
THE SOCIOECONOMIC SITUATION SURROUNDING THE AUTOMOBILE INDUSTRY

1 Introduction

Major events scheduled for 2017, including the start of the formal process of British withdrawal from the EU (Brexit) and the inauguration of President Trump, launched the year with constant concern and attention from various fields of endeavor. As a matter of fact, President Trump's many radical remarks and "America First" policy throughout the last year did indeed have both direct and indirect impacts on the automobile industry. Nevertheless, the global economic situation largely remained in good shape despite this political instability. The automotive market exhibited a continued recovery in the size of the market in many countries, as well as steady growth.

Recently, the automobile industry has been made keenly aware that the needs related automobile functions and social roles, as well as technological seeds, must be addressed at a dramatically accelerated pace. Artificial intelligence (AI) and Internet of things (IoT) technologies are being assessed as full-fledged added-value elements, and the media has been covering many partnerships, some with related ventures, as well as acquisitions. In addition, social experiments and demonstration projects involving local governments are being conducted extensively both in and outside Japan.

Electric vehicles (EVs) have a strong affinity with AI and IoT technologies. Furthermore, fuel economy regulations are expected to further accelerate the shift toward electrification. China is actively establishing a system of tax exemption measures and fuel economy regulations to expand the EV-centered new energy vehicle market. Despite its prominence, the backlash against diesel vehicles in Europe does not in any way translate into active support for gasoline vehicles. The progress of vehicle electrification will not only change automobile production equipment, but is also likely to intensify the restructuring of the supply chain. Moreover, automobile manufac-

turers may not even retain their past leadership role in instituting these changes.

This article summarizes the current internal and external factors, and the coming challenges, faced by the automobile industry to forecast how automobiles and mobility will change over the next 100 years.

2 Political and Economic Situation

2.1. The Global Economy (Table 1)

The extensive uncertainty about the future triggered by inauguration of President Trump and accompanying change in U.S.-Russia relations, as well as the official announcement of Brexit, raised strong concerns about the global economy at the beginning of 2017. However, an unexpectedly strong economic recovery made it a year that overturned those concerns. The economic growth rate in many countries and regions around the world exceeded that of the previous year (2016), as well as the International Monetary Fund (IMF) forecasts. Ripple effects from increased investment in developed countries and

Table 1 Real GDP Growth Rates in Major Countries (%)

	2016	2017	2018 forecast	2019 forecast
World	3.2	3.8	3.9	3.9
Major developed nations	1.7	2.3	2.5	2.2
U.S.	1.5	2.3	2.9	2.7
Eurozone	1.8	2.3	1.9	1.7
Germany	1.9	2.5	2.5	2.0
France	1.2	1.8	2.1	2.0
Italy	0.9	1.5	1.5	1.1
UK	1.9	1.8	1.6	1.5
Japan	0.9	1.7	1.2	0.9
Emerging nations	4.4	4.8	4.9	5.1
Russia	-0.2	1.5	1.7	1.5
China	6.7	6.9	6.6	6.4
Thailand	3.3	3.9	3.9	3.8
Indonesia	5.0	5.1	5.3	5.5
India	7.1	6.7	7.4	7.8
Brazil	-3.5	1.0	2.3	2.5
Saudi Arabia	1.7	-0.7	1.7	1.9

Source: IMF World Economic Outlook, revised forecast, January 2018

increased production of smartphones were contributing factors to this growth, which also indicated high consumer confidence. There firm upward trend in crude oil prices from the latter half of 2017 and onward also supported economic growth in the Middle East as well as in emerging nations.

2.1.1. Crude Oil Prices

The price of crude oil, which had hovered around the \$50 mark throughout 2016, steadily moved into the upper \$50 range by the second half of 2017 as a result of OPEC production adjustment measures. The price is expected to remain relatively high in 2018 and onward due to increased demand centered on emerging countries and as to the rebalancing of supply and demand following the limiting of supply.

This rise in prices has allowed production of shale oil in the U.S., which had temporarily dropped substantially, to start regaining momentum. This recovery in crude oil prices also benefited the Russian economy as its GDP growth rate suddenly rebounded into positive territory in 2017. In contrast, this latest rise in crude oil prices did not lead to economic growth in Saudi Arabia and other Middle East countries due to the interference of other factors such as political instability.

