Japan, and Mexico reached 480,000, 350,000, 160,000, 50,000, and 35,000, respectively. By 1959, the world's automobile production reached a record of 13.92 million vehicles, and the number of automobiles exceeded 100 million.

The fourth stage began with the widespread use of high technology in the 1960s

The extensive use of comprehensive technology and high technology, the globalization of major automakers, and the overall rise of the Japanese auto industry have led to the formation of a tripartite structure in the world auto market, the United States, Japan, and Europe. The basic characteristics. In addition, countries such as South Korea, Spain, Brazil and Mexico have also entered the list of larger automobile production countries. In this stage, although the global automobile production still maintains a relatively rapid growth, due to the saturation of market capacity in developed countries and the slow growth of market demand in developing countries, the competition in the international automobile market has become increasingly fierce, technological advancement and product diversification The impact of globalization on the international competitive landscape has become increasingly prominent.[**Fig.1.9**]



[**Fig.1.9**] **Left is Hydrogen Energy Vehicle ; Right is electric ca**

1.4 Problems facing the global automotive industry

Since the 1990s, the structure of the world automobile market has undergone significant changes. The rapid development of the automobile market in emerging countries has become the main driving force for the growth of the world automobile market. The demand of the world automobile market is more diversified. New products are launched quickly, and the market demand for automobile safety, environmental protection, and energy saving is increasing, and the production capacity of enterprises is excessive. The production cost of enterprises is rising：

a. Demand development in the emerging automotive market

North America, Western Europe and Japan are the world's three traditional auto markets. These three regions have the largest car production and sales and car ownership. At present, although the automobile production and demand in these three

major markets still dominate, due to the early start of the market economy in these regions, the market development and the perfect market mechanism, the automobile demand market has become saturated, and the growth is relatively slow. Renewal is the main focus, while the demand for non-traditional automobile markets in developing countries and regions has developed rapidly.

With the continuous economic development of Asia-Pacific, Eastern Europe, and South America, the increase in per capita income and the opening of the market, the automobile market is growing rapidly, these three regions are growing into the world's emerging automobile market, and their development prospects are becoming more and more international Big car companies are optimistic. It is estimated that in the next ten years, the growth momentum of the world auto market will mainly come from Asia, Eastern Europe and South America

b. Diversified automotive demand

With the improvement of people's living standards and the progress of society, a prominent feature of automobile consumption is that consumers have more personalized choices and greater differences, and the trend of diversified needs for automobiles is becoming more and more obvious. In the future, cars will no longer be a simple means of transportation. People's pursuit of individualization and specialization will become more and more common, and more attention will be paid to leisure and personalized humanized design. The user's pursuit of individualization has become a fashion, and consumers have begun to pay attention to cars. Be picky. The instrumental and usability functions of cars have been weakened, and their diversification and individualization have been strengthened to meet the aesthetic appeal and cultural tastes of different consumers. Car options that can reflect different driving concepts are more accepted by consumers. Favor. In addition, users have put forward higher and higher requirements for the safety, environmental protection and energy saving of automotive products.

Therefore, automobile manufacturers must adapt to this demand, more effectively meet the diversified needs of the market, and continue to introduce new models that meet different consumer groups.

c. Safety, environmental protection and energy saving requirements

From the perspective of safety, at present, automobile airbags, ABS (anti-lock braking system), etc. have almost become the standard equipment of automobiles. Middle and high-end cars are also equipped with ASR (driving anti-skid system, also known as traction control system), ESP ('Electronic Controlled Driving Stability System). Other safety devices also include a rollover prevention system, which can use sensors to determine whether the driver is turning too fast, so that it can automatically brake to prevent accidents; fiber optic bumpers can determine whether the obstacle in front is a fixed object or a person , So as to automatically start the protection device in the event of a collision; the new generation of automatic cruise system can automatically stop and

start according to the traffic situation, while the current cruise device only uses the radar device to keep the car at a certain distance from the vehicle in front: electronic distance measuring device, automatic measurement If the distance to the car in front is calculated to be rear-end, it will automatically alarm, automatically brake, and activate safety belts and other protective devices to minimize the hazard of the crash: the car light automatic tracking system, as long as the direction is hit, the car lights are on. It can automatically track and change the illumination angle; wake up the dozing driver's device and automatically buffer the impact on pedestrians. In short, these functions that help improve car safety provide users with diversified choices.

From the perspective of environmental protection and energy conservation, the increasingly severe environmental protection issues and the rational and effective use of limited petroleum resources have become urgent research topics for international automobile manufacturers. Japanese automakers have been actively developing small-displacement vehicles and fuel cell vehicles as early as more than ten years ago. In the 21st century corporate development strategy, General Motors has strengthened the development of environmentally friendly technology products and spared no effort to develop low-polluting vehicles. Promote the use of recyclable materials; German automobile manufacturers have developed advanced car diesel engine technology, and are focusing on research on new generation engine technology and alternative fuels, aiming to improve engine performance, reduce carbon dioxide and other harmful gas emissions and noise pollution, and adapt to environmental protection, The general trend and requirements of energy saving; in addition, the automobile industry in South Korea, Brazil, and Mexico also attaches great importance to environmental protection technology and promotes the use of environmentally friendly vehicles. Among them, fuel cell buses in South Korea have been put into small-batch production, and Mexico has also jointly developed electric vehicles with the United States. car. The world's automobile industry has accelerated its investment growth in the field of environmental protection. According to a survey conducted by the California Institute of International Automobile Economics, in the 1980s, the automotive industry in North America, Western Europe, and Japan saw an average annual increase of about 5.5% in investment in environmental protection technology, and about 8.5% in the first five years of the 1990s. From 1996 to 2000, it reached over 12.5%, of which Germany reached 15%.

d. Excess production capacity

From the perspective of the balance of supply and demand, the overcapacity of the global automobile industry is a long-term phenomenon, and has shown a trend of increasing year by year in recent years. In 202, 57% of global cars were produced, including 12.27 million in the United States, 10.26 million in Japan, 5.47 million in Germany, 3.25 million in China, 3.15 million in South Korea, 2.63 million in Canada, 1.82 million in the United Kingdom, and 1.43 million in Italy There are 2.85 million vehicles in Spain and 170,000 vehicles in Brazil. The total global production capacity is about 7.5 million vehicles, with an excess production capacity of 17.04 million vehicles, and the global automotive industry's production capacity utilization rate is about 7%. Due to

overcapacity, competition among auto companies is fierce, leading to a decline in the average profit level of the industry.

Global production capacity for cars and wagons in excess of 1999

Area	Total production	Production capacity	Excess
North America	1760	1860	100
South America	160	400	240
Western Europe	1680	2010	340
Eastern Europe	260	420	160
Japan	990	1400	410
South Korea	280	430	150
total			1390

e. Increased production costs of enterprises

The automobile industry chain is capital-intensive in every link from R&D, procurement, manufacturing to marketing services. Since the 1990s, all links of the industrial chain have shown a trend of increasing costs. In terms of product research and development, according to relevant statistics, the cost of developing a brand-new model currently ranges from several hundred million to one billion U.S. dollars. In recent years, the annual R&D expenses of the world's major automobile companies accounted for about 5% of sales. At the same time, it maintains a large R&D team; in the manufacturing link, it is necessary to digest excess production capacity and organize production according to economies of scale; in the marketing service link, it is necessary to build an internationally competitive marketing service system that faces both domestic and international markets. Sales of automotive products.

In order to be in a favorable position in the fierce competition, all automobile manufacturers are actively carrying out technological innovation, increasing research and development efforts, and speeding up the introduction of new models. In 203, the German automotive industry' s R&D investment totaled 1.7 billion euros, ranking first among all industries, accounting for about 30% of German R&D expenditure; the automotive industry invested nearly 13 billion euros, accounting for 26% of German industrial investment, highlighting the automotive industry' s presence in Germany The core position in the economy, and to ensure Germany's technological leadership in the global automotive industry.

In the increasingly competitive world automobile market, in order to win users and the market, all companies will not hesitate to invest a lot of money in research and development and master leading technology. At present, the life cycle of automobile products is continuously shortening, and the speed of product development is accelerating. Moreover, due to the widespread adoption of high-tech, the capital intensiveness of automobiles is becoming higher and higher, and the investment scale of new product development is increasing. Even in a loss-making year, some auto companies' investment in product development will not decrease, or even increase,

which puts auto companies under pressure from rising production costs.

1.5 The most important behavior in current Automotive Industry - Merger

Before the Merger

As the world's automobile industry is facing the above-mentioned new situations and new problems, in order to solve these problems and contradictions, the automobile enterprise groups are forced to integrate and optimize resource allocation on a global scale, reduce operating costs, enhance enterprise competitiveness, and enable enterprises to move to a larger scale. develop. In the last 10 years of the 21th century, the international automobile industry has undergone the reorganization of global, cross-border, and cross-regional major automobile companies.

The result of large-scale joint reorganization is to change the traditional resource allocation method, industrial competition model and industrial organization structure, and bring severe challenges and development opportunities to the development model of the automobile industry in developing countries.

Mergers and reorganizations that occurred around 2019

Mergers and acquisitions	Time
GM merges with Isuzu	18/09/1998
Toyota mergers with Daihatsu	21/09/1998
Daimler merges with Chrysler	12/12/1998
Renault mergers with Nissan	27/04/1999
Ford acquires Volvo	31/04/1999
GM merges with Fuji Heavy Industries	11/03/2000
Renault acquires South Korea's Samsung	April of 2000
Volkswagen annexes Scania	27/04/2000
Porsche acquires 18.5% of Volkswagen	10/2005
Daimler sells Chrysler	2007
India's Tata company acquires Jaguar Land Rover	2008
Porsche increases its stake in Volkswagen by 50%	01/2009
China Geely acquires Volvo	03/2010
Volkswagen acquires Porsche	07/2012
Fiat acquires Chrysler	01/2014
Infiniti and Daimler share car platform	04/2014
Toyota acquires all shares in Daihatsu Motors	01/2016
Nissan acquires 34% of Mitsubishi Motors	05/2016
Geely acquires Lotus	06/2017
PSA acquires Opel and Vauxhall	01/08/2017
Toyota and Mazda alliance and acquire 5% of Mazda shares	10/01/2018

Geely acquires 9.69% shares of Daimler Group	02/2018
Ford and Volkswagen alliance to reach cross-shareholding	06/2018
Honda acquires 5.7% of GM Cruise	10/2018

The merger and reorganization of the automobile industry group, the groupization and internationalization of the automobile industry are the general trend of the future development of the world automobile industry and the result of the fierce competition in the world automobile market. This trend will have new and greater development in the 21st century. For many years, the world's auto market has been oversupply. At present, the remaining capacity of major auto-producing countries generally reaches about 30%, and new auto companies are still being born. The surplus of global production capacity has made competition in the world auto market increasingly fierce. Under this competitive situation, mergers and reorganizations have become one of the important ways for the world's major automobile companies to strengthen their strength and improve their competitiveness. The large-scale cross-border reorganization of enterprises has fundamentally changed the traditional resource allocation method, enterprise competition mode and organizational structure of the automobile industry.

According to relevant statistics, the total annual output of the 9 major automobile companies accounts for more than 80% of the total global output. It has the characteristics of high production concentration. The global automobile industry has initially formed an oligopolistic pattern, and there is a trend of further strengthening. As of the end of 202, the total global automobile production was 57.96 million. Among the 86 automobile production countries and regions in the world, the automobile production in 15 countries including the United States, Japan, and Germany reached approximately 53.61 million vehicles, accounting for 91.2% of the total global production.

The world automobile industry is developing towards the monopoly structure of multinational corporations. As early as the early 1980s, it was predicted that there would eventually be only 5 to 6 large automobile groups in the world. After the establishment of the Daimler-Chrysler consortium, international mergers and acquisitions were one after another, and major global automobile companies rushed to take action. With the influence of factors such as economic globalization and excess production capacity, after entering the new century, the pace of integration of the automobile industry has further accelerated, and the world's automobile industry will undergo tremendous changes. At present, the world's top six vehicle manufacturers account for 60% of the global market share, and the top 16 auto parts companies account for 40% of global market sales.

Reference:

[1]: **Introduction to Automotive Engineering**, Lin Yong Cheng, 2010. Tsing Hua University press
[2]: **Automotive Industry**, Alan K. Binder, Editor, Ward's Automotive Yearbook. Co-editor of and contributor to General Motors in the 20th Century.

Chapter 2 —— Development of Industry Giants

2.1 The consideration of merger event

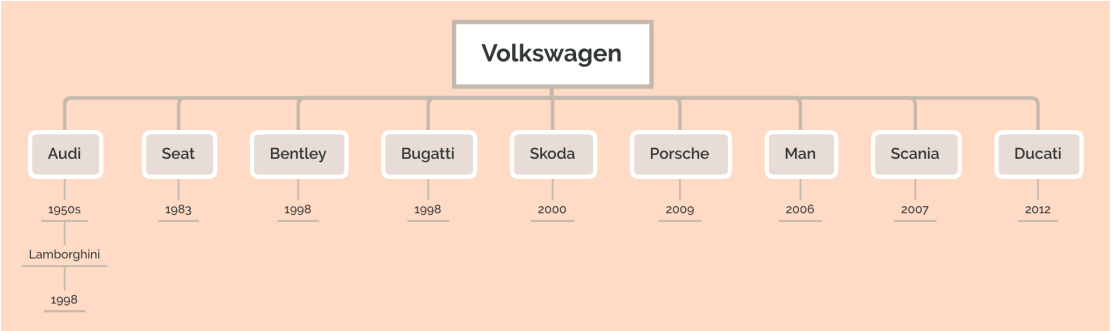
In the previous article, we explained the development process of the automobile industry, which developed from a family workshop to an industrial cluster. In addition, we analyzed a recent Fiat-Mark car merger and found out the influence of regional enthusiasm after the merger. The purpose of the merger is very pure, and its essence is to form economies of scale in the industry. But we need more examples to illustrate the negative or positive effects of economies of scale in the auto industry, and to demonstrate the general regularity of the economy. Therefore, this chapter will use data to illustrate the overall trend of the automotive industry in the case of the other three brands among the four major auto group brands.

2.2 Volkswagen Group

Volkswagen Group, founded in 1937 by the Nazi German government. To this day, Volkswagen has gone through 84 years and has become the most successful automobile company in the world, and is the first of the world's four largest automobile manufacturers. It covers automobile production, industrial design, financial services, etc. Today, Volkswagen is already a behemoth in the automobile industry, and it also contains nearly 12 world-famous automobile brands such as Audi, Skoda, Porsche, and Lamborghini. According to statistics, in Volkswagen's car factory, nearly 41,000 new cars roll off the assembly line every day.[**Fig.2.1**]

[**Fig.2.1**] **The image of Volkswagen**

Throughout the development process of its international operation, it can be roughly divided into three stages: product export, international operation and transnational operation. [**Fig.2.2**]



[**Fig.2.1**] **Volkswagen brand acquisition events**

The first stage: product export stage (1947-1953)

The international development of the Volkswagen Group started in 1947, and its export of V-1 cars to Peng's Motor Company in the Netherlands marked the first step of Volkswagen’ s successful transformation and development. In just two years, nearly one-seventh of the cars sold to European countries. In 1950, Type 2 bus (T Bus) was officially put into production, which further enriched the company's product line layout and ushered in a more rapid consumption frenzy. So far, mass products have been distributed in 18 countries and regions, most of which are concentrated in Sweden. Europe, the Netherlands and other European countries, and some South American countries such as Brazil and the United States have also become the main export markets of public concern. At that time, Volkswagen mainly completed the auto export trade with Brazil through Brasmotor. Among them, about one-third of the exported cars were in the form of CKD parts to complete the entire export process. Since 1952, Volkswagen has focused on a wider range of market positioning and has actively explored markets outside of Europe. In 1952, Volkswagen Canada Limited was established. The following year, Volkswagen Brazil Co., Ltd. was established and established production bases in South Africa and Australia. These highly forward-looking strategic moves have laid a solid foundation for Volkswagen's early large-scale production and marketing network system construction, marking that Volkswagen Group has officially entered a new journey of international development.

