

# **Challenges Facing the Rebirth of Japanese Manufacturing: Part 2**

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VI Challenges Facing the Rebirth of Japanese Manufacturing

The importance of manufacturing has again come to be recognized not only in Japan, but also in the United States and Germany in their pursuit of economic globalization and because of growing expectations for greater innovation, growth in domestic employment, higher incomes and other economic multiplier effects that manufacturing could have on other industries.

German companies have created a business model enabling the design and development of products that are tailored to meet local needs in emerging economies even with limited development resources available there, and have continued to gain momentum in these markets. In the United States, both the public and private sectors work toward developing the next generation of manufacturing such as creating services through the integration of IT and manufacturing. The moves of these two countries provide a valuable source of inspiration for Japan's manufacturing industry.

Among emerging economies, the presence of China has overwhelmed all others. While Japanese companies that are already operating in the Chinese market have been struggling in the face of fierce competition from local businesses, the fact remains that the Chinese market still presents immense potential. In inland China, which has huge growth potential, there is a wide range of growth areas where first-mover advantage can be attained. Companies should actively explore the possibilities without pessimism. While India also presents a very large potential market, the pace of growth is not as fast as that in China. For the time being, given the rich engineering talent that the country possesses, focus should be given to the country not just as a market but also as a design and development center aimed at emerging economies.

In order to successfully respond to the diversification of the global market that includes developed and emerging markets, a need exists for the establishment of a system whereby all business processes ranging from marketing to product planning, design, development and production are carried out in local markets. This full localization cannot be achieved by Japanese executives alone. Rather, human resources should be recruited on a global scale, and a personnel management mechanism whereby employees can be trained up to management level is required.

## IV Betting on the Last Frontier of China's Market

When thinking about the future growth of Japan's manufacturing industry, strategy aimed at emerging economies is very important. In particular, how to build a business model for China, which is the largest of such markets, as well as for second-largest India, presents pressing issues. In China, Sino-Japanese political risks exist. In India, even though potential demand is enormous, the fact that the dominant demand is still for low-end products provides little opportunity for Japanese companies to generate a profit. While neither country is an easy market for Japanese companies, it is unreasonable to ignore them.

### 1 China presents an increasingly severe business environment

In 2012, the working-age (15 to 59) population of China fell by 3.45 million relative to the previous year. This was the first time that such a decline had occurred since the country was founded. In addition, the number of people in their 20s, currently standing at 230 million, is expected to peak around 2015. After that, a sharp decline will begin, falling to around 160 million by around 2030. China is said to have already passed the Lewisian turning point in that the entire surplus labor force has already been absorbed by industry. Furthermore, with the trend towards a decline in working-age population, China's abundant labor force is set to become a thing of the past. In addition, increases in labor costs are expected to continue for some time because the government has been promoting a policy of raising workers' wages to address income disparity. Coupled with anti-Japanese sentiment, labor management by Japanese companies in China has become increasingly difficult. For Japanese companies, the attractiveness of the competitive position of "China as a production base" is rapidly being lost.

What is more, the same can be said of "China as a market." Each year presents Japanese companies with an increasingly competitive environment. Senior consultant Taku Ogata of Nomura Research Institute Shanghai points out that this is a set of four problems faced by Japanese companies doing business in China.

The first problem is the cutthroat competition involving Chinese companies that are supported by government subsidies. Even private-sector Chinese companies receive generous support from the central and local governments in the form of financial support for research and development, incentives for listed companies and human resource development grants, as well as financial support and preferential tax treatment offered by local governments in return for their moves into relevant local markets. Our research has revealed that a leading Chinese machinery manufacturer has received

government subsidies totaling 10 billion yuan per year when it is entitled to receive these subsidies. Those companies that receive such support suddenly exhibit rapid growth. Faced with competition from such companies, Japanese companies are very unlikely to succeed. Because Chinese companies have improved their product competitiveness, they have continued to gradually take over the market share previously held by foreign companies.

The second problem is change in the power relationship between manufacturers and sales channels. Unlike in the past when it was possible to achieve differentiation based only on product appeal, sales channels are less reliant on manufacturers. Conversely, manufacturers face a situation where they cannot survive competition if they do not have access to good quality sales channels. Because Japanese manufacturers have tended to lag in localizing their business operations, they are not so proficient at managing their sales channels. Before the power relationship changes and sales channels have predominance over manufacturers, necessary actions must be taken such as investing in existing agents and signing long-term strategic partnership agreements.

The third problem is the delay in moving into the inland markets. In China, the areas having high growth potential continue to shift inland from the coastal areas. However, the "Japanese style" would not be accepted in the inland areas although it has been accepted to some degree in the coastal areas. Therefore, some Japanese companies, which have been slow in hiring local people for managerial positions, have little interest in expanding inland or are unable to do so even if they are interested because they do not know the local way of doing business there.

The fourth problem relates to the political risks associated with prolonged anti-Japanese sentiment in China. China's hard-line stance against Japan under China's current political system seems set to continue for a long time, causing consumer affinity toward Japanese brands to be adversely affected and leading to increased difficulties in employee management within a Japanese company operating in China. To increase business performance by overcoming these difficulties, the localization of business operations is essential without a second thought.

Given this background, Ogata maintains that over the next few years, Japanese companies must re-examine their business operations in China, and a drastic transformation of strategy is necessary in some cases.

### 2 Business restructuring in the midst of hardships

#### (1) Selection and concentration

It goes without saying that if a company finds that its superior position is being eroded by changes in the competitive environment, it should consider withdrawing

from the market. However, a simple withdrawal is not easy because it raises the possibility of conflict associated with the dismissal of employees, as well as the possibility of having to pay out huge sums in compensation. Furthermore, the relevant government agencies may refuse to provide the required authorization for withdrawal because of concerns over local employment or lost tax revenues.

