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Supporting Industrial Park Operation in India by Japanese Companies

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This is the first equity investment since the Equity Finance Group was established in October 2016. JBIC staff in charge of the project talk about its significance and the issues they had to solve before it finally materialized.

Supporting Japanese suppliers to expand to India

Matsubara: In India, Maruti Suzuki India Limited, the Indian subsidiary of Japanese automobile manufacturer Suzuki Motor Corporation, has captured nearly 50% of the passenger vehicle market. Because the domestic demand for automobiles is growing rapidly in India, Suzuki Motor built a factory in the state of Gujarat and started production in February 2017. Suzuki already has plans to construct a second factory, and its annual production capacity is expected to increase from the current 1.5 million vehicles to 2 million in a few years.

The state of Gujarat is promoting a policy to improve infrastructure and to invite companies, but Japanese companies in supporting industries, which are vital for automobile manufacturing, have been slow to expand. Responding to this situation, Toyota Tsusho Corporation established TechnoTrends AutoPark Private Limited (TTAP) which manages the industrial park set aside especially for Japanese companies to attract Japanese suppliers. TTAP has secured a site in the Mandal Japanese Industrial Zone, which has been built by the State Government of Gujarat and is supported by the Japanese Ministry of Economy, Trade and Industry (METI) and Japan External Trade Organization (JETRO). It provides factories for rent and various infrastructure services to Japanese companies, including Japanese mid-tier enterprises and small and medium-sized enterprises (SMEs). Toyota Tsusho already operates seven industrial parks in four countries, including India, as a key area of its infrastructure business, and in-

tends to support Japanese companies expanding to Gujarat by using its accumulated know-how.

Operation of industrial parks dedicated to Japanese companies is a business opportunity in India due to its unique business environment. JBIC's "FY2016 Survey report on overseas business operations by Japanese manufacturing companies" ranked India at the top of the list of countries that Japanese companies regard as promising over the medium term, but there are many issues to solve, such as underdeveloped infrastructure and the complex, bureaucratic legal system. One of the widely known problems is the difficulties involved in land acquisition, and it is not easy for Japanese companies to solve such problems alone.

To overcome this stalemate, JETRO has been developing 12 candidate sites, which it selected for the construction of industrial parks specifically for Japanese companies, in cooperation with the Indian government to enable Japanese companies to go through the formalities without difficulty. In the Mandal Japanese Industrial Zone, TTAP has made it easier for Japanese companies to expand overseas securely by constructing plug-and-play^(Note) factories for rent. In addition to the locations, TTAP provides various services, such as assistance in establishing companies, obtaining approval from the government, management of cafeterias and shared commuter buses, and operation of shared infrastructure.

For stable management of the industrial park

Matsubara: Infrastructure improvement, land acquisition, and difficulty in obtaining approval are issues similarly faced in the management of this industrial park. To ensure stable management of an industrial park, it is vital to create an environ-

ment that allows Japanese companies, state government and government agencies to discuss problem-solving. Accordingly, JBIC signed a memorandum of understanding (MOU) in January 10, 2017 with the State Government of Gujarat, Gujarat Industrial Development Corporation (GIDC), which manages the Mandal Japanese Industrial Zone where the project is located, Toyota Tsusho and Toyota Tsusho India Private Limited (TTIPL), Toyota Tsusho's country headquarters for India. The purpose of this MOU is to execute the project steadily, while confirming the cooperative relationship between the parties.

Miyahara: It is not easy to manage a business with relatively high uncertainty in India. In this project, we conducted repeated analyses to identify what risks lie ahead, with the support of highly experienced and knowledgeable staff of Toyota Tsusho and consultants. We were thus able to confirm the market situation and business feasibility and to study the risks by drawing up many scenarios. Although we experienced various difficulties, it was rewarding.

In addition, we succeeded in making the Government of India aware of the importance of the project that manages the industrial park by signing the Subscription and Shareholders Agreement and the memorandum at the time of the international investment summit, Vibrant Gujarat Global Summit from January 10-13 in 2017, held in the presence of Prime Minister Modi.

This is the first project undertaken by the Equity Finance Group since its establishment in October 2016. We would like to continue supporting Japanese companies expand overseas with the JBIC's equity financing scheme, while monitoring the progress of each project with a sense of alertness and hope.

(Note) Plug-and-play: Business system to provide such services as acquiring land and buildings, securing electricity and water, obtaining approval and improving various forms of support to enable firms to start operation as easily as "plug-and-play".

Cover: Fuji Concrete Industry Co., Ltd. (Takeo City, Saga Prefecture)



Building 1 of the rental factory inside the industrial park

Analysis of Survey Results 2016

Special Feature

Overseas Investment Destinations of Japanese Manufacturing Companies Understanding the Latest Trends

Our Global Challenges

Toyota Kohki Co., Ltd. (Fuchu-city, Tokyo)

Fuji Concrete Industry Co., Ltd. (Takeo-city, Saga Prefecture)

Contributing to India's nation-building with high-quality concrete products

News in Depth

Supporting Japanese Participation in a Geothermal Power Project in Indonesia by Providing Project Financing

SPOTLIGHT

Supporting Industrial Park Operation in India

Overseas Investment Destinations of Japanese Manufacturing Companies

Understanding the Latest Trends

Based on JBIC FY2016 Survey: Outlook for Japanese Foreign Direct Investment

Survey overview

- Survey targets: Manufacturing companies that have three or more overseas affiliates (including at least one production base)
- No. of companies questionnaires were mailed to: 1,012
- Responses returned: 637 (response rate: 62.9%; 388 companies responded by post and 249 by web)
- Period of survey: July-September 2016
- Main survey topics:
 - Regular topics
 - Evaluations of overseas business performance
 - Business prospects
 - Promising countries/regions over the mid-term
 - Special topics of this year
 - Status of cross-border M&A and issues
 - Current state of supply chain and roles of production/R&D bases
 - Competition in the global market

Note

"Overseas business operations" is defined as production, sales, and R&D activities at overseas affiliates, as well as outsourcing of manufacturing and procurement.