Since World War II, the violent turmoil in the international financial market has caused poor sales of American cars overseas. However, this has created a good development opportunity for Volkswagen to enter the international market. However, the limited level of domestic production technology has severely restricted Volkswagen’ s export operations. The return on international investment is still lower than the invested capital. To this end, Volkswagen has adjusted its product distribution layout in full accordance with domestic and foreign market demand and encouraged the export of automobile products overseas. It was not until 1956 that the export sales of complete vehicles exceeded local sales for the first time, and in one fell swoop became the most important foreign exchange earner and leading auto export company in the German automotive sector in the middle of the last century. Since then, the international market has gradually become the focus of attention of the Volkswagen Group.

The second stage: International business stage (1953-1977)

Since 1953, the Volkswagen Group has entered the stage of international business development. This stage is an important turning point for Volkswagen to open up the international market. While consolidating its position in the local market, the Volkswagen Group has opened up the Americas, Africa and Asia-Pacific in turn with its competitive advantages. In the market, an all-round, multi-level production and sales pattern is quietly forming, and production plants and marketing organizations have been established in Brazil, the United States, Mexico and other countries. In 1955, Volkswagen America Corporation was established. The following year, Volkswagen established the Transporter production base in Hannover, which paved the way for the emergence of today's Volkswagen commercial vehicles. At the same time, in the context of post-war economic recovery, the design of the Beetle and Transporter models fully catered to the reconstruction needs of various countries, broke through the limitations of geography and space, gradually entered the global market, and promoted the in-depth development of the mass internationalization process. In 1960, Volkswagen France was established in Paris. In 1977, Volkswagen International Finance Corporation was established, mainly responsible for the development and integration of Volkswagen's overseas business, and played an effective regulatory and operational role in the expansion of the group's international business.

The third stage: Transnational operation stage (1977-present)

This stage started in 1977, and it can be said to be the most glorious leap-over rise stage in the history of the development of the masses. During this period, Volkswagen's international development momentum has been particularly rapid. It has successively launched large-scale overseas mergers and acquisitions and new-build investments, and gradually established the core advantages of a comprehensive portfolio of brands; from an international perspective, re-examined the company's transnational business activities ; And determined the development coordinates with a forward-looking vision, deeply cultivated the huge market of China, and has now developed into the most influential strategic market of Volkswagen Group overseas, and plays an important role in the "2018 Strategy".

Over the past 30 years, the Volkswagen Group has repeatedly undergone acquisition wars. It has successively acquired SEAT, Skoda, and many other brands, building a huge brand network and a multi-brand camp. In addition, under the general situation of increasingly fierce international competition and obvious rise of trade protectionism, Volkswagen Group vigorously advocates industrial reorganization. In 1994, the Volkswagen Financial Services Group was established, with two major departments: the Automobile Business Department and the Financial Services Business Department. They stand at the strategic level, perform their duties and cooperate closely, and through effective resource integration, they have made a positive contribution to maximizing the interests of the group.

As a leader in the automotive industry, Volkswagen has the largest number of merger

cases among all brands. But we have to list 3 of those with strategic turning point significance.

2.2.1 Audi Acquisition Event

As early as 1955, the beetle designed by Porsche quickly became popular in Germany and Europe, and was exported to more than 100 countries because of its low price, excellent performance, and streamlined design. By the end of the 1950s, 4 out of every 10 cars in western Germany were Volkswagen Beetles, and Volkswagen has also become the largest automobile company in Germany.

For ten years, the Beetle has been in short supply for a long time. In 1965, Volkswagen decided to expand its production capacity to shorten the supply time and meet the ever-expanding market demand. In Germany, Volkswagen has set its sights on Audi, one of the three major mini-car manufacturers. At that time, the new automobile alliance established by Audi and the other three companies Horch, DKW and Wanderer, after being acquired by Daimler-Benz, had invested 127 million marks to build a new production base and became the largest and most modern car in Europe. factory.

But the good times did not last long. Audi and its parent company Daimler-Benz had a disagreement and were abandoned by Mercedes-Benz. At this time, Audi was on the verge of bankruptcy. At this time, the shrewd Volkswagen leadership set their sights on Audi。

After being acquired by Volkswagen, the factory of the New Auto Union began to assemble the Volkswagen Beetle. By July 1967, a total of 348,000 vehicles had been produced. The Beetle series became the savior of the New Auto Union. Not only that, the parent company Volkswagen also gave the New Auto Union ample cash flow. Audi began to resume its research and development capabilities with a calm mind. It successfully developed the Audi 100 sedan with a four-stroke engine. The original plan was to produce 100,000 Audi 100 cars. With 800,000 vehicles sold, this sedan allowed the Audi brand to be restored and the New Auto Union slowly out of its predicament. In 1993, the Volkswagen Group formulated a new brand strategy. Since then, Audi has separated its brand operations from Volkswagen, and Audi has regained independent marketing and management rights.

Facts have proved that Volkswagen has no vision, and Audi's amazing profitability is what Volkswagen values. It is reported that as a luxury brand under Volkswagen, Audi not only plays an important role in the promotion of Volkswagen’ s brand image, but is also a major profit contributor to Volkswagen Group. In 2019, the Volkswagen Group’ s global sales reached 10.9746 million units, an increase of 1.3% year-on-year; Audi’ s sales were 1.846 million units, an increase of 1.8% year-on-year. Although it was not as good as the Volkswagen brand in the sales ranking, Audi achieved an operating profit of 4.5 billion euros. Volkswagen's most profitable brand.[**Fig.2.2**]

[**Fig.2.2**] **The image of Audi**

2.2.2 Skoda Acquisition Event

Volkswagen' s second successful acquisition case was the Skoda acquisition. After some tortuous acquisition details, In October 1994, the first new Skoda model produced under the auspices of Volkswagen was unveiled globally. Felicia was popular by the media, and a year later, sales of the car exceeded 130,000. It is the beginning of a series of new models at different price points. The Volkswagen Group has taken a revolutionary step by introducing a platform strategy so that its brands-Volkswagen, Audi, SEAT and Skoda-can use each other's components. This in particular brought power to Skoda, and Skoda thus obtained the guarantee of obtaining high-quality parts from Volkswagen and Audi. Skoda has more than 10 models in production and is one of the few manufacturers capable of delivering "customer-made" cars to dealers within four weeks.

This acquisition case is not only an increase in sales for Volkswagen. Internally, Volkswagen has revolutionized the concept of universal parts. As mentioned above, most of the parts of different brands of cars can be universal. This is undoubtedly good news for the public's R&D, production, and management costs. From a certain perspective, perhaps this is an innovative technological development brought about by the requirements of economic scale.[**Fig.**2.3]

[**Fig.2.3**] **Skoda together with Volkswagen**

Operation status of main brands of Volkswagen Group in 2014

Brands	Sales(million)			Margin(billion EUR)			Profit(billion EUR)		
	2014	2013	Y to Y	2014	2013	Y to Y	2014	2013	Y to Y
Audi	174	134.9	29%	538	499	7.8%	52	50	4%
Skoda	103.7	92	12.7%	118	103	13.9%	8.17	5.22	56.5%
Seat	39.05	35.5	10%	77	69	11.6%	-1.27	-1.52	-
Bentley	1.1	1.01	9%	17	16.79	4%	1.7	1.68	1.2%
Porsche	18.98	16.2	17.1%	172	143	20.1%	27	25.79	4.7%
Commercial Vehicle	44.5	43.6	2%	96	93.7	2.5%	5.04	4.48	12.5%

Skipping outdated data, according to the latest data, in 2020, the Volkswagen Group delivered 9,305,400 vehicles to customers around the world, even though it was affected by Covid-19, a year-on-year decrease of 15.2%. However, in the context of the overall market decline, the Volkswagen Group slightly expanded its global passenger car market share in 2020. In 2020, the Volkswagen Group delivered 231,600 fully electric vehicles, more than three times the number delivered in 2019. The sales of plug-in hybrid vehicles increased to 190,500 units (an increase of 175%). Volkswagen, Audi and Skoda are the largest car brands in the group. China and Western Europe are the largest markets. The combined power of the three is so huge.

Throughout the development history of Volkswagen Group for more than 70 years, market orientation is the fundamental reason for its international development. In the early days when the domestic auto market became saturated, competition among auto companies was particularly fierce, and the company' s domestic operations were struggling. At this time, the Volkswagen Group promptly shifted its strategic market to the international market, and relied on its strong corporate strength and excellent performance. Technical level and rich management experience, actively open up new markets, explore a wide range of development opportunities, and achieve the best allocation of resources. In addition, there are many direct reasons that prompted Volkswagen Group to embark on the road of international operation.

First, avoid trade barriers and protect corporate interests. In the early days, in order to promote cooperation with the United Kingdom, the Canadian government implemented tax-free preferential policies for the import of British cars, which severely weakened the export price competitiveness of Volkswagen. In this context, Volkswagen has established a company in Canada to be responsible for the local marketing business and build a complete service network system. At the same time, in an environment where trade protectionism prevails, the Brazilian government has also stepped up the protection of its own automobile industry, using various forms of trade barriers such as the import license system to restrict the import of foreign automobile products, which means that if the public wants to Entering the Brazilian market, localized operation is its only option. For this reason, Volkswagen chose to establish Volkswagen Brazil Co., Ltd. in Sao Paulo. Since then, in order to meet local localization standards, the company

quickly achieved a successful transition from assembly to production. In 1960, France's import restrictions on automobiles were greatly relaxed, and Volkswagen France announced its establishment to occupy the strategic market of France for a long time.

Second, fluctuations in exchange rates have promoted the development of Volkswagen Group's international behavior. In the 1970s, the Deutsche Mark faced significant appreciation pressure, and trade frictions continued to intensify, which seriously affected the development of Volkswagen's exports. It wasn't until the depreciation of the U.S. dollar in 1976 that Volkswagen's exports to the United States improved, and actively built factories in the United States to encourage production.

Third, government encouragement and support provide a reliable guarantee for the international development of Volkswagen Group. In order to develop and revitalize the domestic automobile industry, the Nigerian government actively adjusts its industrial policies, vigorously guides and supports the close cooperation between Volkswagen Group and local automobile manufacturers, and hopes to conduct in-depth cooperation and exchanges with Volkswagen in project research and development, technological innovation, etc. through cooperation. Achieve complementary advantages and promote the symbiotic development of the economy. Of course, this move also laid the foundation for the development of Volkswagen Group in Nigeria. In 1973, Volkswagen established a holding company in Lagos, which expanded the group's production capacity in the region and further consolidated its position in the industry in West Africa. At the same time, the region has also become an important export market for Volkswagen's two companies in Brazil and Mexico. Such a bold move has given China full confidence in the future development of the Volkswagen Group. Since then, Volkswagen has opened a new chapter in China's development and has become China's most successful international strategic partner.

Fourth, rising labor costs have vigorously promoted the international development of Volkswagen Group. In the early development of Volkswagen, high labor costs in some countries severely restricted the localized development of Volkswagen Group. In order to further avoid the risk of rising costs, Volkswagen began to consider transferring part of its production capacity overseas, and complete export trade by establishing local production bases and establishing a marketing network. In 1984, through cooperation with SEAT, Volkswagen transferred the production of its Polo to its Spanish factory, gradually getting rid of its weak position in Western Europe, and obtained a higher product profit margin with the advantage of local cheap labor. Improved its core competitiveness in Europe.

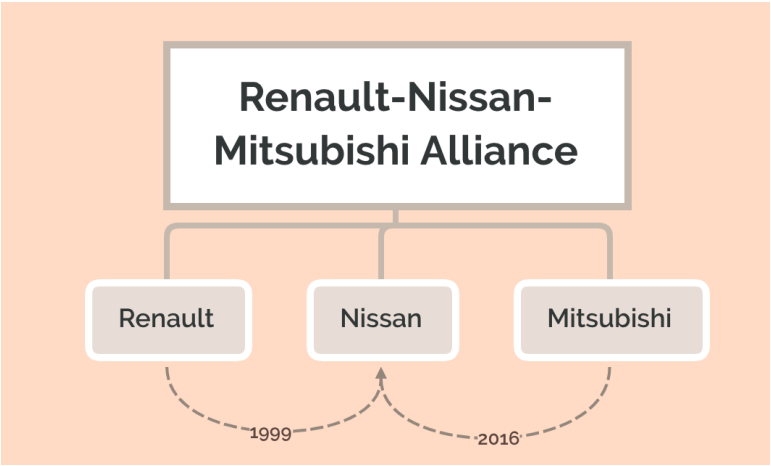
2.3 The Renault-Nissan Alliance

I believe most people have a basic understanding of the two brands Renault and Nissan. Renault has won the French car sales rankings for many times, while Nissan is the three largest Japanese car manufacturer. They have their own brand development, but their biggest turning point was in 1999 when Renault and Nissan cross-shareholdings formed

a separate and unique group. The two parties jointly established a decision-making body. At a meeting, the management committee makes a decision on the mid-to-long-term plan and joint cooperation plan of both parties, and supervises the implementation of the plan.[**Fig.2.3.1**]

[**Fig.2.3.1**] **The image of Nissan-Renault Alliance**

Similar to the Fiat merger case, Renault and Nissan are huge companies in their own right. They merged into one, so what were their achievements? [**Fig.2.3.2**]



[**Fig.2.3.1**] **Renault-Nissan-Mitsubishi alliance merger time**

2.3.1 Alliance background analysis

Renault Motor Company

The French Renault Automobile Company, founded in 1898, is the second largest automobile company in France. It was taken over by the French government after the war because it provided a lot of weapons to the German army during World War II. The company used state capital to merge many small car companies and leveraged Renault's technological potential to develop new car products of various varieties. As the only automobile company in the world outside of China that is dominated by government assets, the development of Renault is closely related to the strong backing of the government. At the same time, Renault has been working hard to avoid the ills of state-owned enterprises, constantly making self-adjustment, innovation and self-

improvement in the fierce market competition, and finally ranks among the top ten automobile groups in the world.

Nissan Motor Company

Nissan Motor Co., Ltd. was founded in 1993 and is one of Japan’ s three major automakers. It has 21 manufacturing centers in countries around the world, with an annual output of approximately 2.4 million vehicles, and sales of vehicles in 191 countries and regions around the world. . Nissan has a world-class technology and R&D center, which is called "Tech Nissan" by the automotive industry. However, just like the common problems of many large Japanese companies, Nissan is full of serious bureaucracy and internal cost control is extremely unfavorable. Although the company has experienced rapid expansion in scale, its profitability has not been effectively improved. Since 1991, Nissan’ s operating conditions have gone from bad to worse. By 1999, it suffered losses for seven consecutive years, with debts of up to 2.1 trillion yen, and its market share dropped from 6.6% to less than 5%. The entire Nissan company is on the verge of bankruptcy.