2.1.2. North America

Expectations about Trump administration policies have contributed to raising consumer confidence since the start of 2017, maintaining the strong consumer spending observed in 2016 and boosting GDP growth. The unemployment rate has also been decreasing steadily since the 2008 global financial crisis. This cycle of economic recovery is now the second longest in history. The hurricanes had the effect of driving demand for purchasing replacement vehicles as well as for the rebuilding and purchasing of replacement homes. This in turn contributed to a rise in the business index of the manufacturing industry in the second half of 2017. However, despite the demand for reconstruction immediately after the hurricanes, the contraction exhibited by the non-manufacturing sector as soon as the end of 2017 combined with the influence of a cold wave to slow down the business index.

President Trump declared an America First policy and lowered corporate tax rates in an effort to expand domestic demand. In terms of trade policy, he withdrew the U.S. from the Trans-Pacific Partnership (TPP) and initiated the renegotiating of the North American Free

Trade Agreement (NAFTA). The results of these renegotiations will not be known until sometime in 2018. In addition, the Trump administration is plagued with chaotic personnel issues, low approval ratings and other problems that are creating a huge amount of uncertainty.

This "Trump risk" directly affects the automobile industry. Since the beginning of 2017 President Trump started intervening strongly in the automotive industry to protect employment in the U.S. His actions have included criticizing automobile manufacturers by name on Twitter for building and expanding plants in Mexico and other countries.

Although the media is reporting that some targets in the NAFTA renegotiations should be settled by the first half of 2018, the points raised by the U.S. government at the present time are leading to concerns that not only the costs of automobile and parts, but also those of raw materials, such as steel and aluminum, will rise. Consequently, it is possible that the U.S. will be at the core of a significant change in the automobile supply chain over the long term.

2.1.3. Europe

Although the 2016 referendum centered on the shock value of the term "Brexit" and the withdrawal it represented, the exact level of this withdrawal was undecided at the time the decision was made. As a result, after the official announcement in late March, the surrounding countries and industries concerned calmly settled into an atmosphere of quiet watchfulness over the negotiations concerning the determination of the transitional measures and the transition period, which is expected to take about two years. In addition, the Conservative Party led by Prime Minister Theresa May and in charge of Brexit, failed to win a majority, creating expectations that a hard Brexit would be avoided. In March 2018 a provisional agreement setting the transition period to last until the end of 2020 was reached, and the specific measures concerning this period postponed to subsequent negotiations.

The British economy is in turmoil and the signs of a slowdown are intensifying. The GDP growth rate in the first quarter of 2017, initially forecast to reach +0.3% by the government, stayed at +0.2%, while the growth rate for the year was +1.8%, with the IMF forecasting an estimated rate of +1.6% for 2018. At the same time, high oil prices and other factors are being reflected in the rising price index and the central bank has raised interest

rates slightly for the first time in ten years as a measure against inflation, stirring concerns that consumer confidence will decline.

Meanwhile, the Eurozone exhibited strong economic trends throughout the year. Increased external demand and firm fixed investment trends both acted as positive factors to boost the GDP. In the latter half of 2017, the IMF revised its forecasts for higher economic growth rates in Germany and Italy and other countries. The European government and multiple banks anticipate economic growth of around 2% for the Eurozone in 2018, which represents slow, but continued growth.

In Russia, the economy is very vulnerable to changes in the prices of natural resources, such as crude oil and minerals despite the stability of the government. As previously mentioned, the price of crude oil trended upward in 2017, and the price index for nonferrous metals also recovered dramatically, rising by 21% compared to 2016⁽¹⁾. Consequently, the GDP growth rate, which was -0.2% in 2016, rebounded sharply in 2017 to reach +1.7%.

2.1.4. Japan

The real economic growth rate in Japan in 2017 was +1.5%, maintaining the trend of moderate economic recovery that has continued since November 2012. In addition to the support provided by stronger exports since the middle of 2016, there was also increased domestic demand from consumer spending and capital investment. This bullish growth is also riding the wave of the global economic recovery trends. Japan's main exports consist primarily of capital goods, such as information-related goods, as well as machinery and equipment. Furthermore, higher corporate earnings have led to improvements in the employment and income situation, while the recovery of the world economy has increased inbound tourism to Japan.