In December 2016, the Japan Bank for International Cooperation (JBIC) released the "FY2016 Survey Report on Overseas Business Operations by Japanese Manufacturing Companies". This annual survey has been conducted since 1989 to identify the current trends, challenges and future outlook for overseas business operations by Japanese manufacturing companies, and this year's survey marks the 28th.

In this survey, three individual themes, "Status of cross-border M&A and issues," "Current state of supply chain and roles of production/R&D bases" and "Competition in the global market" were added to the fixed main themes which include "Evaluation of overseas business performance," "Business prospects" and "Promising countries/ regions over the medium-term." In this report, we present several major findings of the survey including characteristic trends of overseas business, and trends and possibilities of India which has been selected as the most promising country over the medium term for three consecutive years. We also feature an interview with a company that has expanded into Myanmar which was selected as the ninth promising country in the survey.

Changing trend in Japanese overseas business

Greater market orientation and the role of human resource development

Kasumi Yamazaki

Deputy Director
Research Division
Policy and Strategy
Coordination Division
Corporate Group



Trend 1 Purpose of overseas development is shifting from "for manufacturing" to "for market"

Competition between companies is expected to escalate

Fig. 6 on page 6 shows promising countries and regions over the medium-term. "Current size of the local market" and "Future growth potential of local market" are the top reasons why these 10 countries are promising. Thus, the major reason for overseas development is shifting from "for production" to "for market and sales" since "Inexpensive source of labor" has declined compared to the survey results 10 years ago when many companies included it as the top reason.

On the other hand, the ratio of companies that chose "Intense competition with other companies" as an issue in business operation in promising countries increased in nine countries except Mexico. As shown in Fig. 2, regarding competitors in sales markets, the results showed that the largest competitors in the markets of India, North America, EU15 and Brazil are European and American companies, while the ratios of companies which see Japanese companies as the largest competitors in ASEAN5 markets and Chinese companies in the Chinese market increased from the previous survey. The background of this trend is considered to be the increased presence of Japanese companies in the ASEAN5 markets and the improved technological level of Chinese local companies. In particular, many respondent companies consider Chinese and Indian companies as competitors which have considerably higher price competitiveness, indicating that competition be-

tween companies is intensifying in Asian emerging markets.

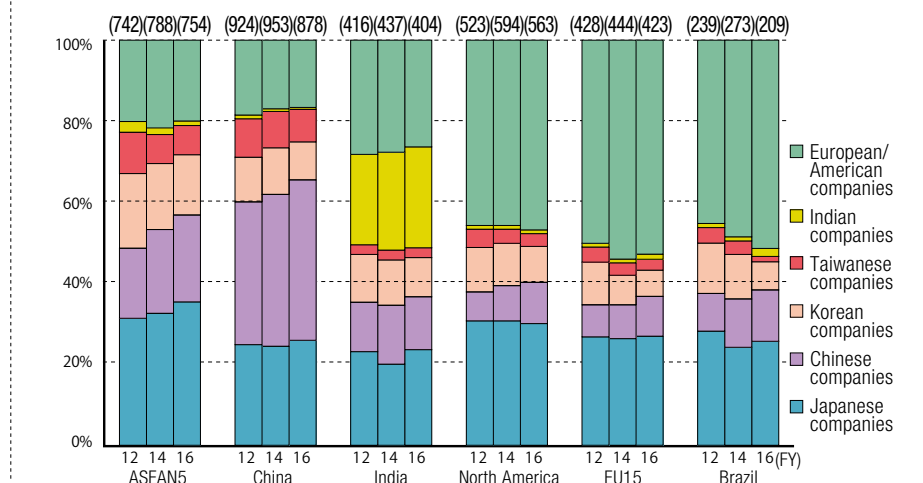
Actually, machinery manufacturer A which has increased its operating profit nearly ten-fold in the past few years is doing business in about 30 countries. It explained its strategy for overseas development as follows: "Because we aim to sell our products locally, we first set up booths at exhibitions, then promote the strengths of our products and identify local needs, and study competing companies. Based on the information we gather, we produce products in Japan and export them overseas. When the markets mature and offer the prospect of buy-

ing a sufficient volume of our products, we set up a production base abroad. This is our process of expanding overseas."

Company A is expanding overseas by itself, without relying on a consulting firm. Thus, companies with enough ability in fields other than manufacturing, such as sales, service, branding and marketing, may be able to succeed in differentiating and building high value-added products and continue to develop in the future without getting into a price war with other companies.

■ The largest competitors are Japanese companies in ASEAN5 market, Chinese companies in the Chinese market, and European and American companies in other markets.

