

Renault-Nissan R&D India
(case study materials, June 2018, Kazuyuki Motohashi)

1. The Indian auto industry: A great opportunity and intensifying competition

More than four million automobiles were sold in India in 2017. This was more than in Germany, making the country the fourth largest auto market in the world after China, the United States, and Japan. Also, given the trend of the Japanese market, it will only be a matter of time before India becomes number three (Figure 1). Although the number of vehicles sold is growing rapidly, the rate of car ownership in India is still low. In India, there are only 32 vehicles for every 1,000 people (for passenger cars, the rate is 23 vehicles), while in China, the rate is more than 100 passenger cars per 1,000 people. The Indian market still has a lot of room to grow. Although average incomes are low in India, the population is poised to pass that of China to become the world's largest. Over the long run, India's auto market has the potential to become the largest in the world.

However, cheap compact cars are inundating the market, and auto makers are actually operating under severe cost constraints. The major segment in India's auto market is compact cars between 3.4 meters and 4.0 meters long. These, combined with the next smaller class--minicars of 3.2 meters to 3.4 meters in length--make up about 60% of the passenger car market. Also, although the market share of SUVs and other utility vehicles is expanding, even these are focused on smaller UV1 vehicles (4.4 meters or shorter) (Figure 2). The reason for the market's focus on compact cars has something to do with the taxation of automobiles in India. Until June 2017, the commodity tax levied on the purchase of vehicles up to 4.0 meters in length had been 12.5%, while that levied on vehicles longer than 4.0 meters had been almost twice as high at 24%. However, in July 2017, India launched a new indirect tax called the Goods and Service Tax (GST). Under this regime, the basic tax rate is 28% plus a surtax that varies with the size of the vehicle. For compact cars of up to 4.0 meters in length, the surtax is 1%, and a total tax of 29% is quite a tax increase over the previous level. For vehicles longer than 4.0 meters, the surtax is determined by engine size, and the GST can total 45%-50%. The tax differential is so great that it could alter the structure of the auto market.

In the Indian compact car market, Maruti Suzuki (a subsidiary of Japan's Suzuki Motor Corporation) is the major player by far, with a 39.9% passenger car market share in 2017 (Figure 3). Maruti Suzuki has been manufacturing and selling cars in India since the 1980s, before other foreign car companies entered the market. It therefore surpasses its competitors in a number of areas, including cost competitiveness thanks to local suppliers and a local network, a nationwide sales and service infrastructure, and high brand awareness throughout India. After Maruti Suzuki comes South Korea's Hyundai. Hyundai set up business in India in the late

1990s, around the same time as the other foreign auto makers. Like Maruti Suzuki, however, it has concentrated on making compact cars, and it is comfortably in second place.

The third and fourth place players are Indian domestic auto companies. Mahindra & Mahindra is in third place, and Tata Motors is in fourth place. Tata Motors was in third place until around 2010, but then Mahindra & Mahindra passed it up with its SUVs and utility vehicles, a segment that started growing. Tata Motors had been famous for launching the super cheap Nano (which cost about ₹200,000) in 2009, but the Nano developed a bad reputation and came to be dubbed the Poor Man's Car, so the company stopped producing it in 2018 and plans to withdraw it from the market. India's consumers tend to like low prices, yet their attitude is to get "value for money," or good quality and appearance for a low price. The Nano is a case of a product not selling on price alone.

From fifth place on down come such Japanese auto makers as Honda, Toyota, and Nissan, as well as such American and European automakers as Ford and Renault. Honda stands out among the three Japanese companies. Looking at the trend from 2011 to 2017, for example, we see that Toyota's sales were stable at 130,000 units, and Nissan's sales rose from 25,000 to 53,000, while Honda's sales rose from 78,000 up to 178,000.

2. Renault Nissan Technology Business Center India (RNTBCI)

Nissan embarked on a business restructuring in 1999, when it received a capital infusion from Renault during a business crisis caused by the collapse of the bubble economy and poor financial performance in the 1990s. The person who steered the company to a turnaround in its performance was Carlos Ghosn (former CEO and current chairman) from Renault. Mr. Ghosn viewed India as a key location in the Renault-Nissan Group's global strategy, so he set up the Renault Nissan Technology and Business Center India (RNTBCI) as a joint research center in 2009. The research center is located in Chennai, in the state of Tamil Nadu in southern India. Along with Renault Nissan Automotive India, a joint auto production plant, it is a key site for the development of the company's auto business in India.