At the same time, the shortage of workers has become an issue for the labor market, giving many industries no choice but to change the content of the services they provide. Despite numerous news reports concerning this labor shortage, the average commodity price index maintained a small upward trend in 2017, increasing +0.5% compared to 2016. The main reason for this is the rise in energy costs. The lack of increase in wages despite both the employment rate and the percentage of permanent employees rising, is also perceived as a problem.

Although various scandals surfaced in Japanese domestic politics in 2017, the cabinet approval rating, which

had been falling during the first half of the year, recovered after the Liberal Democratic Party (LDP) retained its majority in the House of Representatives election held in October. The Japanese government is striving for economic expansion felt in day-to-day life as the 2020 Tokyo Olympic Games draw closer.

2.1.5. Emerging Nations

In China, previous economic stimulus measures have led to excess production capacity (mainly in the materials industries) and an imbalance in supply and demand, causing producer prices to stagnate. The rapid expansion of steel exports triggered an increase in steel tariffs by President Trump. As in 2016, the reduction of excess production facilities remained a top priority policy in 2017. The price of steel exports recovered and the GDP in 2017 showed bullish growth of +6.9% compared to 2016, but the government announced a slightly modest economic growth forecast of 6.5% for 2018. Domestic real estate bubbles and the outflow of funds due to rising overseas interest rates have also been identified as risks. The next order of business will involve striving to eliminate economic risks and promote a smooth transition of China's core industries from materials producers to high-tech firms. The new energy vehicle (NEV) regulations for the automotive industry represent one aspect of the attendant measures.

In the Middle East, national economies are still heavily dependent on crude oil prices. Despite starting to rise again in 2017, crude oil prices remain liable to dropping due to factors such as increased shale gas production. Furthermore, over the long term, measures to address climate change are anticipated to reduce global dependence on fossil fuels. Consequently, many Middle Eastern countries are making structural reforms to their public finances, including investing in infrastructure and focusing on their tourism industry, in an effort to lower their economic dependence on crude oil.

The exchange rate of the Mexican peso against the U.S. dollar experienced a succession of rises and falls in 2017 as a result of U.S. trade policy. Despite the uncertainty surrounding the NAFTA negotiations, the general growth of the U.S. economy will at least also be a net positive factor for Mexico. In Brazil, the first upturn in resource prices in three years and the monetary easing policy led the economy to recover, and this recovery is predicted to continue at a moderate pace through 2018 and beyond. However, Mexico and Brazil, as well as Co-

Table 2 Sales Trends in the Japanese Automobile Market

Unit: 1,000 vehicles

	2012		2013		2014		2015		2016		2017	
	Volume	Compared to previous year										
Total	5,370	128%	5,376	100%	5,563	103%	5,047	91 %	4,970	98%	5,234	105%
Vehicle registrations	3,390	126%	3,263	96%	3,290	101%	3,150	96 %	3,245	103%	3,391	105%
Passenger vehicles	3,015	126%	2,872	95%	2,860	100%	2,704	95 %	2,801	104%	2,943	105%
Ordinary trucks	1,412	124%	1,399	99%	1,438	103%	1,355	94 %	1,490	110%	1,548	104%
Light-duty trucks	1,603	129%	1,473	92%	1,423	97%	1,350	95 %	1,311	97%	1,395	106%
Trucks	364	124%	379	104%	418	110%	432	104 %	428	99%	432	101%
Ordinary trucks	136	127%	143	105%	165	115%	173	105 %	173	100%	176	102%
Light-duty trucks	227	123%	236	104%	253	107%	260	103 %	255	98%	256	101%
Buses	12	112%	11	94%	12	106%	13	112 %	15	116%	16	101%
Mini-vehicles	1,979	130%	2,113	107%	2,273	108%	1,896	83 %	1,725	91%	1,843	107%
Passenger vehicles	1,558	137%	1,690	109%	1,839	109%	1,511	82 %	1,345	89%	1,443	107%
Trucks	422	110%	423	100%	434	103%	385	89 %	380	99%	400	105%

Source: Japan Automobile Manufacturers Association (JAMA), World Motor Vehicle Statistics Annual Report (2018)

lombia and Venezuela, will hold presidential elections in 2018 and it will be necessary to keep a close eye on the resulting policies.