Figure 2: Competition in Overseas Markets



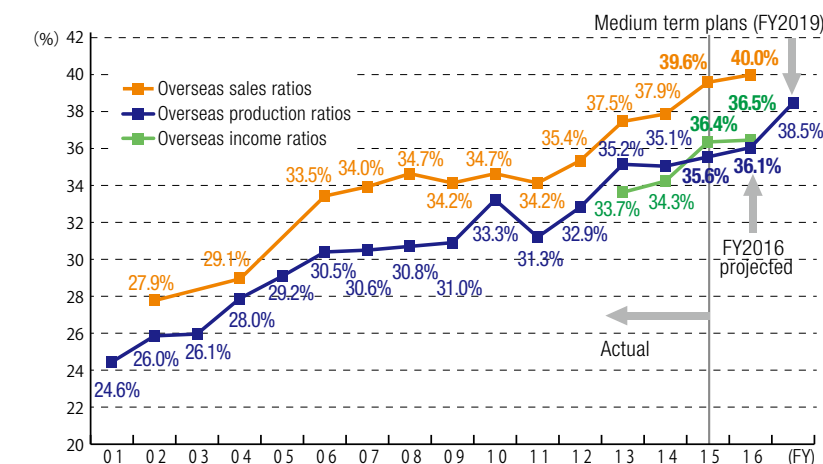
Overview Commitment to expanding overseas production and sales remains unchanged

The ratios of overseas production, overseas sales, and overseas income rose in 2015 as they did in the previous survey (Fig. 1). Japanese manufacturing companies maintain the policy of expanding overseas production, and the trend of placing importance on the ratio of overseas production and overseas income remains unchanged.

The ratio of companies intending to "Strengthen/expand" overseas operations was 76.6%, remaining at a high level in spite of a slight decline from the previous year. Meanwhile, the response ratio of "Maintain present level" rose to 23.0% from 18.0% in the previous year.

■ The ratios of overseas production, overseas sales, and overseas income continued to rise. The policy of Japanese manufacturing companies to expand overseas production and overseas sales remains unchanged.

Figure 1: Ratios of Overseas Production, Overseas Sales and Overseas Income



Trend 2 Upward trend to “strengthen and expand” domestic operations Differences in roles of R&D bases between industries

With regard to the medium-term prospects for domestic operations, the response ratio of “Maintain present level” was the highest (58.3%) as in the previous year, while that of “Strengthen/expand” has continued to increase gradually since FY2011, reaching 34.0%, rising above 30% for the first time in six years. In addition, 92.8% of respondent companies which plan to strengthen overseas business indicated that they would “Strengthen/expand” or “Maintain present level” of their domestic operations. According to a recent study, increasing the level of overseas development will help companies accumulate experience and know-how abroad, and working to meet overseas demand will help companies increase their overall profitability of their business including the domestic business.

Moreover, as for the medium-term budget of R&D bases by countries and regions, the response “increasing R&D budget in Japan” is the highest, showing that the center of R&D will continue to be in Japan (Fig. 3-1). However, the degree differs considerably between industries:

Europe/America show a trend of increasing the R&D budget in the automobile industry, and India does so in the electrical equipment and electronics industries (Fig. 3-2). In the case of the automobile industry, this is because Europe and America are well ahead of Japan in improving the infrastructure including road testing of automated driving, which has been a focus of development in recent years. It is also because Japanese companies intend to conduct R&D by studying the trends of American IT companies including Google which is ahead of Japan in developing automated driving. The following comment of auto parts manufacturing company B reveals the growing trend of increasing R&D budget in Europe and America.

As various types of companies including IT start to enter the automated driving industry, as a supplier we are closely monitoring which companies will become the de facto standard. In the auto industry, smartphones are replacing car navigation, and electron mirrors are also under development. The structure of the industry pyramid consisting of Tier 1, Tier 2, and Tier 3 suppliers with the manufacturers of completed automobiles at the top is changing greatly, and we have to figure out carefully who will be the winner.” Company B is keeping a close watch on open innovation and is ready to adapt to the trend faster than competitors.

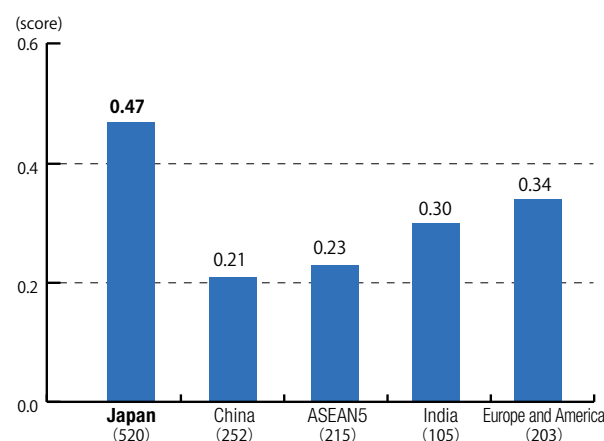


We hope that this survey will help companies that are planning to expand overseas to solidify their positions as they do so. (Yamazaki)

amid consisting of Tier 1, Tier 2, and Tier 3 suppliers with the manufacturers of completed automobiles at the top is changing greatly, and we have to figure out carefully who will be the winner.” Company B is keeping a close watch on open innovation and is ready to adapt to the trend faster than competitors.