Under the Renault Group's umbrella, Nissan benefits from a number of business synergies, including shared auto platforms and centralized procurement of parts. Still, it remains basically independent, with its own research and development, production, marketing, and brand management functions. Although Renault and Nissan basically maintain separate R&D centers, RNTBCI was set up to be a joint research center funded by both companies. Therefore, the center's management team consists of equal numbers of representatives from Renault and Nissan. As of June 2018, it is a huge research center employing about 6,000 people (including 1000+ staffs for business process outsourcing (BPO) activities). Besides developing automobiles, the center also has divisions devoted to research and advanced engineering. India has a lot of excellent software engineers, and their pay is only a fraction of those in France and

Japan. Because developing a car entails a lot of software development, the cost advantage of locating the development function in India is significant. Having said that, however, the facility also has research and advanced engineering teams, and having RNTBCI *does* more than simply cut costs.

An automobile is a complicated product consisting of tens of thousands of parts. An engineer (called Chief Vehicle Engineer, or CVE in India) takes the lead in new car development and other major projects. The CVE forms development teams for the car body, chassis (including the engine, power lines, and other parts that do not comprise the body), data systems, and other aspects. Engineers are assigned to work under the General Manager of each development team. At Nissan, the CVE is usually located in Japan because the company has a global development structure. Therefore, the engineers at RNTBCI are responsible for implementing a portion of major development projects. In India, the company has not developed an adequate local supply chain, and thus it needs to change its business models to accommodate local conditions, such as procuring parts in India. Also, the body and other aspects of the car exterior should reflect the tastes of Indian consumers. Therefore, although new car development generally proceeds under a centralized system led by the CVE, for development in India, the company is actually seeking out the opinions unique to Indian people.

Also, RNTBCI's Advanced Engineering and Research (AR&R) division plays a role in conducting research on a global level. For example, because India has highly skilled software engineers, the local Indian staff are involved in such tasks as developing combustion simulators for engine design. In addition, the center has set up a joint facility with the Indian Institute of Technology Madras in the school's technology park in Chennai to pursue joint research on advanced technology for fuel cell materials and the like.

3. Launching the Datsun brand, the emerging markets strategy car

In July 2013, Carlos Ghosn, who at the time was the CEO of both Nissan and Renault, told a press conference in Chennai that the two companies planned to invest \$2.5 billion (about ¥250 billion) in India over the next five years. This investment would be earmarked for promoting sales of the Datsun GO, which would be launched in 2014, and to develop low-cost cars locally. Until then, Nissan and Renault had invested a total of about \$2.5 billion in India. Investing a similar amount over five years indicated that the Renault-Nissan Group planned to enhance its presence in India.

Another showpiece was the launch of the Datsun GO in 2014. "Datsun is back. This high-quality car is aimed at the middle class (in India)," said CEO Ghosn. Although Datsun was the brand name of Nissan's cars in the company's early days, it had been about 30 years since this brand name was used in emerging markets. The GO's first model went on the market in 2014. It was a five-door hatchback slightly smaller than Nissan's main compact, the March, and had

a 1,200 cc engine with a five-speed manual transmission. This was Nissan's first low-cost car sold in India, and it could be positioned to compete with Maruti Suzuki's top-selling compact car and with Hyundai's main model.

The Datsun GO was a totally new car locally developed at RNTBCI under a CVE in India. The price was set lower than any other Nissan car, at 20,000 rupees (about \$4,000) so that it could be price-competitive with rivals' compact models. Accomplishing this involved fully ramping up resources at the Indian development center, as the traditional Japan-centered development structure would not have worked, and the new car was developed by using local ingenuity with respect to keeping costs down.

To get the price low, Nissan and Renault also implemented a new design method called the Common Modular Family (CMF), which uses more components that are common to the Group's car models. This method for developing new cars combines modular components, such as the engine compartment, which contains such parts as the engine and the transmission, and the cockpit, which includes the seats and so forth. Compared with the previous way of designing a car in its entirety, the development process that employs modules vastly shortens the development time. The Datsun GO, which was developed using this method, is positioned as a strategic car not only for India but also for such emerging markets as Indonesia and Pakistan.

Although the Datsun was to be Nissan's trump card in the Indian market, sales have not been going well. In India, the cheap cars are most popular in rural areas, and Nissan is trying hard to build up a Datsun dealer network. However, urban consumers are not showing much interest in the Datsun because they regard it as a stripped-down Nissan car. In Indonesia, under the Datsun brand, Nissan has launched the GO Plus minivan, as well as sedan and hatchback models. However, sales remain slow in markets outside of India.