2.3.2 Industry Background

After more than one hundred years of development in the world automobile industry, the trend of mergers and alliances has become more and more obvious. The growth history of almost all multinational auto giants is a history of mergers and acquisitions and alliances. For example, Ford, General Motors, Chrysler and other automobile companies in the United States, they have experienced dozens or even hundreds of mergers and acquisitions before they survived from more than 200 American automobile companies and become major competitors in the world automobile market.

In the mid to late 1990s, the increase in the world's automobile industry began to slow down, the main consumer market has shrunk to varying degrees, and the competition among manufacturers has become increasingly fierce. In September 1998, the Chrysler Automobile Company, one of the three major American automobile giants, merged with the German automobile giant Daimler-Benz Motors to form the Daimler-Chrysler Automobile Company. This is the largest merger in the history of the world's automobile industry, and Daimler-Benz has become one of the world's three largest automobile groups.

2.3.3 Merger events and advantages

In fact, in the late 1990s, many auto industry giants began to consider bidding for Nissan, but Nissan’ s huge losses, huge debts, and various major corporate ills that were almost identified as hard to return made Ford, Daimler-Chrysler When the company withdrew from the bidding, the French car company Renault picked up the hot potato. In the eyes of others, this is tantamount to a huge adventure, and therefore, almost no one is optimistic about this transaction. An observer commented: Renault’ s idea of saving Nissan is like relying on French civil servants to revive the Japanese economy.

But the miracle appeared after the alliance between the two parties. Not only did Nissan succeed in turning losses into profits, but also with the rigorous integration plan and precise implementation capabilities of the two parties, the alliance really achieved results, improved the profitability of both parties, and further opened up new markets. Consolidate the old market and form a win-win situation.

As a global strategic partnership, the alliance is based on two key expectations: the group spawned by the alliance will be able to face global challenges in markets, products, and technological innovation; the alliance can form strong complementary advantages, especially In three key areas: production (mainly the product platform), procurement and marketing.

From 2000 to 2002, the synergy created by the alliance saved both parties US$3.4 billion in expenses. From then on to 2005, the synergy effect saved both parties a total of US$3 billion in expenditure each year. The ultimate goal of the alliance is very clear: to build a strategic advantage and become the world's leading automobile group. This purpose is also very clearly reflected in Nissan's revival plan: to build strategic advantages as the guide.

On May 28, 1999, Renault acquired a 36.8% stake in Nissan Motor for US$4.86 billion at a price of 400 yen per share, and a 22.5% stake in Nissan Diesel for US$76.6 million. In addition, Renault also acquired US$305 million. With Nissan’ s five financial subsidiaries in Europe, Renault spent a total of US$5.2 billion to complete the transaction. By October 30R of that year, Nissan’ s stock price rose by 61.2 due to the market’ s confidence in Nissan’ s revival and the Renault-Nissan Alliance. The two parties also arranged share options when signing the alliance agreement. That is, after the completion of the Nissan revival plan, Renault will increase its shareholding in Nissan to 44.4% at the set price of 400 yen per share; the two parties formally established the Renault Nissan Alliance in October 2001 . Carlos Ghosn of Renault joins Nissan's board of directors, and the chairman of Nissan Motor joins Renault's board of directors. A total of 17 people from Renault entered Nissan's senior management and stationed in various important departments; Nissan had 7 people entered Renault's senior management, and in the second half of 1999, another 14 people entered Renault's senior management. In October 2001, Renault planned to invest another 2 billion euros in Nissan at a price of 400 yen per share. Nissan will issue 540 million new shares to it, so that Renault will finally acquire a 44.4% stake in Nissan. In March 2002, Nissan acquired a 13.5% stake in Renault.

In addition, the alliance has established a global alliance committee, inter-company working group, functional task group, alliance coordination department, Renault Nissan Co., Ltd. and other institutions.

2.3.4 Mutual win

For Nissan, the value of the strategic alliance with Renault is that Nissan can learn how to deal with suppliers and workers in Europe. For Renault, you can learn Japan's just-in-time supply (JIT) method and efficient factory management. We can clearly see that the purpose of both parties entering the alliance is to acquire knowledge. Renault is in order to obtain an effective method of producing high-quality small cars. For Nissan Motor Company, dealing with the national and local governments is a new experience, and I hope I can learn some of the tricks from Renault Motor Company. Nissan acquired and imitated the general exchanges between Renault Motors and local government officials and communities, and Nissan's managers learned the art of public relations in Europe. This experience was later transplanted to Nissan's production base in the UK. In addition, Nissan Motor Company brought new management experience and insights in its contact with the labor association. Practice has proved that both partners need equal capabilities with each other, leading to a 50:50 partnership.

Under this cooperative relationship, Renault Motor Company and Nissan Motor Company have met their respective expectations of the companies. In other words, under the cooperation of this kind of strategic alliance, the two parties have realized mutual learning, thereby enhancing their respective core competitiveness. Renault Motors therefore summed up its experience and pointed out ten key steps for transferring knowledge and capabilities from the alliance:

(1) Select and send prospective employees to the alliance to study.

(2) Encourage employees to actively participate in technology development.

(3) Apply learning results to practice.

(4) Pack the technology to make it easier for employees to accept it.

(5) Provide formal training when using new technologies.

(6) Provide employees with opportunities for collective communication, so that they can share experience and technology.

(7) Conduct follow-up investigations to ensure the effectiveness of technology transfer.

(8) Disseminate technology through various methods, such as written reports, oral presentations, demonstrations, experiments, etc.

(9) Provide necessary human and financial support for technology transfer and dissemination.

(10) Technology transfer is matched with talent transfer.

The two parties share the product design and production platform, which reduces the production cost of approximately US$3 billion per year and improves the utilization rate of assets; product planning is carried out on a unified platform, so that products can cover the market more fully; use their own R&D advantages Jointly improve technical competitiveness; combine the logistics systems of both parties to establish smoother and broader automobile trade service channels, and so on.

Before the alliance, Renault had a large advantage in the markets of Europe, South America, North Africa and the Middle East, while Nissan performed well in markets such

as Asia, Australia, North America, Central America, and Africa. Therefore, after the alliance was established, both parties took advantage of their respective advantages. Help the other party to expand its business in a market that has not yet entered or has a very small share, which greatly reduces the cost and risk of market development.

Renault Nissan’ s joint purchasing company followed the basic operating principle of "one voice facing the supplier", and in the first year of operation, it overfulfilled its commitment to reduce costs and successfully selected 146 co-suppliers for different projects. In view of this, Renault and Nissan decided in June 2002 to increase the joint purchase amount to 21 billion U.S. dollars. In addition to the above, the two parties also established Renault Nissan Information Service Company (RNIS) in July 2002. The information service company is mainly engaged in information service planning, network layout, information service structure, technical structure, benefit evaluation, project office, and SAP asset center. It has 7 functional departments in total for Renault and Nissan, and provides information service policy recommendations for both parties. Renault Nissan Information Service Co., Ltd. has entered the preliminary stage of operation from July 1st. It will first consist of 15 full-time project managers and experts. The task is to help build synergy. In the next phase, more human resources will be invested to enable the seven functional departments of Renault-Nissan Information Services to provide comprehensive information services for Renault and Nissan. The manager of each functional department will set goals and obligations for the team. The five directors of the Renault Nissan Information Service Company's board of directors are composed of the chief financial operations officer and chief information operations officer of both parties of the alliance and the general manager of the company.

Through the formation of an alliance, the two parties have become the world's fourth-largest automobile manufacturing company, enabling both parties to achieve the highest level of competitiveness in terms of purchase quality and cost management performance, and coordinate global supplier relationships to gradually show strategic advantages in the competition.

2.4 TOYOTA Group

Unlike the Volkswagen Group and the Renault-Nissan alliance, Toyota has rarely merged. Perhaps readers will have questions at this time. Is Toyota not achieving economies of scale? Obviously it is impossible. As the second largest car manufacturer in the world, Japan's Toyota Group is already the world's number one car company in terms of sales volume and the first company to have an annual output of more than 10 million units. As early as 2018, Toyota's revenue was not much different from that of the second-ranked Volkswagen Group, but his profit was Mercedes-Benz, and BMW's total profit was even more.[**Fig.2.41**]

The sals of Automobile in 2018			
The rank of Profit	Company	Sales(M)$	Profit(M)$
1	TOYOTA	265,172	22,510.10
2	Volkswagen	260,028.40	13,107.30
3	Mercedes Benz	185,235.40	11,863.90
4	BMW	111,231.40	9,716.60
5	HONDA	138,645.80	9,561.30
6	FORD	156,776	7,602
7	Nissan	107,868.20	6,741.30
8	GM	157,311	-3804

[**Fig.2.4.1**] **The sales of Automobile**

What made the Toyota Group's shocking results? We first review the European market. Renault and Volkswagen, even Fiat and France's logo cars, they are quite senior automotive industry brands, they have the following advantages:

- **Profound technical background**
  Thanks to the development of the Industrial Revolution, as early as the 19th century, the first and second industrial revolutions completely brought a brand-new technological outlook to the European continent. As we mentioned above, automobile workshops blossomed everywhere. Then went through a series of merger activities, just like Darwin’ s theory of evolution, and finally formed several large-scale auto giants, each of which has its own unique technology, which makes the auto market become fiercely competitive.

- **The user population is stable**
  The user population in the European market, after experiencing the earliest automotive revolution, has its own choice for the requirements of the car. Just like a team, each team has its own loyal fans.

- **Early market development**
  As shown in the article, the European automobile market is the earliest and fastest formed in the world. For example, local brands such as Volkswagen Group, Fiat and Renault have strong geographical advantages.

Compared with European brands, the early Toyota does not have mass production capacity. Just like an animal evolution, European car brands are going to grow step by step, and Toyota seems to be an alternative, but this does not prevent it from becoming One of the most successful companies, so what is his killer? That is management.

The examples of the rise of major brands in Europe let Toyota know more about the relationship between cost and profit than any other brand. If you want to reach the height of these brands, does it have to follow their development route? Is it necessary to spend hundreds of years to implement technology and merge these measures? I

think their management is already familiar with the definition of economies of scale, so Toyota’ s management is ready to follow an unusual principle. Their management purpose is to reduce the cost per unit of product and increase the output per unit of time. ,quality.

In order to meet this requirement, Toyota has designed an amazing Lean Model (JIT) in the automotive field, which has become synonymous with process-based production capabilities that reduce waste, reduce costs, and improve quality and profit. And has been used by the industry, even cross-domain applications.

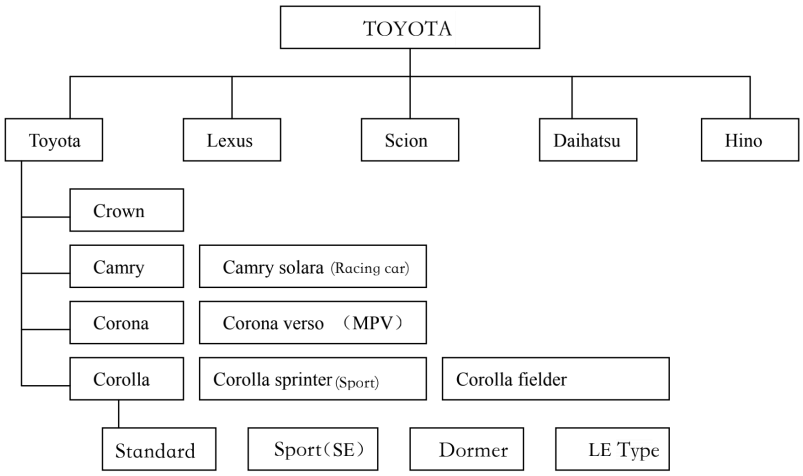
In addition to the lean model, Toyota has designed the Toyota Business Method (TBP) as the action routine and thinking model for all Toyota staff to deal with various problems. In addition, Toyota has designed five principles: dare to challenge, continuous improvement, present on the spot, respect for others, teamwork. These five principles are called "Toyota Truth" by the industry.

With so many management models, Toyota's production capacity has been unprecedentedly improved. According to statistics, most manufacturers have launched a new car in two years, but Toyota has less than a year. In the 1990s, Toyota's production scale was only half of GM's, but as many models were put on the market as GM. We have to praise the magical power of the Toyota model.

2.4.1 Toyota business model analysis

Like other car brands, Toyota will segment the market. Toyota has benefited from the impact of the lean model, and has also received the guidance of the "value analysis method" in the innovative model. Toyota has accurately prepared a well-divided brand for each market.

Toyota Motor Brands can be divided into four levels from high to low. The first level is the corporate brand of Toyota Motor, and the second level is a series of family brands, including Toyota, Lexus, Scion, Daihatsu, Hion and other five brands. The first level is the product brand. For example, the Toyota brand includes Camry, Corolla, Corona, Crown and other product brands. The fourth level is a descriptive brand. Different car products cover different models to distinguish different products. [**Fig.2.4.2**]



[Fig.2.4.2] Toyota product map

Toyota Motor includes five family brands. Daihatsu and Hion are brands integrated and operated independently through acquisitions, while Lexus and Scion are brands that Toyota has cultivated through continuous efforts. Toyota was able to form five independently operated brands. In addition to the reasons for mergers and reorganizations, the more important thing is that the target markets of these five brands are different, and the brands have completely different brand core values. This is when entering new markets. The practice of creating a new brand is worth learning.

As a member of the family brand, Toyota covers more than 30 product brands with a wide range of product types. At the same time, it has occupied the passenger car and commercial vehicle market. In the passenger car field, it not only develops cars, but also continuously develops and innovates. Extend to SUV, MPV and sports car field. The commercial vehicle field is also rich in products. Although many brands make Toyota's brand structure very complicated, this huge brand structure is not confusing. On the contrary, through reasonable and orderly planning, a good division and connection between brands have been formed, with clear levels. Although the price of each product brand is different, it is not too extended, and Toyota also has a unique concept for the integration and differentiation between different levels of brands.

2.5 The inspiration from merger event

In this chapter, we talked about the three most important automobile groups in the world. They used acquisitions, mergers, and improved management models to make their production scale bigger and better. They are all growing in the same direction, which is to make their own industries infinitely tend to scale.

There is no doubt that the automobile industry is tending towards the development of economies of scale, and the advantages it brings are the advantages of cost reduction, technology sharing, and risk resistance.

As a very special industrial product, automobile is an integration of various fields, including metal, electronics, product design and planning, etc. For the progress in the automotive field, it should be said that it is the progress of a region or country's industrial level, and the advantages it brings must be the positive economic impact.

2.6 Reference

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Chapter 3 —— The most important acquisition events of industry

1. Background and historical trends of M&A

In the previous two chapters, we first learned about a complete history of automobile development, transforming from a primitive family workshop to a modern automatic factory. Secondly, we found through the research of major auto manufacturers that can represent the direction of global auto development that mergers and acquisitions flood the entire corporate development timeline. Then we have a question, why are these automakers so keen on acquiring and merging companies?