Since 2014, India has been maintaining a high GDP growth rate of 6% to 7% supported by strong consumer spending under the stable, continuing government of Prime Minister Modi. The cashless economy in India is also exhibiting a remarkable expansion, which is anticipated to further accelerate due to its strong compatibility with the anti-corruption measures established by the government.

The economies of the ASEAN nations are also looking strong as overall domestic demand, particularly consumer spending, has remained strong and exports are also expanding to meet the demand from a robust global economy. In Vietnam, Indonesia, and the Philippines, in particular, the rise of the per capita GDP to around the \$3,000 U.S. dollars level at which demand for durable consumer goods increases, in conjunction with the size of their populations and large working-age populations, have created strong expectations for economic growth.

On May 8, 2018, President Trump announced the US withdrawal from the Iran nuclear deal. Although Israel and Saudi Arabia expressed their support for the United States, Iran opposed the move, and the upcoming political and economic trends of the Middle East will warrant attention.

3 Current State of the Automotive Industry

3.1. Inside Japan (Table 2)

Sales of new vehicles in Japan in 2017 were robust, reaching 5.23 million vehicles, an increase of 5.3% com-

pared to 2016, as a result of the introduction of new models and the recovery from the impact of the 2016 Kumamoto earthquake. The last minute surge in demand before the application of the new exhaust emissions regulations in September 2017 and growing demand due to the rise in inbound tourism also boosted commercial vehicles sales, with trucks exhibiting an increase of 1% and buses an increase of 0.6%. With the consumption tax increase scheduled for March 2017 postponed to September 2019, the demand for automobiles in 2018 is also expected to maintain the same level as in 2017⁽²⁾.

There is latent concern that automobile sales will decline greatly because of the rapid and serious aging of the population and decline in birthrate predicted for Japan and the attendant drop in the working population. However, government-led initiatives such as the “Plan for Dynamic Engagement of All Citizens” and the “Council for Designing 100-Year Life Society” are providing rays of hope for maintaining the working population. In addition, as women and senior citizens begin to play larger roles in Japanese society, the Japanese automotive industry will have to address not just the demand for vehicle purchases, but also the growing and diversified demand for new mobility services relying on advanced safety vehicles and automated driving functions. The automotive industry as a whole is expected to provide multiple sources of value through a combination of goods and services.

3.2. Outside Japan (Table 3)

3.2.1. The U.S.

Despite demand for replacement vehicles after the hurricanes, vehicle sales in 2017 amounted to 17.24 million vehicles, a decrease of 1.8% from 2016. This is per-

Table 3 Sales Trends in the Overseas Automobile Market (including heavy vehicles)

Unit: 1,000 vehicles

	2013		2014		2015		2016		2017	
	Volume	Compared to previous year								
China	22,603	115%	24,264	107%	25,357	105%	28,720	113%	29,472	103%
North America	18,825	107%	19,966	106%	21,249	106%	21,555	101%	21,273	99%
Europe	18,431	99%	18,702	101%	19,313	103%	20,270	105%	21,047	104%
ASEAN Nations & Oceania	8,200	100%	7,868	96%	8,160	104%	8,488	104%	9,024	106%
Middle East & Africa	4,753	98%	5,251	110%	4,991	95%	4,811	96%	4,765	99%
Central and South America	6,267	101%	5,643	90%	4,553	81%	4,047	89%	4,494	111%
Total	79,079	105%	81,694	103%	83,623	102%	87,891	105%	90,076	102%

Source: IHS Automotive

ceived as a reaction to the strong sales observed in 2015 and 2016. Other negative factors include the raising of the policy interest rate and a shift toward the used vehicle market. With leasing becoming increasingly common, there is concern that the introduction of off-lease vehicles into the used vehicle market will push down new vehicle sales over the long term.

The future prospects of the Trump administration are always murky, but the corporate tax reductions and planned expansion of infrastructure investment are anticipated to bear fruit in and after 2018, and expected to act as positive factors. Overall, the automobile market in the U.S. has already reached maturity, and fluctuations in total demand will likely be affected by the economy.