Auto industry analysts say that the Datsun brand has little name recognition in either India or Indonesia, and the company lacks a broad sales and service network. In India, the company was late in opening dedicated showrooms, and as of 2016, it had only about 15 Datsun showrooms. For the rest of its showrooms, Datsun uses Nissan showrooms (because the Datsun has been launched as a new car brand, it is sold separately from the Nissan brand). The limited dealer service network is also problematic. Datsun only has about 160 dealer locations, far fewer than Maruti Suzuki's more than 1,500 locations.

4. Honda's steady advance in India

While Datsun's sales are stagnating, Honda's sales continue to grow steadily. Honda's Indian market share began expanding with the launch of its 400,000 rupee (slightly less than ¥700,000) Asian strategy car, the Brio, in 2011. In that year, it achieved sales of over 50,000 units, which then increased to just under 80,000 in 2012. It then launched the Amaze, the sedan version of the Brio, in 2013. This car sold well too, reaching the 130,000 level in 2013. In

addition, in 2014, Honda debuted its Mobilio minivan, which sold more than 190,000 units (according to Nikkei Trendy Net, Feb. 12, 2016).

All of these are based on a special platform that is smaller than Honda's Japanese Fit, and at the 2016 Delhi Motor Show, Honda unveiled the BR-V, which is built on the same platform. Similar announcements were made in Indonesia and Thailand. This vehicle does not only have a seven-person capacity in three rows of seats, but it also has a rugged appearance, similar to that of an SUV, and it is gaining popularity in India.

The popularity of Honda's vehicles is based on their high level of quality. Price-wise, Honda's Asian strategy car costs more than its equivalent made by Suzuki, but the exterior plates as well as the feel of the interior are clearly of Japanese quality.

According to a source at Honda, "Making low-cost cars for India began with the locally produced City in 2002. Although the City was not as cheap as the Amaze, it used the base of the Japanese Fit and became a best seller in India. That gave it a reputation as a high-quality product." Then, Honda started offering a 1.5-liter diesel Amaze. This gave Honda a competitive edge over gasoline-run cars.

5. Reworking of Nissan's emerging markets strategy

As Nissan struggled in India, it announced its Datsun expansion strategy at the end of October 2015. Besides continuing to expand its sales and service network, it also added to its line-up in India. The redi-GO was launched in July 2016 as part of this new car strategy. This car is a crossover hatchback that is somewhat high and can handle rough roads. The aim is to do away with the image of the Datsun brand as a cheap car for rural villages. Advance sales hit the 10,000 unit level, so the strategy seems to be working.

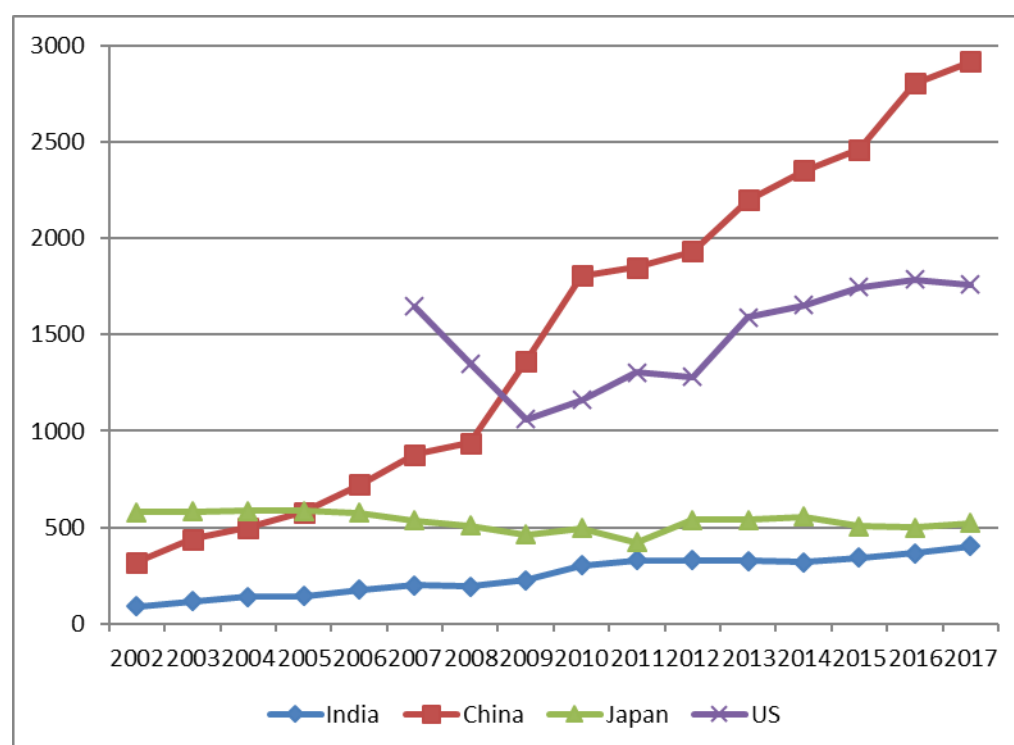
In addition, in March 2018, Nissan Motor announced that it would restart production and sales in Pakistan (Reuters, March 28, 2018). Its local partner, Ghandara Nissan, plans to invest 4.5 billion Pakistani rupees (about ¥4.1 billion) to locally produce a Datsun pick-up truck and put it on the market by the beginning of 2020. Pakistan has a population of about 200 million people. The auto industry comprises about 4% of the country's gross domestic product (GDP), and more than 200,000 cars are sold every year. Peyman Kargar, who chairs Nissan's management committee for Africa, the Middle East, and India, commented that Pakistan has a large population, but its rate of car ownership is low, and its market size is optimal for growth. Datsun's entry model will be produced at the plant in Karachi in the southern part of the country, which had been producing the Sunny sedan until 2010. The plan has a production capacity of about 6,000 vehicles per year. Mr. Kargar says that the company is aiming to increase the efficiency of its investment by producing several Datsun models on the same platform.