It is generally believed that a company's merger or acquisition of its main competitors can significantly reduce competition in the industry, thereby increasing profitability. Large companies can obtain the benefits of economies of scale or realize cost savings from mass production, which small companies cannot. Large companies also benefit more from economies of scope, that is, savings resulting from the consolidation of the marketing and distribution of different types of related products (for example, soft drinks and snacks). In some cases, these effects are obvious. For example, in addition to traditional services such as loans, settlement and savings, as well as the convenient services of branches all over the country, customers of large banks can also benefit from other financial services provided by the bank.

Through mergers and acquisitions, large companies usually gain the advantages of vertical integration, access to specialized technology, monopoly profits, increased efficiency, and tax deductions for operating losses. [1]

The famous American economist Stigler, winner of the Nobel Prize, once said, "No major American company has grown up through mergers and acquisitions to some degree or some form, and almost no major company has grown mainly by connotation expansion. Up." The growth history of major foreign automobile enterprise groups also proves the above conclusion. General Motors, which has always been ranked as the world's top enterprise, was formed by Durant's reorganization of dozens of small car companies through stock exchange. At the beginning of this century, Durant acquired multiple companies that manufacture and sell automobiles and parts through stock exchanges, including 4 large companies such as Buick, Oakland, OS mobile, Cadillac, and 15 smaller companies. Automobile companies, 3 truck manufacturing companies, 10 parts companies, and 1 sales company, which initially formed the embryonic form of General Motors. After the 1920s, GM carried out a series of vertical industrial reorganizations, thus occupying the top position not only in the United States, but also in the global auto market.

One of the purposes of mergers and acquisitions of listed companies is to optimize financial performance, improve the valuation of listed companies, and restore refinancing capabilities. The premise of all this is that listed companies have high-quality assets to come in, which improves the financial performance of listed companies. Investors and the market believe that there is room for growth in the stock price and

market value of listed companies. Investors will subscribe for the stocks of listed companies, whether it is subscription of new stocks or tradable stocks in the open market, objectively it will improve the valuation of listed companies.

Under normal circumstances, the value of the enterprise after a successful reorganization will increase. And the success of corporate restructuring, stock prices will rise. Therefore, when studying the company's reorganization and merger, the analysis of the company's stock price is an important node.

The theoretical basis is derived from practice. It is necessary for us to analyze the acquisitions and events in the history of automobile development to verify the impact of mergers and acquisitions.

2. Cases Study

2.1 Volkswagen and Porsche

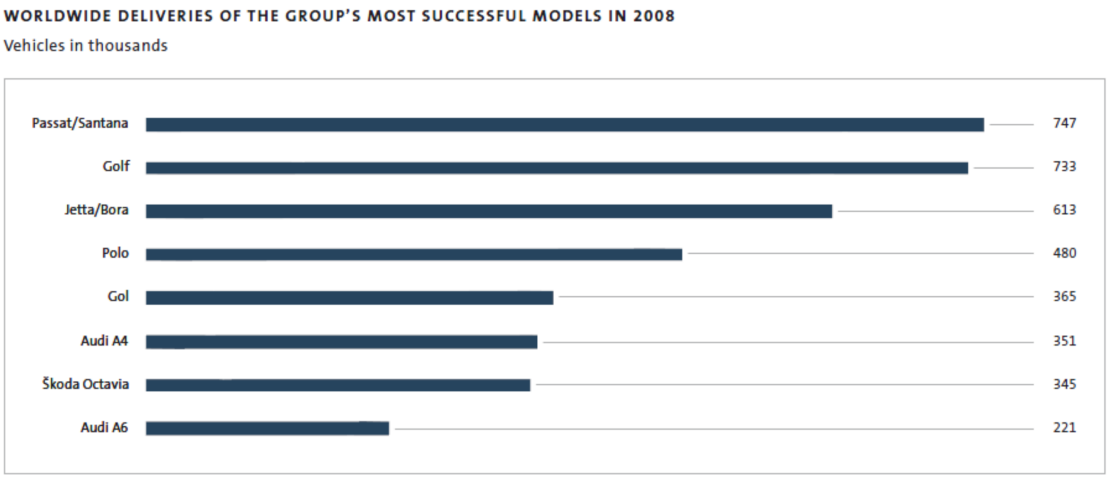
Throughout the history of the automobile industry, this seems like a battle for territory full of gunpowder. Only by learning the previous cases, the entrepreneurs in the back will know how to continue to survive.

Let us look back to 10 years ago and witness the most sensational merger and acquisition case in the past decade-Volkswagen's acquisition of Porsche.

First of all, let us compare the basic data of both sides of the merged company.
In 2008, Volkswagen's annual output exceeded 6.3 million vehicles. [**Fig3.1**]

Brand	2006		2007		2008	
Thousand vehicles / € million	Vehicle sales	Sales revenue	Vehicle sales	Sales revenue	Vehicle sales	Sales revenue
VW passenger cars	3451	70710	3664	73944	3648	72928
Audi	1139	31720	1200	33617	1275	34196
Skoda	562	7186	620	8004	626	8039
SEAT	419	5874	411	5899	375	5196
Bentley	10	1340	10	1376	8	1016
VW commercial vehicles	388	8092	427	9297	439	9607
Scania	-	-	-	-	31	3865
VW China	694	-	930	-	989	-
Total	5720	96004	6192	98752	6272	102632

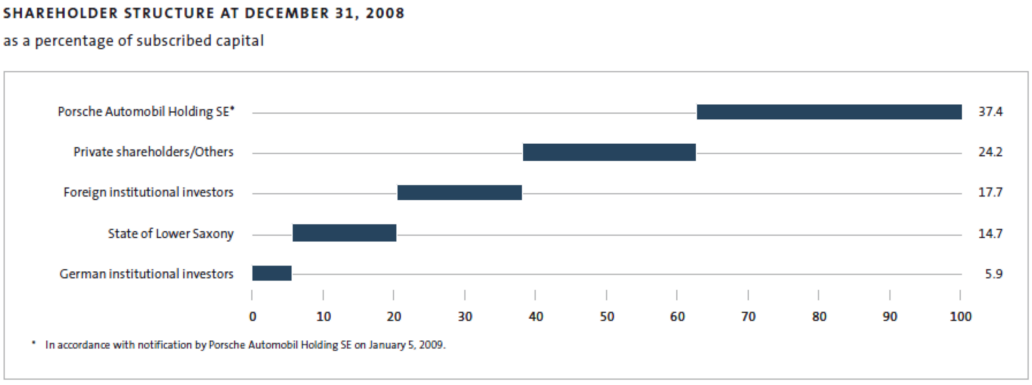
[**Fig3.1**] **Volkswagen brand sales**



[Fig3.2] Volkswagen's best-selling models in 2008

	2006	2007	2008
Operating income	104875	108897	113808
Gross margin	13.2%	15.0%	15.11%
Net profit	2750	4122	4688
ROE	16.9%	16.1%	12.1%
EPS	7.04	10.34	11.88
Total assets	136603	145357	167919
Shareholders' equity	26959	31938	37388
Net assets per share	68.59	80.38	87.49
Common stock	-	291,337,267	294,920,207

[Fig3.3] Volkswagen's basic financial indicators



[Fig3.4] The equity structure of the Volkswagen Group

Volkswagen stock price as of 2009:

[Fig3.5] Volkswagen stock price

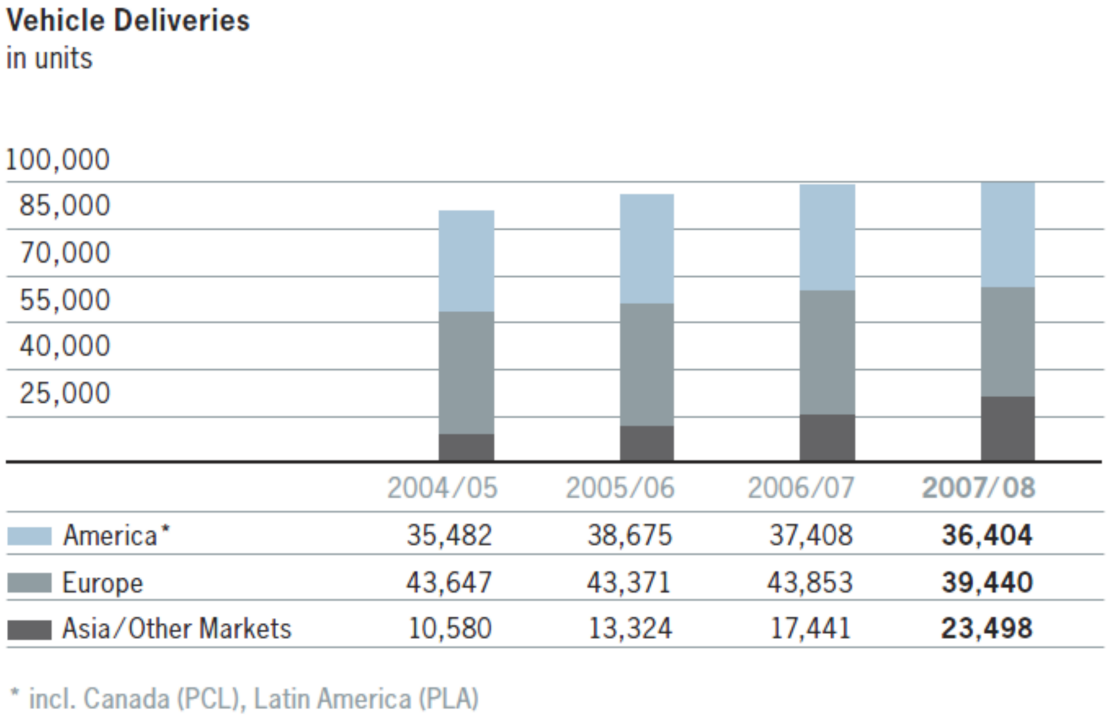
On the other hand, Porsche' s financial data:

(in units)

Model	2005/2006	2006/2007	2007/2008
911	34386	37415	31423
Boxster/Cayman	27906	26146	21747
Panamera	-	-	-
Carrera GT	368	9	-
RS Spyder		2	4
Cayenne	34134	33943	45478
Total	96794	97515	98652

Note: a fiscal year is for the period from 1 August to 31 July of the following year.

[Fig3.5] Porsche sales by brand



[Fig3.6] Porsche Sales Chart by Region

	200/2006	2006/2007	2007/2008
Operating income	7273	7368	7466
R&D	-	723	874
Net profit	1393	4242	6392
ROE	26.06%	44.74%	37.94%
EPS	7.81	23.98	35.94
Total assets	14640	23332	45577
Shareholders' equity	5338	9481	16846
Net assets per share	61	108.35	192.53
Common stock	-	8750M	8750M

[Fig3.7] Porsche's basic financial indicators

[Fig3.8] Porsche stock price trend

[up to 2/9/2009]

From the financial data, Porsche's net profit margin is particularly high. Although the overall company market value is significantly lower than that of Volkswagen, Porsche's ultra-high net income per share makes Porsche one of the most worthwhile stocks.

However, since 2007, Porsche's stock price has stopped, and Porsche's stock price has generally shown a downward trend. However, compared with the public, the situation of the public seems to be more severe. For Porsche, a major positive event is bound to be needed so that Porsche can once again get rid of the sluggish economic situation at a critical moment.

The savvy Porsche family has set their sights on the public. In early October 2008, a good news came to Stuttgart: As a result of its participation in Volkswagen, Porsche's profit in 2008 will exceed sales! Porsche has increased its shareholding in Volkswagen one after another, making its stock price record highs. At this time, the stock price has reached 275 euros per share, which is far higher than the average stock price of Porsche's purchases in batches. According to Credit Suisse, Porsche's pre-tax profit reached 11 billion euros in the first half of 2008, which has exceeded sales of 8.6 billion euros during the same period. The revaluation of Volkswagen shares increased its pre-tax profit by 5.9 billion EUR.

On October 24, Porsche's share in Volkswagen has reached 42.6% and an additional 31.5% of options. Immediately afterwards, on October 26, Porsche released an amazing news: the plan to increase its holdings of Volkswagen shares by more than 50% before the end of 2008 will not change. If the economic environment permits, it will increase its holdings of Volkswagen shares to 75% at the end of 2008.

The German stock market is panicked. Judging by many hedge funds shorting Volkswagen stocks, it is impossible for Porsche to increase its holdings by as much as 75%. In recent months, Porsche has also hinted that it will stop increasing its holdings. However, Porsche used complex financial tools to secretly increase its holdings step by step in accordance with the rhythm carefully designed by Wolfgang and Weidekin. When they made the news public, Volkswagen's stock price was already at a high level.

Hedge funds have no choice but to panic buying public stocks, buying at high prices to close their short positions. Such a frenzied purchase caused Volkswagen’ s stock price to jump like a rocket. On October 27, Volkswagen’ s stock price soared by 147%, and the next day it rose by 82% to 945 Euros, and even jumped to 1005 Euros. At this price, Volkswagen surpassed it in one fell swoop. Exxon Mobil became the world's largest company by market value.

However, the global financial crisis of 2008 has spread to the automotive industry, and Porsche's sales have fallen sharply, especially in the most important sales market-the

United States. The outlook is even more miserable. The impact of shorting Volkswagen on Porsche is enough to reduce Porsche's crazy offensive. In November 2008, Weidekin reluctantly announced that Porsche' s plan to increase its stake in Volkswagen by more than 50% would be postponed from the end of 2008 to the beginning of 2009.

At this time, Volkswagen relied on its steady tactics and superb cost control techniques to obtain a profit of more than 4 billion euros in 2008. While GM, Toyota, Ford and others fell sharply, it reached the second place in the world.

As Piëch had expected, Wolfgang, who was determined to win in the past, encountered Waterloo, and Porsche, which was advancing all the way, fell into the quagmire of financial crisis at this time.

After a series of operations by the Volkswagen Group, on August 13, 2009, Volkswagen and Porsche reached a comprehensive agreement on the merger. By the end of 2009, Volkswagen will spend about 3.3 billion euros to acquire 42% of Porsche. The two parties will merge into a new automobile group with an annual output of 6.4 million vehicles and more than 400,000 employees

Volkswagen said that the full integration of Volkswagen-Porsche is expected to save 700 million euros per year, eliminate Porsche's remaining debt, and increase Volkswagen's annual profit by more than 9 billion euros and reduce 7 billion euros in net liquidity.

In 2012, Volkswagen officially completed the acquisition of Porsche. History has proved that the acquisition event is not a shame to Porsche as a loser. On the contrary, it is precisely a historical opportunity.