3. 2. 2. Europe

In 2017 vehicle sales in Europe were strong, increasing 4% compared to 2016. In Western Europe, the ratio of diesel vehicle sales decreased from 49.5% in 2016 to 44.8% in 2017. This a drop of nearly 5 points was offset by an increase in gasoline vehicle sales. Sales of commercial vehicles in Europe as a whole rose by 2.9% compared to 2016. Vehicle sales in Russia are steadily recovering and increased 12.3% compared to 2016 thanks to rising resource prices.

After peaking in 2011, the sales ratio of diesel vehicles in Europe has declined gradually, and the 2017 drop can be describe as sales figures representing the “diesel crisis” in unmistakable fashion. Since December 2016, Paris, Madrid, London, and other major European cities are considering limiting or banning diesel vehicles, or have already agreed to do so. This movement is driven both by the purpose of preserving the local environment and by the strengthening of municipality-led measures to address climate change underway in major cities around the world. In October 2017, the European Commission also submitted a proposed new fuel economy regulation

to take effect in 2020 that aims to reduce CO₂ emissions by 30% by the year 2030 compared to 2021 levels.

At almost the same time, the French and British governments announced plans to ban the sale of all new diesel and gasoline-engine vehicles in 2040, and Europe as a whole is, as a first step, shifting toward a diesel-free vision. With respect to vehicle leasing and the future of the off-lease market, there are also concerns that the consumer tendency to avoid buying diesel vehicles will accelerate. Trends such as these are likely to further accelerate the shift toward EVs at both the national and local levels.

3. 2. 3. China

In China the government hurriedly announced that it would extend the tax rebate on light-duty vehicles (original 10% acquisition tax rate reduced to 5%), scheduled to end in 2016, at a rate of 7.5% in 2017 before returning it to its original 10% in 2018. This resulted in new car sales of 29.47 million vehicles in 2017, a 3% increase compared to 2016. Furthermore, vehicle sales from January to March 2018 also increased by 2.8% compared to the same period in 2016, indicating that despite a slower growth rate than in 2016 and earlier, the extension of the tax rebate prevented a large negative backlash and enabled a successful soft landing. The popularity of SUVs compared to other models also continues unabated.

The Chinese government is also steadily introducing systems designed to expand the production and sales of new energy vehicles (NEVs). In 2017 the review process for new entry by NEV manufacturers was strengthened. In 2018 NEV incentives will be incorporated into the corporate average fuel consumption (CAFC) credit system, while 2019, will see the introduction of the NEV credit system that will mandate fixed NEV quotas for automobile manufacturers. The two systems will be linked, and EVs with longer cruising ranges will be given preferen-