Furthermore, Suzuki leads the passenger car market in Pakistan, followed by Toyota and Honda, so that these three Japanese auto makers account for more than 90% of the market. The Pakistan government's auto policy announced in 2016 gives preferential treatment to foreign

companies through such measures as tariff reductions and exemptions on auto parts. This encouraged Renault and Hyundai to start up local production in Pakistan, so competition is heating up.

- Q1. Among Renault Nissan's R&D centers, which type is that of the company's R&D center in Chennai, India? ① technology driven, ② cost driven, ③ market driven, ④ policy driven, ⑤ production driven, ⑥ innovation driven
- Q2. Nissan's Datsun is struggling, while Honda's Brio (Fit) is selling well. Both are low-cost compact cars in India. How are they different? Who are their target customers?
- Q3. What do you think of Nissan's emerging markets strategy, including selling the Datsun in Pakistan? Was investing in Pakistan the right decision?

Figure 1. Trend in vehicles sold in China, the U.S., Japan, and India



Source: Auto statistics from each country.

Figure 2. Unit auto sales by segment in India

	2012	2013	2014	2015	2016	2017
Passenger Vehicle	2,760,469	2,553,788	2,574,428	2,771,421	2,966,603	3,229,109
Passenger Car	2,006,011	1,806,965	1,856,405	2,034,016	2,062,357	2,168,151
Mini	603,612	589,532	537,816	532,875	583,750	578,614
Compact	853,631	912,685	1,053,298	1,196,162	1,218,765	1,367,700
Others	548,768	304,748	265,291	304,979	259,842	221,837
Utilities	513,442	535,845	545,920	564,436	724,522	870,060
Mini Vans	241,016	210,978	172,103	172,969	179,724	190,898
Commercial Vehicle	813,821	687,323	606,103	651,721	702,491	789,772
Total	3,574,290	3,241,111	3,180,531	3,423,142	3,669,094	4,018,881

Source: *The Indian and South Asian Automotive Industry 2018*, Fourin.

Figure 3. Market share by auto maker (passenger cars only)

	2014	2015	2016	2017	2017 Share
Multi Suzuki	1,152,128	1,289,128	1,394,972	1,602,522	39.9%
Hyundai	411,471	476,001	500,537	527,320	13.1%
Mahindra & Mahindra	230,592	224,188	242,766	242,365	6.0%
Tata Motors	157,544	159,587	164,123	191,107	4.8%
Honda	179,816	202,404	156,107	178,755	4.4%
Toyota	132,778	139,819	134,149	139,566	3.5%
Renault	44,849	53,847	132,235	112,492	2.8%
Ford	77,197	77,244	86,489	87,587	2.2%
Nissan	49,139	40,925	53,724	53,390	1.3%
VW	44,215	43,163	47,323	47,796	1.2%

Figure 4. Nissan and Honda strategy cars for emerging markets

Datsun-GO (by Nissan)



Honda Amaze