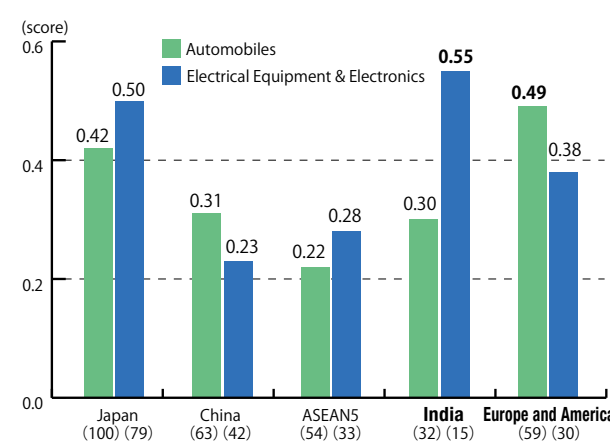
■ Looking at the medium-term budgets of R&D bases, the most common response was “this will be increased in Japan.”

Figure 3-1: Medium-term Budget of Research and Development Bases (All companies)



■ Europe and America surpassed Japan in automobiles, while India surpassed Japan in electrical equipment and electronics.

Figure 3-2: Medium-term Budget of Research and Development Bases (Industries)



Trend 3 Roles of production base expanding to include development of local human resources

The expected roles of production bases both domestic and overseas are changing. As for the expectations of respondent companies regarding the roles of their production bases, both “To improve the production process and bring these improvements and know-how to other production bases” and “To train human resources/To transfer skills” were the highest, accounting for 60.4% of responses. In addition, it is notable that companies expect to place the role “To train human resources/To transfer skills” not only to production bases in Japan and Europe/America (15.4%) but also to those in ASEAN5 (13.1%).

In reality, an increasing number of companies picked “Enhance quality of local human resources”, “Give chances of promotion to local staff/managers” and “Delegate authority to local staff/managers” as an increasingly important activity for the next three years compared with in the past three years (Fig. 5). From the viewpoint of reducing labor cost and maintaining and improving the motivation of local human resources, Japanese companies are showing a positive attitude toward developing and promoting local human resources.

Supporting this trend, an optical manufacturer told us “Experienced engineers used to pass on skills to new hires within Japan, but we have now been doing this in Bangkok since one or two years ago.” And an infrastructure manufacturer told us “We have only demand for maintaining obsolete

products in the domestic infrastructure market, but there is huge demand for new business in emerging countries. A core part of engineering in the future will be to pass on what we have accumulated since the end of World War II to local material suppliers.”

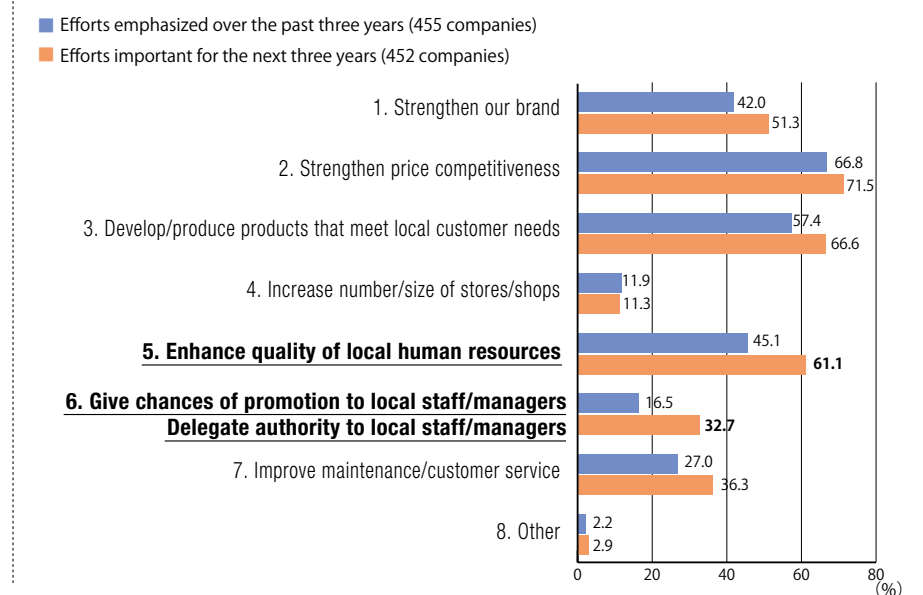
As mentioned above, Japanese companies expect their overseas production base to serve as a base for human resource development and skill transfer, while maintaining and strengthening their domestic business including R&D and increasing profitability by expanding overseas bases as

a bridgehead for developing overseas sales channels to succeed in the intensifying competition with foreign companies.

Although not stated in the trend analysis, this year’s survey report discussed the issues of supply chains and responses to the risk of discontinuing the supply of parts and raw materials. It is helpful to know the approach of Japanese companies involved in global supply chains which are becoming increasingly sophisticated and complicated.

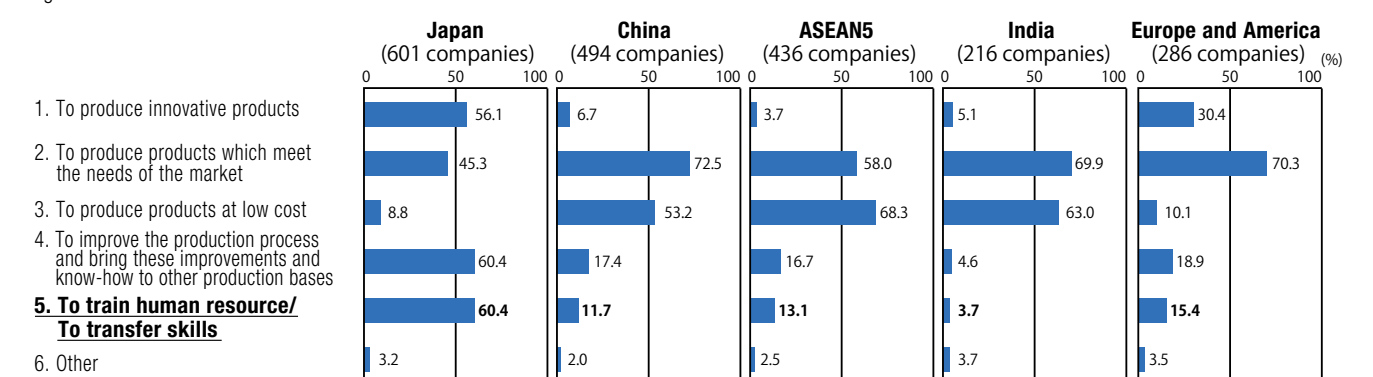
■ More companies are addressing the issues of improving quality of local human resources, promoting them and transferring power to them.