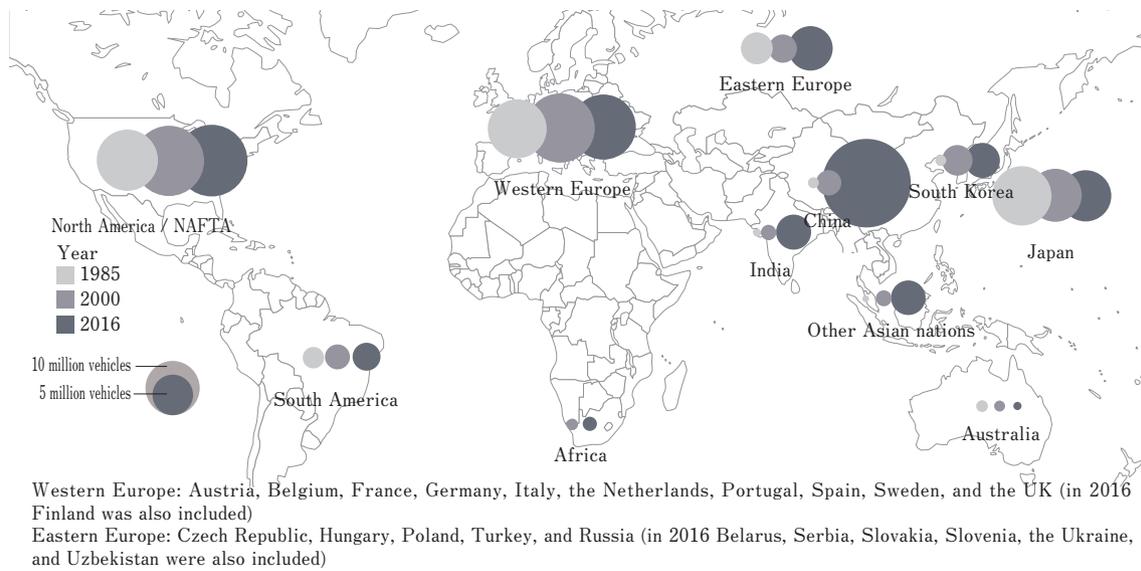


Fig. 1 Vehicle Production Volume Trends in Major Regions & Countries

tial treatment over other types of NEVs. With these measures, the Chinese government is aiming to achieve NEV production and sales of two million vehicles in 2020. NEV sales in China from January to March 2018 are already double those for the same period in 2016.

One of the most serious issues that China is facing to maintain its high economic growth rate in the future is the decoupling of its economic growth from its demand for energy. Compared to the CO₂ emissions regulations introduced on a trial basis in 2013 that targeted factories and other fixed emission sources, the NEV regulations are expected to have a large secondary effect that will cultivate a broad range of supporting industries. China is therefore anticipated to further expand these NEV-related systems over the coming years.

3.2.4. Other Nations

Asian automotive markets outside China are also in generally good shape. Supported by the continued strength of the economy, the automobile market in India is growing steadily. Vehicle sales in 2017 increased 7.7% compared to 2016, and India has now surpassed Germany to rank fourth in the world. This market is bound to expand over the medium to long term because the automobile ownership rate is still quite low for a country with a population in excess of one billion people. The Philippines are enjoying continued strong economic growth, and vehicle sales in Thailand are also recovering as the economy recovers. In Vietnam the vehicle sales sold dropped by 7.8% compared to 2016, a decrease attributed to consumers refraining from buying vehicles

now in anticipation of a planned reduction in import tariffs in 2018.

In Brazil a recovery in vehicle sales spurred by that of resource prices is also having a positive impact on other South American countries. In the Middle East vehicle sales in Iran increased significantly by 26.6% compared to 2016, but fell by 20% in many other countries. In South Africa, vehicle sales recovered from their decline in 2016 due to the recovery in prices for mineral resource. However, developed nations holding investments back had a serious impact on Africa as a whole, causing vehicle sales to drop sharply in other countries. In these regions, strong growth over the medium to long term can be expected as the global economy also recovers.

India and Taiwan, as well as some ASEAN nations, such as Thailand and the Philippines, various incentives targeting EV purchases, manufacturers, or the infrastructure have been introduced or are being planned. Brazil has also launched a long-term automobile industry policy (Rota 2030) that not only includes emissions regulations, but also biofuel regulations. Even though “EV shift” is used as a catchall phrase encompassing the actions being taken in the developed nations, it is important to keep in mind that the speed of infrastructure development and the needs of consumers will all develop in vastly different ways in the various markets.

3.3. Production

Figure 1 shows the trends in vehicle production volume in the major regions and countries of the world since 1985. Automobile production has grown consider-

ably in emerging nations in conjunction with their economic growth. From 1985 to 2000 there was remarkable growth in vehicle production in the ASEAN nations, while between 2000 and 2016 the largest growth occurred in China and India. Market growth in the Asian region is anticipated to result in further localization of production over time.

4 Issues of the Automotive Industry in Japan

Artificial intelligence (AI) is currently said to be in its tertiary boom, and it is likely that never before the last year or two have so many people felt it was now the real thing. In 2016 an AI defeated top professional go players, and in May 2017 an active shogi master lost to a computer in an official game. In addition, various media have been running one story after another about professions that will disappear due to AI, and in 2017 the management plans of several Japanese megabanks included the launch of measures to reduce their work volume on a large-scale through the use of AI, an action that undoubtedly made many people feel threatened.