[**Fig3.9**] **Porsche stock price that completed the acquisition in 2012**

After the completion of the acquisition in 2012, Porsche was not as downhearted as a loser as everyone had imagined. In the following four years, Porsche's stock price has

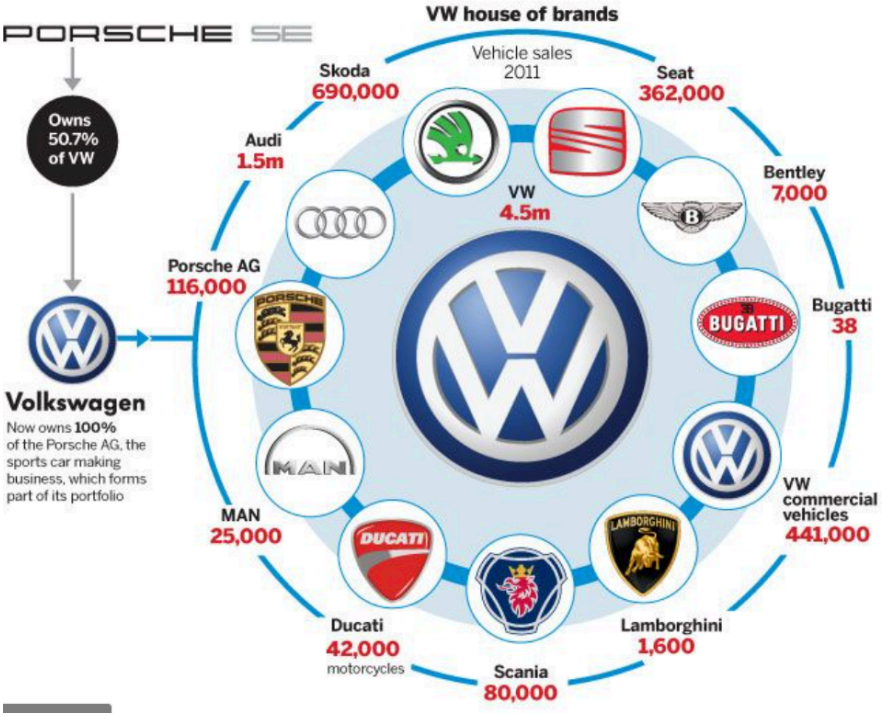
soared, and its market value has doubled several times.

For the Volkswagen Group, the acquisition event is naturally a very good event. After obtaining Porsche's blessing, Volkswagen's market share has further increased, and it is even more like a fish in the water in the financial market. In the figure, we can see that after the completion of the acquisition in 2012, the stock price has soared, step by step, returning to the level before the 2008 financial crisis.

[Fig3.10] Stock price of Volkswagen after acquired Porsche

All this is naturally indispensable to the credit of the Volkswagen Group think tank, after the acquisition. Volkswagen began to rectify the overall framework of the group, and Volkswagen’ s consistent cost-cutting methods were applied to Porsche products. For example, for some models, Porsche’ s Macan and Volkswagen’ s Audi Q5 share the same platform, Porsche’ s Cayenne and Audi’ s Q7, and Volkswagen’ s Touareg share the same platform. These operations not only greatly reduce the development of Porsche and Volkswagen models. Capital, and has greatly enriched the product line of the Volkswagen Group. Volkswagen’ s global number one plan does not have to wait until 2018.

At this point, a generation of heroes Porsche has become a wholly-owned subsidiary of Volkswagen. Volkswagen's brand map has been updated again.



[Fig3.11] **Volkswagen product map**

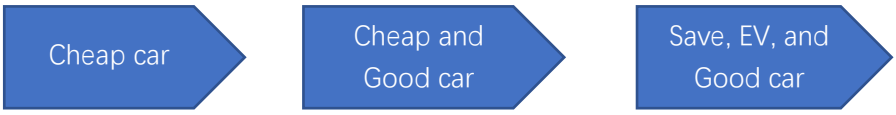
2.2 Volvo and China Geely

Another classic business case occurred in a multinational group. The famous Swedish car company Volvo was acquired by the Chinese car company Geely.

Geely has always hoped to acquire a relatively high-end Volvo. Because Geely's strength is very different from Volvo and the external conditions are immature, Geely does not have a good opportunity to acquire Volvo. The spread of the international financial crisis in 2008 had an unprecedented impact on the auto industry, and all three major US auto companies encountered operating difficulties. In this context, Chinese auto companies have obtained the opportunity to buy bottoms, and Geely' s motivation to acquire Volvo has become increasingly strong.

As Geely develops and grows in the automotive industry, its corporate strategy must continue to evolve. Geely's development in China from small to large, from weak to strong, is inseparable from Geely's development of appropriate development strategies in keeping with the times. In the early days of its establishment, if Geely, as a private enterprise, wants to survive market competition, it must control costs, use cost advantages to occupy the market, and manufacture high-quality and low-cost cars. Therefore, the strategy is to "make cars affordable for ordinary people." Although the low-cost strategy has enabled Geely to gain a firm foothold in the industry and obtain a certain amount of profit, the brand is low in quality, leaving consumers with a brand image of "quality, low price" and unable to enter the mid-to-high-end automotive market. In order to enhance Geely's core competitiveness and achieve a higher market position, Geely has embarked on a difficult strategic transformation. In 2007, Geely

established a brand-new corporate strategy, which is to "make the safest, most environmentally friendly, and energy-efficient cars, so that Geely cars can travel all over the world." As shown in Figure 3.2. The new strategy has pointed out the development direction for Geely, and also raised greater challenges. The core competitiveness of auto companies is the combination of technology, brand and market, and only the three can be in a leading position in the industry. Geely has only entered the automotive industry for more than ten years. The company's background is not deep enough, the technical reserves are insufficient, the brand influence is weak, and the market share is small. Geely needs to spend a lot of time and financial resources if it wants to quickly improve its competitive position. It is not enough to rely solely on its own accumulation. It must learn from the development experience of other advanced companies and acquire advanced companies to achieve its own rapid growth.



Technical level is the main factor that determines the quality of automobiles. China's automobile industry has insufficient independent innovation capabilities and limited technical reserves. The improvement of automobile technology requires continuous investment in a large amount of time and financial resources. Geely's corporate heritage is not deep enough, and Geely wants to improve quickly Competitive position, relying solely on own accumulation is not enough, advanced core production technology needs to be imported from the outside, through the merger and acquisition of Volvo can embark on a shortcut to technology acquisition. Geely's acquisition of Volvo is precisely because it values Volvo's abundant automotive technology and patent reserves, as well as a complete quality control system. Since its establishment, Volvo Cars has always paid attention to the safety performance of automobiles and the impact on the environment. Its products are reliable and durable, and the materials used in production are environmentally friendly. The active and passive safety configuration of Volvo Cars is absolutely leading in the automotive industry and is known as the safest car in the world. Its "automatic braking system", "blind spot information system", "driving fatigue warning system" and other safety technologies are in a leading position in the world. Volvo is also strong in technology research and development in terms of low-carbon and environmental protection. It has three types of engines that can meet Euro VI and Euro VII vehicle exhaust emission standards. In recent years, new energy vehicles have become the development trend of the world's automotive industry. Volvo has invested a lot of money in the research and development of new energy vehicles and launched hybrid vehicle projects. The acquisition of Volvo can help Geely enter the field of new energy vehicles first and seize the commanding heights of future automobile competition. Volvo also has more than 4,000 high-quality R&D talents, which can help Geely build a strong R&D and innovation team and improve its independent R&D capabilities.

In terms of brand value, it is not feasible for Geely to hit the high-end market. The acquisition of Volvo, which is already a high-end brand, can enable Geely to "cut the path" and avoid the risk of failure in creating a new brand. The acquisition of Volvo can enrich the product line and make up for the lack of Geely's brand in the high-end market. The M&A event itself is a brand communication process. The "snake swallowing elephant" sensational effect can attract the attention of the world media. The brand becomes a well-known "star", which is conducive to enhancing Geely's low-end brand image

In terms of market share, as early as 2003, the first batch of Geely cars were exported overseas, achieving a "zero breakthrough" in Geely car exports. However, Geely's exports have always accounted for a small proportion of total sales. In 2009, exports accounted for only about 5% of total annual sales. Geely' s weak export growth is not only related to its products, but also to Geely' s fewer sales networks abroad. As a well-known multinational brand, Volvo has a relatively broad overseas sales network, with more than 2,500 dealers in more than 100 countries around the world. Therefore, the acquisition of Volvo can rely on Volvo' s original overseas sales network to quickly open up the international market for Geely and expand Market share in foreign markets. Moreover, in the context of the financial crisis, trade protectionism in countries around the world has increased, and various trade barriers have been set up, such as the requirements for energy conservation and emission reduction. Geely's low technical level cannot meet the standards, which has hindered Geely's entry into the international market. Geely's acquisition of Volvo not only obtained technology, but also obtained Volvo's ready-made sales channels in various countries, which is conducive to bypassing trade barriers, reducing tariffs, and achieving breakthroughs in overseas markets.

In addition, the Swedish government and the Chinese government have always cooperated closely, and even gave Geely Group great support in the acquisition of Volvo.

With so many favorable conditions, have Geely and Volvo really changed after the merger? The answer is Yes.

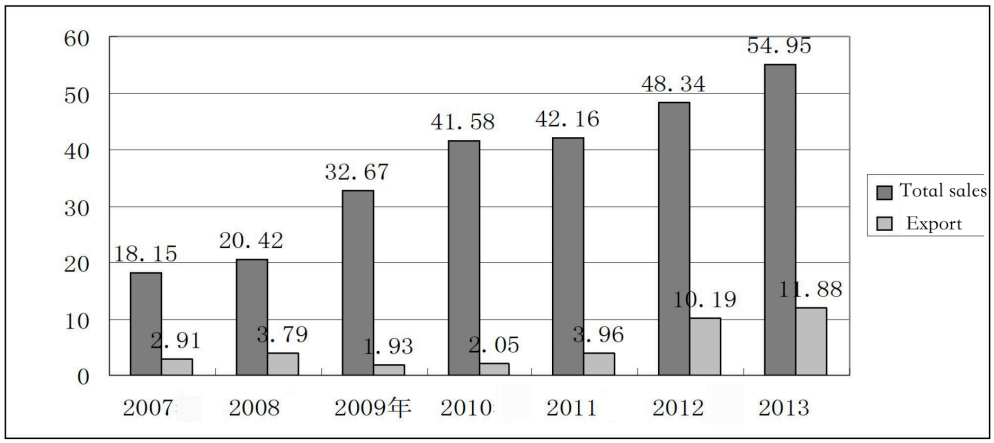
[Fig3.12] **Geely Group's 2009-2013 share price**

First of all, after the acquisition, Geely Group, which has received good news, has seen great stock market conditions and its stock prices have risen continuously. But this is not false financial information. It is accompanied by real production and sales data.

The total sales and export volume of Geely Auto from 2007 to 2013 are shown in Figure [3.13]. After the acquisition, the sales volume of Geely Auto has shown a trend of rising year after year, which shows that M&A has significantly promoted Geely's sales volume. In the first year after the merger, Geely Automobile's sales reached 415,800, a year-on-year growth rate of 27.28%. In 2012, Geely Automobile's sales increased to 483,400, a year-on-year growth rate of 14.65%. In 2013, the sales volume was 549,500. Vehicles, an increase of 13.67% year-on-year. The data shows that Geely's sales in the first three years after mergers and acquisitions have increased to varying degrees, and mergers and acquisitions have a significant role in promoting sales. There are many reasons for Geely's sales growth after the merger. First of all, the acquisition of "Snake eats Elephant" has attracted worldwide attention. Geely has changed from an obscure brand to a well-known "star". It has a huge advertising effect on Geely, which directly promotes Geely. Sales growth. More importantly, Geely' s asset scale after the merger has increased significantly. Geely has adopted Volvo' s automation and modular production experience, which has produced operating synergy and improved Geely' s production efficiency. As a result, Geely' s production capacity has grown rapidly. Geely' s production capacity in Ukraine, The successive investment and construction of factories in Belarus and other countries is a clear proof.

As shown in Figure [3.13], mergers and acquisitions have promoted a substantial increase in the export volume of Geely Automobiles. Export sales increased from 19,300 vehicles in 2009 to 118,800 vehicles in 2013. The absolute number of exports has soared from 2010 to 2013. The export volumes were 20,500, 39,600, 101,900, and 118,800, respectively, with year-on-year growth rates of 6.22%, 92.65%, 157.34%, and 16.58%. In

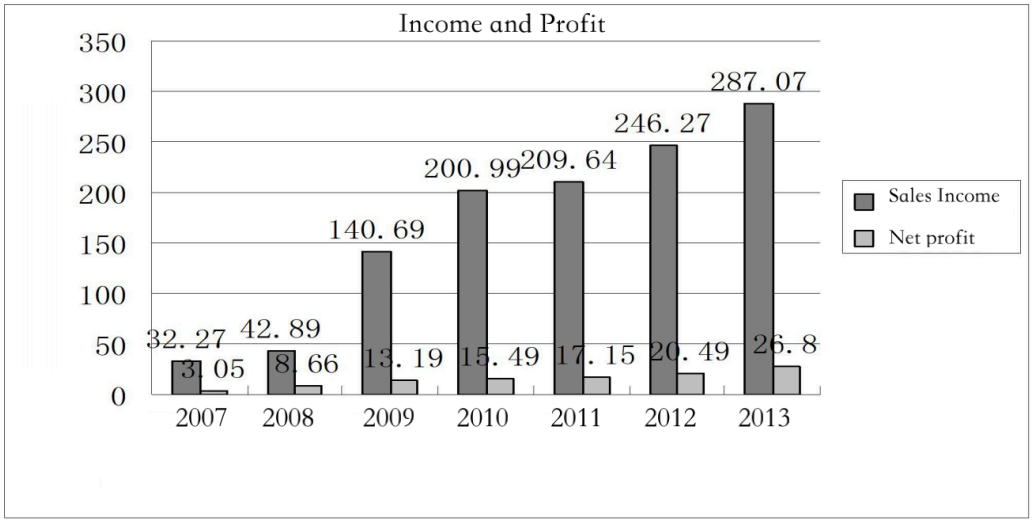
particular, the export volume in 2012 increased by 157.34% year-on-year, which shows that Geely has performed outstandingly in foreign markets after mergers and acquisitions, and its market share has increased significantly, which has enhanced Geely's international reputation. Mergers and acquisitions have a good role in promoting Geely's expansion of the international market. After the merger, Geely took advantage of Volvo's overseas sales network and relied on Volvo's good reputation in the local market to quickly enter new markets that it had not been involved in before, reducing the risks and costs of entering new markets. Geely' s overseas expansion has accelerated, and it has actively entered emerging markets such as Asia, Africa and Latin America, and its brand recognition overseas has also increased rapidly. In 2013, its export volume soared to 118.8 million vehicles, accounting for 21.6% of total sales. In addition to direct export, Geely Automobile also cooperates with local companies to assemble models for export in Russia, Ukraine, Egypt, Uruguay, Ethiopia and other countries through joint ventures or contract production arrangements. By 2013, Geely Automobile will export and sell cars through more than 520 sales and service outlets in 40 countries. This shows that Geely's motivation to expand its international market share through the acquisition of Volvo has basically been realized.



[**Fig3.13**] **Geely Auto Sales and Export Value**

Geely's net profit growth before M&A was slow. In 2010, the year-on-year growth rate of net profit in the year of M&A was only 17%. In the three years after the acquisition, Geely's net profit maintained a rapid growth trend, and the year-on-year growth rate was greater than that before the acquisition. The year-on-year growth rate of net profit in 2012 was 19.5%, and the year-on-year growth rate of net profit in 2013 was 30.8%. These data show that the acquisition of Volvo can effectively improve Geely's sales performance, especially the net profit growth rate after the acquisition is significantly higher than that before the acquisition. After the merger, sales revenue and sales costs have both increased, but sales revenue has increased significantly, while sales costs have increased less. The larger sales revenue minus the smaller sales costs will get a larger net profit, and thus overall Net profit is increasing year by year. This is because Geely' s total production and sales have increased after the merger and acquisition, and under the conditions of this production scale, the fixed cost of production is unchanged, and the fixed cost allocated to the unit product is reduced. Variable costs have also been

reduced, so the cost of sales per unit product has been greatly reduced, and net profit has increased significantly year-on-year. This shows that mergers and acquisitions have expanded the scale and reduced Geely's production costs, and Geely has achieved economies of scale.