Figure 5: Efforts Having Impact on a High Sales Share of Major Products



■ ASEAN5 receives the third highest response ratio of 13.1% as the production base “To train human resources/To transfer skills,” following Japan and Europe/America.

Figure 4: Medium-term Roles of Production Bases






Trends of promising countries in the medium term

TOPICS

We asked the surveyed companies to select up to five countries and regions that they consider promising over the medium-term. The table below shows the top 10 countries. Of these, we selected India and Myanmar to present the insights of JBIC staff and Japanese companies which are closely and directly involved in these two countries.

Figure 6: Promising Countries/Regions for Overseas Business over the Medium-term

Ranking			Country/Region (Total)	No. of companies		Percentage share(%)	
2015	→	2016		2016 483	2015 433	2016	2015
1	-	1	 India	230	175	47.6	40.4
2	-	2	 China	203	168	42.0	38.8
2	▼	3	 Indonesia	173	168	35.8	38.8
5	▲	4	Vietnam	158	119	32.7	27.5
4	▼	5	Thailand	142	133	29.4	30.7
6	-	6	Mexico	125	102	25.9	23.6
7	-	7	USA	93	72	19.3	16.6
8	-	8	Philippines	51	50	10.6	11.5
10	▲	9	Myanmar	49	34	10.1	7.9
9	▼	10	Brazil	35	48	7.2	11.1



Masashi Kishioka
Director
Division 2
Social Infrastructure Finance Department
Infrastructure and Environment Finance Group



India was ranked first among promising countries over the medium-term, with the percentage share of 47.6%. This means that about half of the companies that gave a response named India. In the following discussion, a JBIC staff member in charge of relationship management between India and Japan talks about the attractive points and challenges of India, business expansion by Japanese companies in India, and the trends and future prospects for domestic reforms in India.

Long-term investment is the key to determining expansion

India has been selected as the most promising country in the medium term in this survey for three consecutive years. The survey results indicate "Future growth potential of local market (85.2%)" and "Current size of local market (30.9%)" as the most popular reasons for the selection. India has huge domestic demand due to a population of 1.3 billion people with steady GDP growth at 7.0% (year-on-year) for the period between October and December 2016 (figure released by the Office of the Registrar General & Census Commissioner, India). As India is expected to grow steadily, it is highly expected as a new growth frontier replacing China and ASEAN.

The number of Japanese companies operating business in India is 1,305 (as of October 2016, figure released by the Japanese Embassy in India), and it has increased steadily every year for the past 10 years. However, the absolute number of bases of Japanese companies in India is about

one eighth of those in China. That is to say, business has not expanded as much as expected.

The above trend can be attributed to many challenges including "Underdeveloped infrastructure (51.4%)" and "Execution of legal system unclear (35.4%)." The Modi administration has been working on improving infrastructure as a political issue. However, India is the world's largest democratic country and it focuses on policies with the consensus of 1.3 billion people. Therefore, it is not easy to acquire land for building infrastructure, and it is hard to invest labor and capital intensively to improve infrastructure rapidly.

Nonetheless, the Modi administration has implemented "Make in India" (designed to promote India's manufacturing industry by attracting inward direct investment) and "Skill India" (designed to improve skills through projects to develop professional abilities of mainly young people). It has also introduced a succession of

reforms that include the introduction of GST (goods and service tax), simplifying the traditional complicated taxation system, and demonetization (the elimination of high-value notes to eradicate black money). These measures are expected to make steady progress in solving various issues.

Relations between Japan and India are strengthening, but are still not so widespread in view of the economic scale of the two countries. Japanese companies are preparing to gain access to the Indian market gradually, though there is a gap between high expectations and the reality. This characterizes the current stage of business between Japan and India. It takes time to customize the Japanese model to fit India. The key to determining whether to expand into India, where it is often said to take 10 years to make a profit, is whether a company can make long-term investments and take a long-term approach.



Yoshiharu Hinata
Director
ATSUMI MYANMAR CO., LTD.



Ranked 9th in the survey, Myanmar rose up the rankings and gained a larger share of the votes from last year, attracting more attention than other ASEAN countries. Although the country is going through rapid urbanization and construction of industrial complexes, not so many companies have branched out to Myanmar yet. Under such circumstances, Atsumi Myanmar Co., Ltd. entered Myanmar and has maintained a stable operation of a plant, and plans to expand production further. Following is an interview with Mr. Hinata, Director of Atsumi Myanmar Co., Ltd.