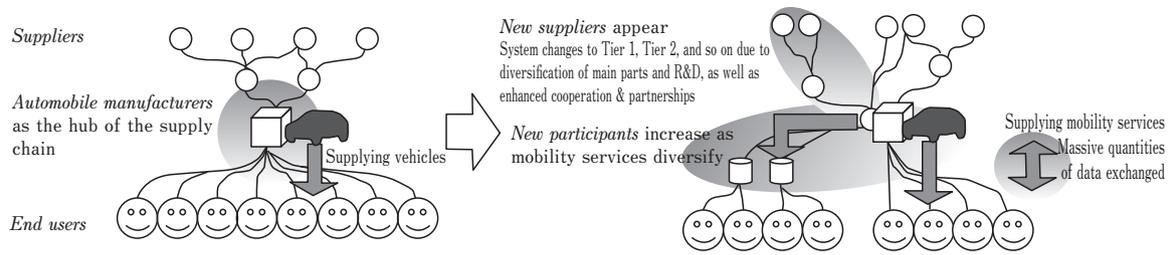
Many companies in Japan are now under pressure to deal with challenges such as increasing labor costs and a growing labor shortage. Under the banner of work style reforms, a diverse array of initiatives is being introduced and practically campaigned for on a daily basis by the media. Wages in emerging nations around the world, including China, are being pulled upward by their economic growth, which makes improving productivity throughout the supply chain an important issue. Consequently, AI, IoT, and robotics are being introduced and used more aggressively than ever, putting both manufacturing and sales workplaces in a state of constant evolution.

The concept of CASE, referring to Connected, Autonomous, Shared & Services, and Electric, where the last of these is strongly interrelated with the first three, which involve the application of AI and IoT technologies, is gaining widespread recognition as an important aspect of product value⁽³⁾. In Japan, the declining birthrate and aging of the population, as well as the influx of young people moving to cities, has magnified regional disparities in population distribution. The resulting long-term economic and social issue is also expected to cause the demand for automobiles to decrease. Automobile markets have already reached maturity in other developed countries as well, inciting manufacturers to seek ways to establish

their presence in the market that do not rely on sales as the sole indicator. In urban areas both in and outside Japan, conventional vehicle usage is being expanded through demonstration projects and commercialization of car sharing services primarily intended to provide an alternative to vehicle ownership. At the same time, trials involving offering autonomous vehicle-based vehicle dispatch and transportation services as a substitute for driving ability to people who find it difficult to drive or do not own a vehicle are being conducted in areas where depopulation and an aging population are an issue. In conjunction with such services, promoting advanced automotive safety equipment also represents an important solution to the problems of an aging society.

Given its effectiveness at both preserving local air quality and countering global climate change, as well as the expectation that it will drive new industrial growth, automobile electrification is being actively pursued in Europe, China, and elsewhere. The need to respond quickly to this trend has triggered a succession of announcements concerning plans to increase the capacity of battery-related facilities or build new ones. In addition, efforts to both further propagate renewable energy and provide a stable supply of electric power are creating high expectations for vehicle batteries in society. The emerging long-term vision for society is one in which a renewable energy-based electric grid and battery-equipped vehicles are interlinked. A present, only a few vehicle models have the V2X, and especially V2G, technology (reversing the flow of charged electric power from the vehicle battery to homes or the power grid) that can directly meet those expectations.

Factors such as the diversification of powertrains, market expansion centered on emerging countries, and the diversification of product standards stemming from stricter environmental regulations can be said to have somewhat settled down automaker group restructuring aimed at achieving economies of scale. Nevertheless, the automotive industry will likely continue to undergo structural changes such as those shown in Figure 2 as it faces the following issues. First, constraints on the availability of energy and other natural resources, including the predicted higher difficulty of procuring resources caused by the rise in the price of natural resources brought about by the global economic recovery and the rapid progress of electrification mentioned previously looms as an omnipresent obstacle. In addition, issues that



Source: Mitsubishi Motors Co., Ltd.

Fig. 2 Structural Changes in the Automotive Industry

cannot be overcome simply through competition between automakers, including the efficient use of the mammoth amounts of information generated by the dissemination of AI and IoT, as well as human resources problems such as rising wages and the competition to attract highly-skilled talent, are anticipated. With the situation surrounding the automotive industry in the midst of massive changes, the people in charge of this leading Japanese industry must purposefully draw up a future vision with a broad, long-term perspective that encompasses a diverse array of social issues.

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