[Fig3.14] **2007-2013 Geely Auto Sales Revenue and Net Profit Change Chart**

After the merger, Volvo got rid of the economic embarrassment. In the financial market, Volvo gained a new life.

[Fig3.15] **Volvo Cars share price after the merger**

It is worth noting that Geely retained Volvo's European factories after the merger. This move is conducive to maintaining the stability of Volvo Cars. Geely is also accelerating the promotion of Volvo's establishment of production bases in China, which can not only take advantage of China's cheap labor and reduce Volvo's manufacturing costs, but also share the supply platform of auto parts with Volvo, thereby exerting operational synergies. Geely can learn from Volvo’ s existing strict quality management system during Volvo’ s production process to ensure that the quality of Volvo

produced in China is at the same level as that of imported Volvo. Only in this way will the quality of Volvo not be reduced. Geely can obtain high-standard production from it. Management synergies. When Geely develops new markets in the future, it can also adopt this management model to help improve the quality of its products. This kind of cross-border business development idea is conducive to increasing Geely's market share and is also in line with Geely's globalization strategy.

2.3 Fiat and Chrysler

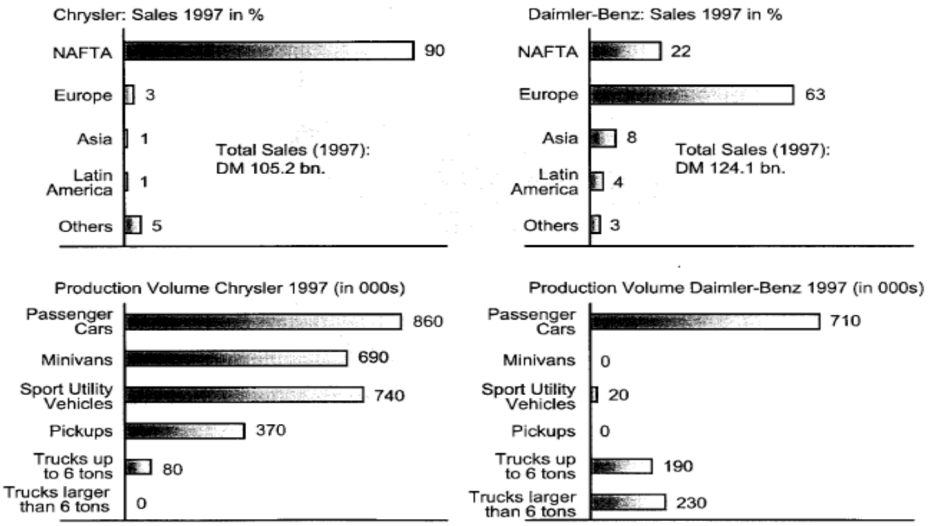
The combination of Fiat and Chrysler, like the German Volkswagen Group's acquisition of Audi many years ago, is a grand gamble. Before narrating this matter, I have to talk about Chrysler's old club-Daimler Benz.

As one of Germany's most famous automobile manufacturers, Daimler-Benz is a global leader in technological innovation, transportation products, and the system services it provides. As an old German car manufacturer, Europe has always been a core market for Daimler-Benz.

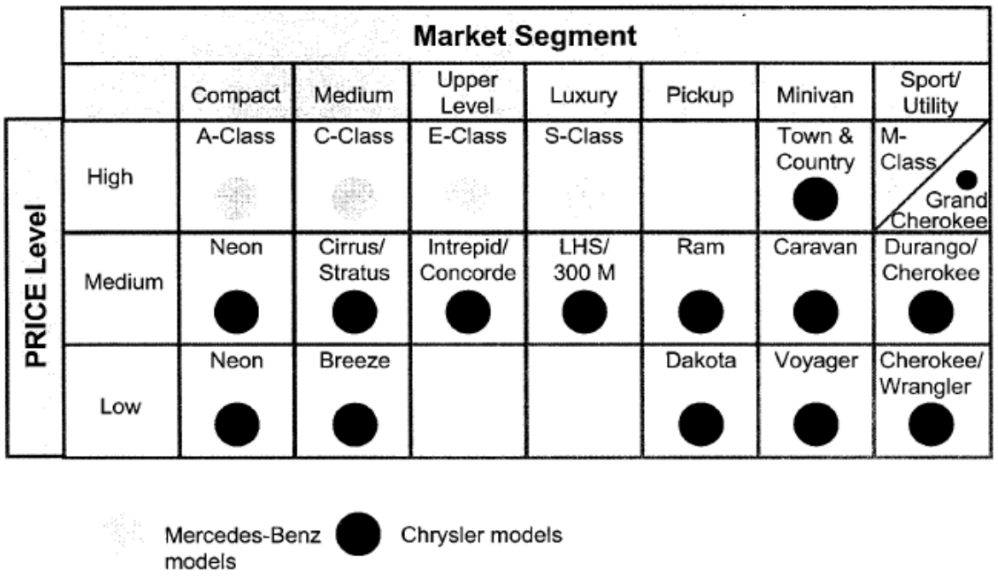
The Big Three in the U.S. automobile manufacturing industry, composed of Ford, General Motors and Chrysler, have always been synonymous with the U.S. auto industry. Among them, Chrysler is the most profitable company. Its high profit mainly comes from the great success of light trucks, trucks, pickup trucks and buses in the mass market. As the main market for Chrysler’ s products, in 1997 Chrysler’ s North American market accounted for approximately 90% of its total revenue.

In the context of globalization and integration, the rise of emerging markets has brought about new growth points, but at the same time the rise of emerging economies has also brought fiercer market competition. After decades of development, veteran automobile manufacturers also urgently need to adjust their internal operating efficiency to maintain high competitiveness. Daimler-Benz and Chrysler have also been actively looking for ways to improve their competitiveness. After several meetings between Daimler-Benz CEO Schremp and Chrysler Automobiles CEO Eaton, the two companies decided to merge on May 7, 1998. The combined company will become the world's fifth largest automaker, with a total of 428,000 employees, and the combined annual revenue will reach an astonishing US$132 billion.

Since its inception, Daimler-Benz has been known for its outstanding product quality, innovation and exclusivity. Chrysler is based on its size, decision-making and flexibility as its main competitiveness. The equal merger between Daimler-Benz and Chrysler is considered to be the combination with the best prospects, which will enable the two companies to gain advantages and capabilities for mutual improvement. In addition, the merger of the two companies has brought both parties a brand new market and opportunities for more diversified development (as shown in Figure 3.16 and Figure 3.17). At the same time, before the merger, both parties hoped to cut costs and eliminate excess capacity through integration to improve business efficiency.



[Fig3.16] Daimler and Chrysler's production and sales classification



[Fig3.17] Market segments of Daimler and Chrysler

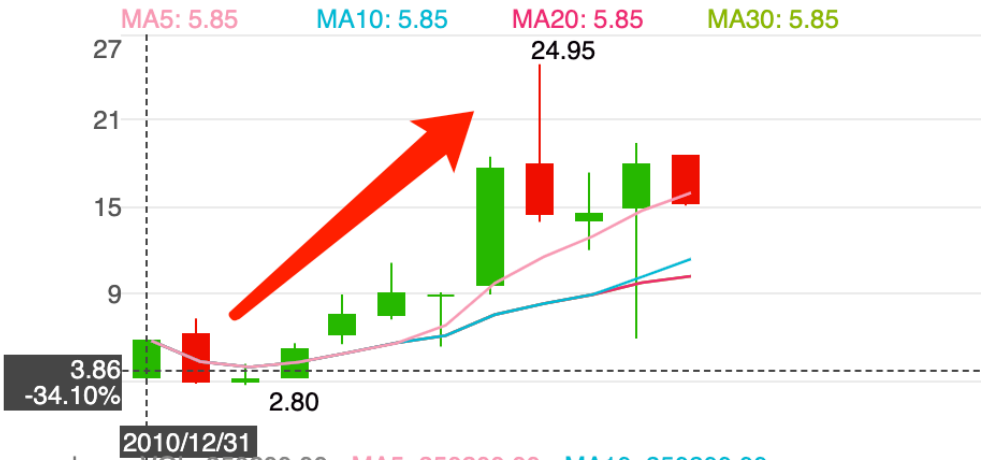
Before the merger, both companies had outstanding performance in their dominant markets. Among them, it is worth noting that Chrysler's revenue and market share increased significantly in 1997, which directly caused its operating costs to drop by 2.8%. But after the merger of the two giants in the auto industry, the company's overall performance began to fluctuate. After the merger, thanks to Chrysler's strong sales channels in North America, the sales of Mercedes-Benz have gradually increased. In contrast, Chrysler's product sales fell by about 10% in 2001. In addition, the poor market performance of Chrysler's many factories directly led to the company's reorganization of assets in lower production efficiency segments. Approximately 26,000 employees were laid off and six US factories were forced to close. However, Chrysler's sales continued to show a gradual decline after 2001.

From 1997 to 1998, Daimler-Chrysler's revenue increased by 16%. In the first two years after the merger, the company's net profit increased from 4.82 billion euros to 7.89 billion euros. But in 2001, the company had a huge loss of 620 million euros. Since then, its profits have experienced drastic fluctuations in the following years. The gradual deterioration of Chrysler's performance puts Daimler on a serious burden. The profit of Mercedes-Benz dropped from 780 million euros in 2003 to 20 million euros in 2004. The BBC report shows that DaimlerChrysler had a huge loss of up to 950 million euros in the first quarter of 2005.

On July 3, 2007, with the approval of the European Union, Daimler-Chrysler sold 80.1% of its Chrysler Corporation to Cerberus Capital Management for US$7.4 billion. July 2007 On the 5th, the transaction agreement was reached, and Thurborough Capital Management invested US$6.05 billion in Chrysler and its financial services business, and paid the remaining US$1.35 billion to Daimler-Chrysler. At this point, the nine-year "marriage" between Daimler and Chrysler has come to an end.

In 2009, despite a series of unfavorable predictions, the Italians bought Chrysler. They used their own technology to give the newly purchased US subsidiary a new life. In the end, the Italians occupied 58.5% of the majority of the subsidiary. The National Federation of Auto Workers (UAW) holds the remaining shares of Chrysler. In a sense, this is a gift given by the country to thank it for its rescue when Chrysler filed for bankruptcy.

At this time Fiat chose to take a gamble. Facts have proved that Chrysler is destined to be with Fiat. In April 2009, Chrysler and Fiat announced the formation of a strategic alliance in April 2009. In September of the same year, Fiat acquired 20% of Chrysler's equity, and this number may reach 51%. Let us look at a set of data. First of all, from a long-term perspective, the stock prices of Fiat and Chrysler in the financial market have generally shown a sharp upward trend since 2010.



[Fig3.18] Fiat and Chrysler share prices

The following is a ranking of the manufacturing capacity of global automakers in 2009

No.	Brand	Amount(unit)
1	TOYOTA	7234439
2	GE	6459053
3	Volkswagen	6067208
4	Ford	4685394
9	Fiat	2460222
12	Daimler	1447953
16	Chrysler	959070

[**Fig3.19**] **Manufacturing capabilities of major manufacturers**

A strategic alliance is good for both: For Chrysler, during the period 2008-2009, due to the global financial crisis, cost issues in the auto industry, high oil prices and the recession of the U.S. economy, Chrysler had a huge impact, especially in 2009. In May of 2005, Chrysler was in a terrible situation such as a large-scale financial crisis, a rapid decline in market share, and a decline in the global automotive industry. The strategic alliance with Fiat enabled Chrysler to survive this crisis and to have Fiat' s ready-made sales network in the European market, so the alliance is meaningful for Chrysler. For Fiat, it will help it exchange technology with Chrysler, share contracts, and have a distribution network in the European and North American markets. Fiat is famous in Europe for its "small car" manufacturing model, but it is not well-known in the North American market, and its gradual development model and survival model have encountered technical and quality standards problems. Its alliance with Chrysler will help it enter the already active North American market, realize technology exchange and resource sharing, and help it improve its development model and survival model.

After Chrysler was acquired, all of Chrysler's small-displacement models began to use Fiat's Tiger Shark engines, which successfully solved the problem of unreliable small-displacement engines. At the same time, the introduction of a large number of Fiat models was of great help to Chrysler. Chrysler can focus on medium and large cars, while Fiat's small cars are the most complementary and have strong complementary capabilities.

In addition, after the completion of the acquisition, Europe ushered in an economic crisis, and Italy and other countries fell into debt problems. Fiat was facing a decline in sales in the European market on the one hand, and on the other hand, it had to face high taxes from its own government, making it difficult. But at this time Chrysler was selling better and better in the North American market (as of September 2014, Chrysler's monthly sales in North America had surpassed Toyota), which made up for Fiat's frenzy in Europe.

Looking at it now, Fiat originally acquired the high-quality asset of Chrysler at a very low price. But if there was no support and capital injection from Fiat, Chrysler might have fallen. Fiat retains the integrity of Chrysler (without splitting Chrysler, Dodge, Jeep), and

at the same time gives financial and technical assistance. If it is replaced by another car manufacturer, it may now be Chrysler only has the Jeep brand. History has proved that the combination of Fiat and Chrysler is undoubtedly a very successful merger case in the history of automobiles.

2.4 Fiat Chrysler and Peugeot Citroen

In 2021, the largest merger in the automotive industry occurred between Fiat Chrysler and Peugeot Citroen, with a combined amount of 43.7 billion euros. The new company is called STELLANTIS. And will issue new stocks on stock exchanges such as Milan, New York, London, etc[**Fig3.20**]

[**Fig3.20**] **The image of STELLANTIS**

After 2021, there are four major automakers in the world. They are Volkswagen, Toyota, Renault-Nissan Alliance and the aforementioned SETLLANTIS. Now, let us analyze this case.

First of all, Fiat-Chrysler, as mentioned above, Fiat' s development history, and Fiat' s acquisition of Chrysler' s high-quality asset at a very low price, the interaction between the two has achieved success in the automotive market and has achieved automotive mergers. The most dazzling scene in history.