Sales to start soon in Myanmar, with a view to expanding globally

Interview ATSUMI FASHION CO., LTD. (Himi City, Toyama Prefecture)

Founded in 1982, Atsumi Fashion is a small and medium-sized enterprise specializing in the production and sales of clothing mainly for women. We established joint-venture companies in Thailand and Vietnam (both now liquidated), and were one of the first in the industry to set up a manufacturing base in China (1987) and Malaysia (2008). However, as production costs are now rising in China, our main overseas manufacturing base, we established a joint venture company, Atsumi Myanmar Co., Ltd. (AMC), with a local company in Myanmar because it has a geographical advantage for exporting to Asian countries, as well as an abundance of inexpensive labor.

We considered Cambodia, Thailand and Vietnam as candidate sites, and finally selected Myanmar because a Japanese-affiliated clothing manufacturer with which we are doing business strongly expected us to expand into Myanmar. We had discussed this in the past but gone no further because Myanmar was then under economic sanctions. Finally, we decided to establish a joint venture company with my Burmese friend of 20 years, Mr. Maung Maung Kyi.

The location is Tirawa Industrial Park, the first large-scale industrial park in Myanmar. We chose it because it has good supporting infrastructure including an electric power plant and is designated as a special economic zone (SEZ) that does not require complicated procedures to obtain approval for investment. We asked Mr. Maung to select a company for constructing the plant. Myanmar does not apply in-

ternational building codes, but buildings in the SEZ are required to comply with international standards. For this reason, we were asked to modify the application several times before gaining approval to set up our plant, which would be constructed by a local Burmese construction company. This lengthened the construction period considerably, and the plant was finally completed in June 2016 and approved the following month. Now, the plant is being operated as a manufacturing plant in the true sense of the word.

At present, overseas production accounts for 95% of the total production of the group, of which China accounts for 80%. We plan to increase AMC's production ratio of total overseas production to 50% in a few years and expand AMC's business to make it our base for global transactions, selling our products not only in the Burmese market but also worldwide. The Burmese women's cloth-

ing market is polarized between luxury brand products and low-quality, low-priced products. Because there are few fashionable products for middle-class consumers, which constitute the large-volume zone in Myanmar, AMC has excellent growth potential in Myanmar. We believe that owning its own manufacturing plants gives us an advantage for design development and cost competition.

The current challenge that we have to address is training employees. In Myanmar, some people cannot even write their own name, do not work without being given instructions and will readily move to another company in the same industry that offers higher wages and better benefits. Basic compulsory education is vital not only for our company to grow, but also for Myanmar to grow as a country. We will need to provide training for employees if we are to promote local employees to managerial positions.



Inside the plant of AMC



Contributing to India's nation-building with high-quality concrete products

Courageous challenge by cross-border relationship based on trust

In India, which is enjoying rapid economic growth, the demand for concrete construct to improve its infrastructure including roads, ports and bridges is rising. Amid this dynamic situation, two Japanese small and medium-sized enterprises (SMEs) with technology for manufacturing high-precision, high-quality concrete products jointly branched out to India, and started production and sales locally. Since orders for concrete products are usually placed with local companies, no other Japanese manufacturers of concrete products had entered India. However, an encounter with young Indian entrepreneurs who put their hearts into building the nation made the two CEOs decide to take on a courageous challenge.



The plant of Fuji Silvertch Concrete Private Limited



First shipment of concrete products

SMEs working together to develop business in India

Toyota Kohki, which manufactures and sells concrete forms for making concrete products, and Fuji Concrete Industry, which manufactures and sells concrete products, are working together to develop their business in India which has a population of 1.3 billion. Fuji Concrete Industry manufactures and sells precast concrete products*1 using forms made by Toyota Kohki. According to Mr. Toyoda of Toyota Kohki, the CEOs of the two companies have a long relationship of strong trust, also as shown by Mr. Irie of Fuji Concrete Industry who said, "I work closely with Mr. Toyoda, and ask him for advice even on subjects other than business." The two companies jointly set up an Indian company, Fuji Silvertch Concrete Private Limited (FSC), to manufacture precast concrete products in

Ahmadabad in the state of Gujarat together with an Indian company.

The two companies had been exploring the possibility of expanding overseas amid the decreasing demand for concrete products in Japan. About two years before setting up FSC, Toyota Kohki established a wholly-owned subsidiary, Toyota Forms India Private Limited (TFI), to manufacture concrete forms in India. The relationship Mr. Toyoda built up with an Indian businessman in the process of establishing TFI gave him the confidence to take on the challenge of launching a joint venture project.

Strong trust boosts business

"A business cannot grow without trust with local partners," said Mr. Toyoda and Mr. Irie unanimously. An encounter between Mr. Toyoda and Mr. Rajkumar Oswal marked the start of the relationship. Mr. Toyoda was introduced to Mr. Oswal

by an Indian associate who was working as an assistant in a booth at an exhibition for construction machinery in Mumbai in February 2013 at the time of registering his company. Mr. Oswal was the person responsible on the Indian side in the negotiations with world-famous companies including Honda Motor on expanding in India. He has a great deal of experience of working for multinational companies, and is a man of faith and integrity.

Interested in his personal history and character, Mr. Toyoda asked Mr. Oswal to help him launch TFI. At the time, Mr. Oswal was 69 years old, having retired before becoming even 50. He liked Mr. Toyoda's idea, became the advisor of TFI, and subsequently became a director. The strong tie between the two men led to a new business opportunity.

TFI gradually started to receive requests from local Indian precast manufacturers to visit Japanese manufacturers of concrete products. In particular, Mr. Brijesh Shah, who is a young top executive of a 60-year-old

company that manufactures concrete products, wished to learn sophisticated technologies abroad and introduce them to India to help develop India's precast industry and improve the country's infrastructure. He strongly expressed his wish to visit Japan through Mr. Oswal, with whom he became acquainted following an introduction from a consultant. His ambition finally led to a visit to Japan by a group of top executives of Indian companies, including himself. During the tour, Mr. Toyoda showed the group around the plants of Fuji Concrete Industry and his own company. Amazed by the sophisticated manufacturing technology using high-fluidity concrete*2 as well as excellent product quality and high productivity, Mr. Shah immediately asked Mr. Toyoda to help him launch a new precast company jointly with Japanese companies including Toyota Kohki. He also asked Mr. Oswal for support.

Moved by the aspirations and sincere personality of Mr. Shah, Mr. Toyoda agreed with the idea of establishing a new company to realize his wishes. However, he considered that his company could not help him, because it already had a commitment as a concrete form manufacturer that had already established a subsidiary for manufacturing forms in India. Therefore, he passed Mr. Shah's request to Mr. Irie of Fuji Concrete Industry and suggested that Mr. Irie should take on the challenge of expanding into India. Mr. Irie immediately agreed to the idea, considering that his company could contribute to the growth of India by providing high-quality concrete products and in particular because the request came from Mr. Toyoda. After several negotiations with the Indian side, the Japanese side agreed to establish a new joint company among the two Japanese companies and one Indian company, finally founding FSC in March 2015. Mr. Irie became chairman, Mr. Shah became president, and Mr. Toyoda, Mr. Oswal and the father and son of Mr. Raval, who are relatives of Mr. Shah and influential figures in

the local community, became directors. The arrangement truly symbolizes the trust between Japan and India.

Aiming to be the largest precast company in India

FSC's plant was completed on January 25, 2016, just seven months after construction started. This was exceptionally quick, as it usually takes much time and effort in India to acquire land and construct a plant due to the complicated legal system. It would never have been possible without the support from the construction company managed by Mr. Shah and from Mr. Raval who is a developer. In addition, financing by JBIC was used for the plant construction. Mr. Irie highly praised JBIC, "We have never done business with JBIC before, and were amazed by its speed. Thanks to their expertise in overseas financing, we could receive funds in just two months."

Overseas expansion is a major step that determines the direction for SMEs. Mr. Toyoda emphasized, "We had some concerns, but they were outweighed by the possibilities in India. Japanese manufacturing technology is the best in the world. Even SMEs can do a lot of things in foreign markets. We just need the courage to take a step forward, as well as ties with local people." The new plant commenced operation in March 2016 and business is now going smoothly. FSC aims to become the largest manufacturing and sales company of precast products in India. The new company is a challenging pioneer.

*1 Precast concrete product: Concrete products that are accurately mass-produced at a plant, rather than being manufactured at the building and construction site (cast-in-place concrete).

*2 High-fluidity concrete: Concrete that does not require compaction using a vibrator during placement because it is highly fluid. To maintain quality, it requires unique technology to adjust the amount of water, etc. depending on the weather conditions.

Relationship with JBIC

JBIC signed a loan agreement in July 2015 worth USD 1.65 million (JBIC portion) with Fuji Silvertch Concrete Private Limited, an Indian company jointly owned by Toyota Kohki Co., Ltd. and Fuji Concrete Industry Co., Ltd. The loan is cofinanced with The Tama Shinkin Bank.



Minoru Toyoda

President

Toyota Kohki Co., Ltd.

Name	Toyota Kohki Co., Ltd.
Established	1966
Capital	53.5 million yen
Business lines	Manufacturing forms for manufacturing concrete products Manufacturing and construction of equipment for continuous manufacturing of concrete products
Headquarters	6-12-8 Yotsuya, Fuchu-city, Tokyo



Shunsuke Irie

President

Fuji Concrete Industry Co., Ltd.

Name	Fuji Concrete Industry Co., Ltd.
Founded	1970
Capital	40 million yen
Business lines	Manufacturing, sales, and design of secondary concrete products
Headquarters	7552-2 Nagano, Higashikawanobori-cho, Takeo-city, Saga Prefecture

Supporting Japanese Participation in a Geothermal Power Project in Indonesia by Providing Project Financing

Indonesia has been actively introducing renewable energy under the government's policy to diversify energy sources to meet the growing demand for power, focusing on geothermal power in particular. Despite having the world's second largest geothermal resources, it uses less than one third of the U.S., which is the world's largest user of geothermal power for generation. The Muara Laboh geothermal power project, in which Sumitomo Corporation and other companies are participating as investors, is a landmark project in Indonesia which has high potential for geothermal development. JBIC's project financing supports to make it a reality. The staffs in charge of this project talk about risk analysis for project financing for geothermal energy and the future prospects.

An article related to this project was published in the morning edition of The Nikkei on January 27, 2017.



Well test for steam and hot brine production

—This is the second time for JBIC to provide project financing for a geothermal power plant project in Indonesia after the Sarulla Geothermal Power project in 2014. What is the difference between the projects in terms of financing and what aspects of the project required your ingenuity?

►Abe Usually, project financing is characterized by its financing scheme, which limits the source of repayments to come from the cash flow created by the project itself. The Muara Laboh geothermal power project is based on the framework set up for the Sarulla geothermal power project with some modifications to suit its specifics. In terms of scale, while the Sarulla project has the world's largest class geothermal power generation capacity of 320 MW and co-financing amounted to USD 1.17 billion, the Muara Laboh project is smaller, with a power generation capacity of 80 MW and co-financing amounting to USD 439 million.