The company that merged with FCA, PSA Peugeot Citroen Group (PSA), has four major automobile brands under its flag, Citroen, DS, and Opel. PSG is Europe's second largest car manufacturer after Volkswagen in Germany. In 1976, after Mark completed the acquisition of the remaining 60% equity of Citroen, it is interesting that two years later, the group acquired Chrysler's European company. It seems that this foreshadows that Fiat and Logo Group are going to merge. As of 2019, PSA Group' s global car sales reached 3.5 million, revenue 74.7 billion euros, a year-on-year increase of 1%, and a profit margin of 8.5%.[**Fig3.21**]

[Fig3.21] FCA and PSA

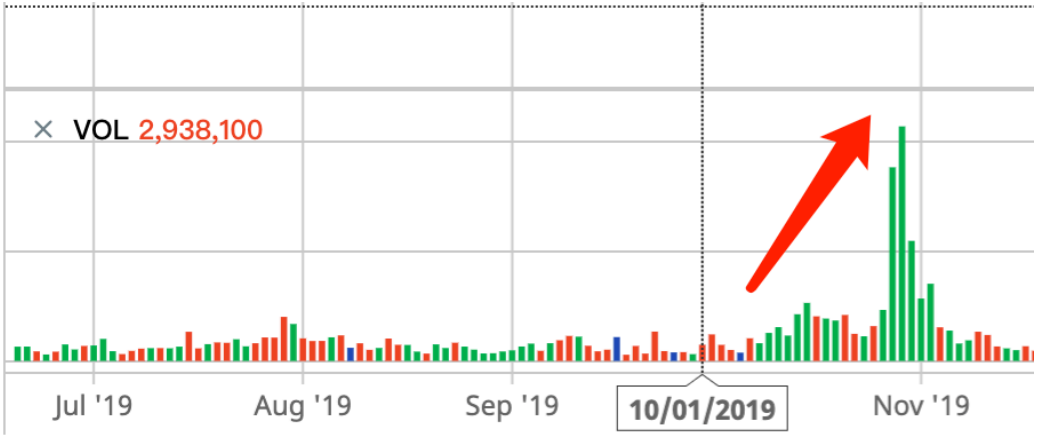
In the financial market, we can see that before the merger, PSA Group' s stock market prices are quite worrying. As the second largest automaker in Europe, in 2019, although the overall situation of PSA is still good from the perspective of operating income, the overall performance of PSA Group is still not optimistic from the perspective of sales. According to statistics, the cumulative sales of PSA Group in the third quarter were 674,000, a year-on-year decrease of 4%. Among them, the European market, which accounted for the largest sales volume, fell 2.7% year-on-year, with sales of 569,000; while sales in China and Southeast Asia were 29,000, a drop of 40.1%. The downward trend is still very obvious.[**Fig.3.22**]

[Fig.3.22] Stock price reaction befor the merge

After the Merger

After the merger, STELLANTIS showed the expected results:

First of all, in October 2019, after Fiat and PSA announced a merger notice, Fiat’ s financial trading market saw a scene of trading prosperity. [**Fig.3.23**]



[**Fig.3.23**] **Fiat share price changes when it announces its merger with PSA**

According to the first round of financial reports released by STELLANTIS in March, as of December 31, 2020, FCA Group's EBIT was 3.7 billion euros, with a profit margin of 4.3%, and adjusted EBIT of 1.9 billion euros. Its industrial free Cash flow reached 600 million euros.

Among them, in the fourth quarter, FCA achieved record-breaking performance. The EBIT and adjusted EBIT reached 2.3 billion euros and 2.2 billion euros, with profit margins of 8.2% and 11.6%. All regions and Maserati achieved profitability. Industrial free cash flow reached 3.9 billion euros.

PAS Group's adjusted EBIT reached 3.4 billion euros, with a profit margin of 7.1%, and reached a new high in the second half of 2020, reaching 9.4%. In the financial stock market, since the merger in 2019, the stock price has risen all the way. This is undoubtedly a great news for the STELLANTIS Group.[**Fig.3.24**]

[Fig.3.24] **Stock price reaction after the merge**

After January 2021, when STELLANTIS was listed on stock exchanges such as Milan and London, the stock price also rose sharply. [**Fig.3.25**]

[Fig.3.25] **STELLANTIS stock price changes at the time of listing**

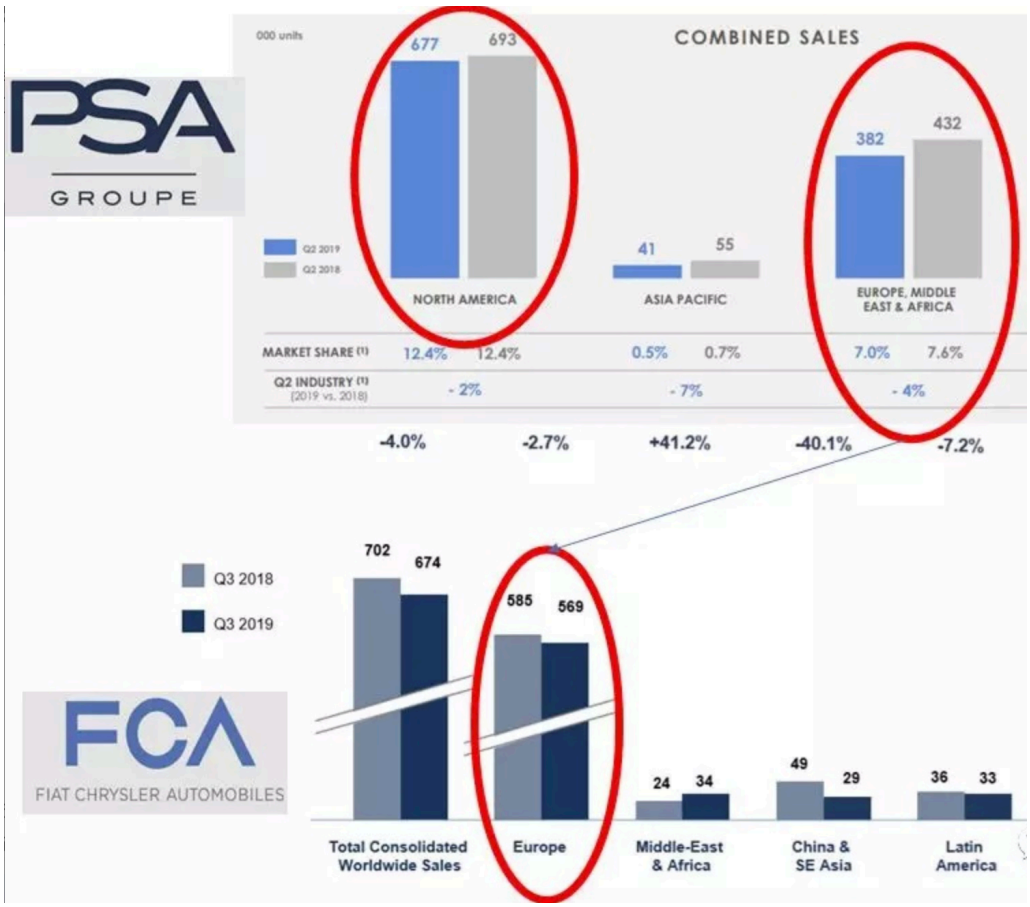
The above data shows that even if the two companies are affected by COVID-19 in

2020, the two companies will still achieve excellent financial performance. It also reflects that STELLANTIS has combined the strong strength of the two companies and demonstrated a stable financial situation. According to Carlos Tavares, CEO of STELLANTIS, all brands under STELLANTIS will be given the opportunity to rebound and set a goal for 2021 to achieve an adjusted operating profit margin of 5.5%-7.5%.

On the one hand, the merger of the two can make full use of the advantages of their respective main battlefields and models to achieve complementary effects. FCA relies on the JEEP brand to achieve outstanding results in SUVs and is very competitive in the North American and Latin American markets. PSA business is mainly concentrated in the European region. Compared with cars, PSA has not achieved much in the SUV field and lacks the ability to compete in the global market. The best-selling main model.

From a business perspective, the merged company can shut down or transfer some repetitive businesses to jointly deal with the next European carbon emission standard management. In the process of integrating Opel, Carlos Tavares took a ruthless hand. The way to adjust personnel during the merger was realized: the average capacity utilization rate of the assembly plant of the Peugeot Citroen Group was about 75%, and the capacity utilization rate of 4 of the 14 factories Even >100%. If similar operations can be repeated, it is an improvement for FCA.

The two investments in electrification were completely unable to keep up before the merger. After integration and reorganization, STELLANTIS can relatively effectively face the challenges of European business: in order to promote the reduction of greenhouse gas emissions, the EU issued a series of Strategic measures and goals for reducing greenhouse gas emissions and realizing a low-carbon economy. In this sense, if no changes are made, European car companies may face a fine of up to 34 billion euros.[**Fig.3.26**]



[**Fig.3.26**] **Combined sales of PSA and FCA in Q2 (2018) and Q3 (2019) quarters**

According to the financial report, in the first half of this year, STELLANTIS Group's net revenue reached 75.3 billion euros, an increase of 46%; adjusted operating profit was 8.6 billion euros, with a profit margin of 11.4%. From a regional perspective, STELLANTIS Group's profitability in North America has set a record, with a profit margin of 16.1%.

In the European market, STELLANTIS Group's overall market share in 30 European countries has increased to 23.1%, and its market share in the light commercial vehicle market has reached 34.4%. In terms of brands, the Peugeot brand's overall market share in 30 European countries in the first half of the year was 7.1%, ranking second.

South America is also the traditional advantage market of STELLANTIS Group. In the first half of this year, STELLANTIS Group's market share in South America reached 23.6%, and its market share in the Middle East and Africa also reached 11.9%. Although in China, India and the Asia-Pacific market, STELLANTIS Group's shipments including local joint ventures are only 102,000 units, and the growth rate is slow. However, as the strategic layout of STELLANTIS extends to the Asia-Pacific region, I believe that in the near future, the Asia-Pacific region It is possible to submit a satisfactory answer sheet.

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Chapter 4 —— Future Industrial Pattern

1. Industry inspiration

The automobile industry has experienced many industrial revolutions. Judging from the long course of development, mergers are indeed a way of development that is not a company. The pursuit of large-scale scientific production is no longer just a simple merger of large companies and small companies. The impact of the company's merger is far-reaching. With the popularization of the concept of new energy vehicles, electric vehicles are the first to be put into mass production. Coupled with the introduction of environmental protection policies in various countries, the popularity of electric vehicles in the future is no longer a question. The 2019/631 document of the European Parliament in April 2019 pointed out that before the next 2030, the proportion of EV+PHEV models will reach 35%. Germany's "2030 Climate Plan" proposes to register at least 7 million electric vehicles by 2030. Even Germany's Audi and BMW companies have issued notices that they will no longer continue to develop internal combustion engines. The era of electric vehicles has come, so what are the changes in the automotive industry?

In the new energy vehicle industry, Tesla is naturally world-famous, and a similar Chinese company is BYD. Before analyzing these two cases, I want to describe a special case-Volkswagen Group.

Why is it called Volkswagen a special case? It is because Volkswagen has a special presence in the field of new energy vehicles. It is a representative of the transformation of a traditional automobile company in the field of new energy vehicles.

As we learned in the previous article, Volkswagen's development history is full of various mergers. For this reason, Volkswagen's scientific research, production, and brand capabilities have attracted worldwide attention. Volkswagen is capable of transforming the new energy vehicle market, and it is fully capable

According to Volkswagen’ s estimates, by 2025, Volkswagen’ s annual battery demand in Europe and Asia is expected to exceed 150GWh; by 2030, Volkswagen’ s pure electric models will account for 60% of all group models. By then, Volkswagen’ s European market’ s Battery demand will reach 240 GWh/year

To this end, Volkswagen has begun to plan ahead. It plans to establish 6 battery plants in Europe by 2030 to meet the demand of 240 GWh.

At the Battery Day site, Volkswagen announced that it will launch Unified Battery (unified battery) technology in 2023, which can achieve large-scale production, thereby reducing battery production costs, and the new battery can be recycled and reused as high as 95%. [**Fig.4.1**]

[**Fig.4.1**] **Volkswagen's battery technology**

Volkswagen emphasized that by 2030, batteries produced based on Unified Battery technology will be equipped on more than 80% of the Volkswagen Group's models. With the mass application and recycling of the battery, the cost of battery cells for entry-level models of the Volkswagen Group will be halved, and the cost of battery cells for mass-produced models will be reduced by 30%.

In order to further reduce costs and increase efficiency, Volkswagen will also use CTC (Integrated Electric Chassis) technology. This technology eliminates the need for casting battery packs and integrates the batteries directly into the chassis of the vehicle body, reducing the weight and space of the battery pack, while also increasing the cruising range.

Thanks to the economies of scale, "the price of batteries will be significantly reduced to less than 100 euros per kilowatt-hour, so electric travel will be more economical and dominate," Thomas Schmal said.

In addition, Volkswagen also stated that it will be equipped with solid-state batteries in 2025. By then, it will no longer contain manganese or electrolyte. As the weight of the battery decreases, the charging time will be further shortened, and the time required to charge the battery from 10% to 80% will be shortened to 12 minutes.

Prior to this, Volkswagen had achieved initial results in solid-state batteries. In December 2020, Jagdeep Singh, co-founder and CEO of Quantum Scape, Volkswagen's solid-state battery subsidiary, publicly disclosed the company's solid-state battery test results for the first time. He said that the battery solves all the core challenges that plagued solid-state batteries in the past, such as short service life and slow charging speed.

In February 2021, Wedbush analyst Daniel Ives also stated in his research report that it seems that Quantum Scape has made a major breakthrough. "Considering the innovation behind solid-state batteries, this may change the entire industry." Daniel Ives believes that if Quantum Scape can fully charge 80% of the battery in 15 minutes, it may change the rules of the game.

Volkswagen's layout of cars always seems to be one step ahead. New energy vehicles are different from traditional vehicles in that the core component of electric vehicles is the battery. Although car chassis ergonomics are equally important, these technologies are no longer a problem for the Volkswagen Group. The public needs to get involved in the core area-batteries. As early as 2012, Volkswagen Group invested in Quantum Scape and became the largest shareholder of Quantum Scape Group. In the same year, Volkswagen and Quantum Scape announced the establishment of a joint production project to prepare for the mass production of solid-state batteries. In June 2020, Volkswagen invested an additional US$200 million in the company. On September 3, 2020, Quantum Scape announced a merger with Kensington Capital Acquisition, a special purpose acquisition company. As a result of the merger, Quantum Scape will receive $1 billion in financing, including funds from Volkswagen and the Qatar Investment Authority.

In November 2020, Volkswagen announced the latest five-year investment plan, with a total amount of up to 73 billion euros. Among them, the share of electric travel increased to 35 billion euros, digital investment amounted to 27 billion euros, and hybrid power investment amounted to 11 billion euros.

Previous plans showed that by 2029, the Volkswagen Group plans to launch 75 pure electric products, with a cumulative sales target of 26 million vehicles in 10 years. Among them, the sales of MEB platform products are about 20 million, and the sales of PPE platform products are about 6 million.[**Fig.4.2**]

[**Fig.4.2**] **The electric car of Volkswagen**

The layout of the Volkswagen Group does not seem to be inferior in the data, and on the road of transformation, the Volkswagen Group can be said to have taken out all its advantages. Let us wait and see whether it succeeds or not.

2. A leader in the field of new energy vehicles

Volkswagen, who is transitioning to new energy, is a representative of traditional automakers, but we have to mention Tesla, a leader in the field of new energy vehicles.

As a brand new automotive field, readers will have their own guesses at this time. As a representative of electric vehicles, will Tesla also complete its own expansion through mergers between companies?