In order to provide project financing, it is important to analyze and control various risks that affect the cash flow created by the project. In the case of project financing for geothermal power generation, we have to consider risks specific to geothermal power including the "risk of geothermal resources" in addition to risks peculiar to a power generation project, such as the completion risk involved in constructing the power plant and off-taker risk concerning non-payment by the buyer of power. In this project, the risk of geothermal resources was the most difficult issue we had to address.

In geothermal power generation, because steam and hot brine are taken out from the reservoir several thousand meters below ground for a long time, it is hard to be sure whether they will keep delivering steadily. Moreover, the layer structure and underground heat quantity vary greatly with the location. For example, after five years the eruptive volume may decline by 5% in some places but by 10% in others. Accordingly, we held detailed discussions on reasonable assumptions and the risks acceptable to JBIC.

►Anan In addition, simply confirming the existence of a geothermal resource alone is not enough to run a project for as long as 30 years. The output may decline due to the decreased production of steam and hot brine, or loss of injectivity in injection wells after the start of operation. In this project, therefore, West Japan Engineering Consultants, Inc., which is the world's technology leader in geothermal power generation, will help analyze the steam and hot water for a long period after the start of operation.

—Are there any specific technological features in this project?

►Abe In this project, the "dual flash" system is used for the first time in Indonesia. While the standard geothermal power generation separates hot brine from steam only once before the steam is directed to a turbine, the dual flash system separates them twice to utilize more steam. This increases the generation efficiency because the generation

amount (output) is increased with a smaller amount of steam.

—Please tell us about the current situation of the project and future prospects for geothermal power generation development in Indonesia.

►Anan Construction started in March 2017 and is scheduled to finish in mid 2019. With many active volcanoes, Indonesia has the world's second largest geothermal resources, but has not developed the industry as much as in other countries. Indonesia needs to keep developing geothermal power generation to cope with the increasing demand for power, and so the Indonesian government is drawing up support policies like a policy to increase the purchase price of geothermal power.

—JBIC is expected to keep extending support.

►Abe The Muara Laboh geothermal power project has been made possible by the combination of the management know-how of overseas power generation projects of Sumitomo Corporation, consulting expertise on geothermal power technology by West Japan Engineering Consultants, and financing from three Japanese banks, JBIC, and Nippon Export and Investment Insurance. This project is significant because Japanese companies and organizations are working together as a Japanese team to develop high-quality geothermal infrastructure in Indonesia.

At present, coal fired power generation supplies about half of all power in Indonesia. The Indonesian government has been actively investing in environmentally-friendly technology on a long-term basis,

Project Financing for Muara Laboh Geothermal Power Project in Indonesia

Supporting of Renewable Power Generation Businesses by Japanese Company in Collaboration with the Asian Development Bank and Other Financial Institutions

The Japan Bank for International Cooperation (JBIC; Governor: Akira Kondoh) signed on January 26 a loan agreement, for project finance, amounting up to approximately USD198 million (JBIC portion), with PT. Supreme Energy Muara Laboh (SEML), an Indonesian company invested in by SUMITOMO CORPORATION and other entities for Muara Laboh Geothermal Power Project. The loans are cofinanced by three private financial institutions, Mizuho Bank, Ltd., Sumitomo Mitsui Banking Corporation, and The Bank of Tokyo-Mitsubishi UFJ, Ltd., as well as the Asian Development Bank (ADB), bringing the total cofinancing amount to approximately USD439 million. Nippon Export and Investment Insurance (NEXI) provides insurance for the portion cofinanced by the private-sector banks.

In this project, SEML will construct, own, and operate a geothermal power plant with a capacity of 80MW in the South Solok Regency in West Sumatra, Indonesia, and will sell electricity generated by this plant to PT. PLN (Persero), a state-owned power utility in Indonesia, for a period of 30 years.

This loan supports an overseas infrastructure project in which Japanese company not only participate as investors, but also operate and maintain a power plant over a long period of time, using advanced Japanese technologies. This loan thereby contributes to maintaining and strengthening the international competitiveness of Japanese industries.

This loan is also in line with the Japanese government's strategy of promoting Japanese involvement in

projects that include the design, construction, operation, and management of infrastructure. Furthermore, the same applies to "Actions for Cool Earth: ACE2.0", announced in November 2015, which aims in assisting developing countries that are taking measures against climate change. This is the second project in which JBIC has provided project finance to a geothermal IPP project in Indonesia, after the Sarulla geothermal power project.

In order to respond to the country's surging electricity demand, which has increased in line with steady economic growth, the Indonesian government has committed to promoting its "35 GW power plants development plans" for five years, from 2015 to 2019, and this project is positioned as a part of that plan. The government has been actively promoting geothermal power generation, which taps into the country's rich geothermal resources, including the issuing of a new law for geothermal power production in 2014. By generating a steady power supply, which contributes to climate change mitigation, this loan is also expected to support Indonesia's economic development as well.

As Japan's policy-based financial institution, JBIC will continue to financially support the expansion of overseas infrastructure business of Japanese companies, in collaboration with multilateral financial institutions, including ADB, by drawing on its various financial facilities and schemes for structuring projects, and performing its risk-assuming function.

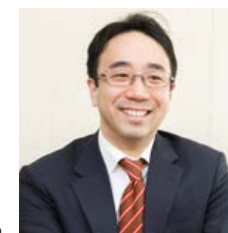
* Press release of JBIC, January 30, 2017



Excavation by rig

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