Let us look at a set of data from 2003 to 2010:

Time(Year)	Events	Type
2003	Tesla Electric Vehicle Company established	Set up
2004	Musk invested	Financing
2005	Signed a production contract with Lotus Motors, and Lotus Motors will provide the chassis for the Roadster.	Collaborative innovation
2007	Roadster is officially released, and Tesla officially becomes a car company	Product release
	Cooperate with Daimler-Benz to develop smart cars	collaborative innovation
2008	Model S is released, the entry model is US$50,000.	Product release
	Daimler acquired a shareholding; received a loan of US$465 million from the US Department of Energy for financing.	Financing
2009	Started to lay out energy business and business development	Business expansion
2010	Completed the IPO, becoming the second U.S. auto company to go public after Ford went public in 1956	Financing
	Acquired NUMMI assembly plant and received investment from Panasonic and Toyota The second additional issuance of shares received 172 million U.S. dollars	Financing

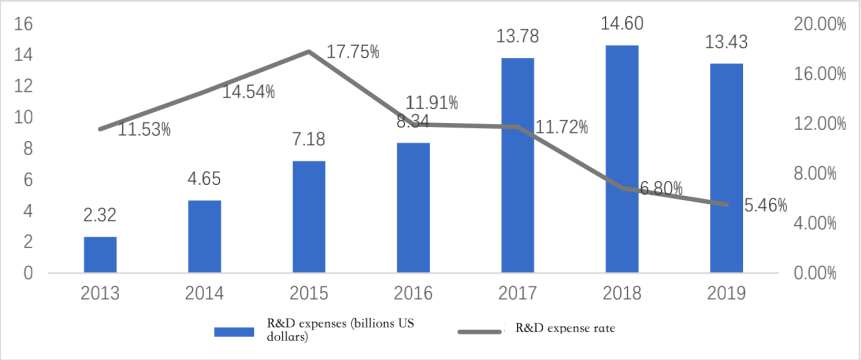
New energy car companies rely on technology and financial support in the development process, and Tesla clearly has its own advantages in financing, self-innovation and collaborative innovation. Because of its huge capital blessing, Tesla can cooperate with Lotus Motors and Daimler-Benz through cooperation and mergers to directly obtain the

world's most advantageous automotive chassis technology and automotive ergonomics technology.

In the ‘internal factor analysis’ of SWOT analysis, there are three factors that enable Tesla to remain successful:

A．Higher R&D expense ratio

In 2019, Tesla's R&D expenses were 1.343 billion U.S. dollars, slightly lower than the level of 2018, down 8.04% year-on-year, but still remained at a relatively high level; the R&D expense ratio was 5.46%, which has a downward trend compared to 2017 and 2018. This is mainly due to the substantial increase in operating income brought about by the Model 3 delivery. It can be seen from Figure 3-6 that Tesla’ s R&D expense rate is very high, basically exceeding 5%, especially in 2015, it even reached 17.75%. The accumulation of early R&D promoted the improvement of later technology, laying the foundation for Tes Pulling a leading position in the global new energy automobile industry[**Fig.4.3**]



[**Fig.4.3**] **Tesla's research and development expenses over the years**

B. Leading electric driving technology

Tesla’ s level of intelligence and autonomous driving technology has taken the lead in the world. Tesla’ s self-developed Autopilot autonomous driving system is one of its core strengths. In addition, Tesla vehicles can also pass OTA (Over -the-Air Technology, air download technology) for software updates and system upgrades, vehicles can be continuously upgraded.

C. Vertically integrated market strategy

Tesla is committed to the vertical integration of the new energy and automotive dual industry chains, and has built a photovoltaic power generation-electric vehicle-clean energy energy storage industry chain, covering from upstream power generation to midstream energy storage, and then to downstream consumption. Through the improvement of the photovoltaic power generation system to ensure the overall conversion efficiency and cost, at the same time, the acquisition of SolarCity in 2016 formally entered the field of solar energy storage. In the automotive industry chain, new models will be launched one after another, and the stored electricity will eventually be used for residential, commercial and public utility power supply, especially for Tesla's new energy vehicle charging.

At present, Tesla has four large super factories and one major automobile factory in the world, supporting the continuous advancement of the business from battery production to vehicle assembly, from electric vehicle manufacturing to solar cell energy storage. However, except for the super factory in Shanghai, China, which is a wholly-owned company, the other three are all through acquisitions and alliances. Among them, the Fremont project of a local American company was acquired by Tesla from GM and Toyota in 2010; the super project in Nevada was jointly constructed by Tesla and Panasonic; the super factory in Berlin, Germany, and Daimler-Benz and other car companies cooperate.

这 The four super factories are expected to provide more than 500,000 vehicles for new energy vehicles around the world.

3. Potential rivals of Tesla

If Tesla’ s strategy is to improve core technological competitiveness and reduce unnecessary expenses and take some mergers and acquisitions, then BYD, a company from China, mainly focuses on mergers and acquisitions, step by step from China to the world.

Unlike Tesla, BYD is mainly engaged in electric operating vehicles, such as the K9 and C6 electric buses sold overseas, and even some engineering vehicles, such as the unmanned electric forklift developed with the Asian engineering giant ST Engineering.

Born in the Chinese market, this is similar to the starting conditions of the Japanese automobile market. BYD technology is not mature enough, and there is not enough brand and technology precipitation. Therefore, BYD has always used strategic alliances to enter the world market. According to the following figure:

Area	Time(year)	Event
American market	2008	Corporate with Berkshire Hathaway Energy
European market	2010	BYD and Daimler jointly funded the establishment of a new company-Shenzhen BYD Daimler New Technology Co., Ltd.
Asia Pacific market	2015	Strategic alliance with ADL, the largest bus manufacturer in the UK
	2016	Strategic cooperation with India Goldstone Infratech Ltd
	2019	Established a pure electric vehicle research and development company in a joint venture with Toyota of Japan

As far as the European market is concerned, BYD and Daimler jointly set up a joint venture company in 2010 to promote the brand with Tengshi as the main brand. This is another typical strategic alliance. In 2015, BYD reached a strategic cooperation with Alexander Dennis Limited (ADL), the largest bus manufacturer in the UK, in which BYD provided power battery technology and ADL provided hard conditions such as factories and funds. As of 2018, the pure electric buses jointly produced by BYD and ADL have a market share of more

than 50% in the UK, and even as high as 90% in London. It is expected to achieve a 100% monopoly in the future.

BYD mainly focuses on export trade in the Asia-Pacific market. However, in 2016 it announced a strategic cooperation with Goldstone Infratech Ltd (GIL), India's largest composite insulator manufacturer, to design and assemble a local version of pure electric buses in India. And in November 2019, BYD announced the establishment of a pure electric vehicle research and development company in a joint venture with Toyota of Japan. It is expected that the new company will be formally established in 2020. The two will share technology and share costs. Continuous breakthroughs in other areas, thus furthering the goal of becoming an international high-level automobile manufacturer.

At the same time, in 2018, BYD introduced Berkshire Hathaway Energy, a world-renowned strategic investor, which was its first attempt to enter a strategic alliance. As of March 31, 2018, the company was BYD's fourth largest shareholder, holding 8.25%. This greatly enhances BYD's position in the capital market, and at the same time, the company's product image and visibility in the global market have also been greatly improved.

BYD has chosen the main model of strategic alliances to strictly differentiate the markets in the Americas, Europe, and Asia-Pacific markets to achieve differentiated deployment of international strategies; while Tesla mainly adopts the "direct management" model through franchising. The form of operation establishes directly operated stores and service centers directly operated and managed by them in the United States, Europe, Asia Pacific and other regions to achieve global business expansion.

In this way, mergers, acquisitions, and alliances are common not only in the traditional automotive industry, but also in the field of new energy vehicles, and are also effective means to achieve economies of scale.

4. Research conclusion

Combining the contents of Chapters 2 and 3 above, we know the universality of mergers and acquisitions in the automotive industry. The major turning points in the business development of large enterprises are basically accomplished through merger events. Combining these data, we can analyze the following three conclusions:

First, from the perspective of corporate finance, successful mergers have seen a significant recovery in the profitability of the merged company in the short or long term. In addition, the merged automobile manufacturers have adopted a series of measures to increase the speed of cash flow and improve the company's ability to repay debts. As a result, the company's ability to resist risks has also been strengthened and financial risks have been reduced. Overall, the financial synergy brought about by mergers and acquisitions has been realized.

Second, from the perspective of corporate management, for example, in the case of Volvo and China Geely Automobile, it is learned that by absorbing Volvo' s senior management talents and learning from Volvo' s advanced management methods, Geely Automobile has reduced management and production costs and improved the overall Geely Group Management efficiency; different from the management model of the old club, under the blessing of Fiat' s management model, Chrysler did not go back to the original path. The operating capabilities of these companies have been significantly enhanced. It can be seen that the merger behavior has enabled these companies to play the role of management synergy.

Third, from the perspective of corporate operations, the merged company, whether it is Volkswagen or Porsche, Fiat or Chrysler, these companies have occupied a larger market share. Secondly, the merged company shares the existing factories and automobile manufacturing platforms of the two brands, as well as high-tech talents in their respective fields. These have also promoted the improvement of the scientific and technological level of automobile groups in various countries. This not only reflects the social value of the company, but also makes Geely cars well known to more people. Enhance the competitiveness of Geely Auto and realize the synergy effect of mergers and acquisitions.

5. Case Enlightenment

Through the above analysis, we found that whether it is Volkswagen Group, Fiat Group, Volvo Group, Tesla Group or BYD, they have all achieved successful mergers and acquisitions, and the synergy of mergers and acquisitions has basically been realized. Before preparing to implement the M&A strategy, it is necessary to have a correct understanding of the company's own development status and whether it has the advantages of implementing M&A. At the same time, through the prediction of future market development trends, it is determined whether the cost of realizing market internationalization is less than the benefits obtained after the merger. In order to improve management efficiency, expand market share, and achieve rapid development goals through mergers and acquisitions, these theories must be applied to practice, combined with the above-mentioned theories and corresponding synergy evaluation indicators to put forward effective suggestions.

a. Choose the right right company to realize M&A

From the perspective of cooperative consumption perception in mergers and acquisitions, before preparing for real-world implementation of mergers and acquisitions strategies, companies should develop the righteous mindset of development: the company is better, and at the same time, it needs to form the actual situation of the company itself, and choose to adapt to it. M&A target. Only in this way can we achieve the development effect of getting twice the result with half the effort, and be able to achieve the goal of rapid integration of purchase activities due to development. Generally, companies have their own unique financial status, market position, management skills, technical level, strategic goals, and companies should combine their own unique circumstances to choose a

merger target. For example, Geely Group chooses to acquire Volvo, which is a comparatively suitable M&A target, as a path to broaden the market and grow stronger. Volvo did not have many disagreements during and after the merger. Even if there were, the two parties could communicate with each other to solve problems quickly.

After completing the first step to determine a suitable acquisition company, the next step is to prepare for negotiations with the target company. Professionals with M&A experience should be organized to actively communicate with the target company and reach agreement on key issues to save time and cost, because during this period the target company may use more channels for price comparison, inquiries or increased bargaining power. Other measures, which will lead to unnecessary cost increase and time wasted in M&A activities.

b. Choose the right financing channel

From the evaluation of the financial synergy of mergers and acquisitions, companies can increase the possibility of successful mergers and acquisitions by choosing a variety of suitable financing channels, while preventing financial risks. By constructing a variety of financing methods, the transaction cost of the internal organization is lower than the transaction cost of the external market, which can improve the performance of mergers and acquisitions.

In view of the specific characteristics of the economic behavior of mergers and acquisitions, equity financing can be used to raise funds, especially in the stock market through common stock financing, which has greater practical value. Companies can take advantage of the perpetual nature of common stock, with no maturity date, and no need to repay the principal. The company can flexibly adjust the dividend ratio and time according to the company's own financial status to ensure the company's liquidity and capital adequacy ratio.

Mergers and acquisitions should establish a multi-dimensional financing concept and cannot raise funds through only one financing method. This is very dangerous and expensive. When financing, it is necessary to broaden financing channels and actively use a variety of financing methods to achieve goals. First of all, in terms of finance, companies should prepare in advance and reserve special financing funds on the premise of not affecting normal operations, so that they can pay M&A expenses in a timely manner. Second, take advantage of the government's policy advantages in supporting technology introduction and market development projects to obtain preferential interest rates and debt repayment periods. Finally, companies should learn from successful overseas mergers and acquisitions and try new financing methods. This can increase the diversity of financing methods and bring capital, but also try new financing methods, accumulate experience, learn different financing methods, and understand the costs of different financing methods. Provide better advice for future mergers and acquisitions.

c. Focus on cultural integration

From the evaluation of the synergy effect of M&A management, it is necessary to pay attention to the cultural integration of the M&A target company to ensure that it will not cause communication barriers due to culture. Differentiation after mergers and acquisitions, realizing the management of merger effects. For example, in the Chrysler case mentioned in this study, Daimler's wrong behavior of ignoring the native American culture not only ruined an excellent merger opportunity, but also lost a lot of money and time costs.

d. Improve human resource management

Although M&A agreements mainly involve legal and financial issues, the most important issue in merger integration is human issues. There are even some mergers and acquisitions for the purpose of obtaining human capital. The rational allocation of human capital and the retention and full utilization of talents determine the effectiveness of corporate mergers and acquisitions.

The key to realizing the synergy of mergers and acquisitions and the operation of the entire enterprise is human manipulation, so the improvement of human resource management is crucial. In the overall human resource system of an enterprise, the most important thing is the quality of the management personnel. Therefore, mergers and acquisitions must focus on the integration of the management team. For example, the Porsche and Volkswagen in this study, due to human factors causing the failure of early acquisitions, which enabled the Volkswagen Group to turn defeat into victory. On the other hand, in the Volvo case, by maintaining the continuity and stability of Volvo's production and operation and workforce, Geely Group can absorb enough management experience to lay the foundation for scientific research cooperation between the two parties and promote the development of Geely Group. In addition, Geely President Li Shufu has set up a special liaison officer to directly listen to the opinions of Volvo's senior management on management and operation, which is conducive to speeding up the integration of the management of both parties. Effective human resource management mechanisms and management integration after successful mergers and acquisitions have greatly improved the performance of corporate mergers and acquisitions.

e. Optimize marketing model

From the perspective of collaborative evaluation of M&A business, the increase in market share is an important aspect of evaluating the improvement of M&A performance. After horizontal mergers and acquisitions, due to the emergence of new products, it is necessary to optimize and upgrade the marketing model, and expand the existing marketing channels based on the characteristics of the existing market. At present, the current characteristics of the automobile consumer market are: high demand, wide and diversified requirements for models and functions, and

value of product prices. Enterprises should fully understand these market characteristics, broaden sales channels, optimize marketing models, and establish marketing models that conform to the laws of the consumer market.

f. Conform to the development trend of the industry

Judging from the synergy evaluation of M&A management, only by conforming to the development trend and history of the industry and making contributions to the entire society can companies develop their business smoothly and sustainably. This is also an important aspect of collaborative evaluation. When an enterprise chooses a target company for mergers and acquisitions, it must not only choose a suitable target for mergers and acquisitions according to its own characteristics, but also choose a target for mergers and acquisitions that conforms to the laws of economic and industry development. On the one hand, the trend of global economic integration is obvious. Facing the gradual saturation of the auto market in European and American countries, there is huge potential in the auto market in the Asia-Pacific region, such as India and China. On the other hand, as mentioned in the case of new energy vehicles, automakers should, like Volkswagen, make early plans for future plans and accumulate technological advantages for the subsequent industry transformation.

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