The issue of paying compensation to employees could be more easily addressed by selling the relevant operations to a third party who would allow the employees to stay in their current positions than simply pulling out of the market. According to a news report, Toshiba virtually pulled out of the Chinese market while maintaining the employment and welfare of its employees by transferring its semiconductor plant in Wuxi to a Taiwan-based company. Similarly, PepsiCo pulled out of the market by selling its business to a Taiwanese beverage manufacturer.

In addition, as a major prerequisite, withdrawal from the market requires the approval of the relevant local government. However, in some cases, a Japanese company maintains the façade of a favorable balance of payments for business in China because of virtual financial support provided by the head office in Japan. In such cases, it is sometimes difficult for a company to receive the approval from the relevant local government for sudden withdrawal. While it is, of course, necessary to handle issues such as paying compensation to the employees with scrupulous care, sufficient time should be taken to carefully explain the situation to the local government. Another required measure would involve calling attention to the value of the plant site either for commercial or residential use, and persuading the local government that withdrawing provides more benefits to the local area than does staying in the market.

Alternatively, if a company ceases operations and becomes defunct, withdrawal from the market is virtually possible. Whatever the case may be, while it is easy to say the words “selection and concentration,” actually implementing this management strategy requires careful planning and taking adequate time.

## **(2) Changing strategy by entering into new partnerships**

Recent years have seen active moves toward rebuilding business and regaining competitiveness through entering into partnerships with Chinese companies. Starting in the summer of 2013, the news featured several such examples. They included a report on the launch of a joint venture between Suntory and Tsingtao Brewery in June. In September, the Nisshin OilliO Group entered into a partnership with the COFCO Group, which is China’s largest food company.

In the case of Suntory and Tsingtao Brewery, the service area of the joint venture is limited to Shanghai and Jiangsu. Under this joint venture scheme, a production

company and a sales company were established with both parties investing in them on a 50-50 basis. Although Suntory held a 40-percent share of the Shanghai market at one time, this share had fallen in the face of increased competition. With the appearance of Chinese competitors, Suntory found itself in a disadvantageous position in terms of the amount of resources available. On the production side, Suntory faced challenges with its limited ability to procure raw materials and the like. On the sales side, it was unable to allocate adequate sales promotion expenses because of its limited sales volume. On the part of Tsingtao Brewery, although the company ranks second in terms of market share throughout China, it was actually running a deficit in the Shanghai and Jiangsu areas and was considering that it would be difficult to single-handedly increase market share in an increasingly saturated market. Given the situations they faced, both companies shared their intentions and entered into a joint venture. Within the joint venture, Suntory is expected to take responsibility for production with an aim of considerably reducing the procurement costs of raw materials by leveraging Tsingtao Brewery’s procurement ability. Given the company’s sales expertise accumulated in local markets, Tsingtao Brewery will be responsible for sales. This case can be called an excellent example of a strategic alliance that can complement each company’s strengths and weaknesses and can solve the different problems respectively faced by the two companies.

A similar situation exists behind the joint venture between Nisshin OilliO and COFCO. In addition to virtual government control over the prices of edible oil, Nisshin OilliO China was up against harsh competition from domestic Chinese companies that receive financial support from the governments. Nevertheless, having an ability to offer high value-added products such as healthful oils, which were not offered by Chinese manufacturers, Nisshin OilliO would still have been able to compete in the market if only it had the necessary sales channels. According to news reports, Nisshin OilliO will sell a 51-percent stake in a Dalian-based wholly owned subsidiary to COFCO, making this subsidiary a joint venture. This alliance will give Nisshin OilliO access to COFCO’s well-developed domestic sales channels and enable Nisshin OilliO to strengthen the sales of its high value-added products and improve its earnings.

The approach common to both of the cases described above is that they are rebuilding their operations in China through the use of Chinese companies’ overwhelming power in terms of procurement and sales based on product competitiveness and technology that Japanese companies possess.

Such moves are not limited to Japanese companies. According to a news report published in October 2013, China Resources Enterprise (CRE), a Hong Kong-listed, state-run major distributor in China, and Tesco, a UK retail giant, have entered into an agreement to combine

their Chinese retail operations. Although Tesco has been operating in the Chinese market since 2004 and has 134 stores, fierce competition has led to the company’s suffering losses in recent years. Considering that single-handed restructuring would be difficult, Tesco signed an agreement to create a retail joint venture, to which all of its Chinese retail operations will be transferred, with Tesco and CRE holding a 20-percent and 80-percent stake, respectively. Tesco will pay about 4.3 billion Hong Kong dollars to acquire 20 percent of the venture. While Tesco’s 20-percent ownership of the new company is expected to produce gains once an initial public offering is made in the future, the company is virtually withdrawing from the Chinese market and transferring its business to CRE.

According to Ogata, as these cases suggest, it has become very difficult for many foreign companies to go it alone in the Chinese market unless they have strong product competitiveness and brand visibility. For their survival in the Chinese market, it will eventually become essential for these companies to partner with a Chinese company, particularly for making up for a weakness in sales.

### 3 Entering the last frontier of China’s market

While the general situation is as explained in Section 2, untapped markets still do exist in China, which offer an infinitely greater potential for growth than do other emerging markets. The ASEAN (Association of South-east Asian Nations) countries together have a population of 600 million. However, the size of the market presented by a single Chinese metropolitan area eclipses that of one of several other Asian countries depending on the population of that area. Therefore, rather than struggling to take on the entire Chinese market, a valid strategy

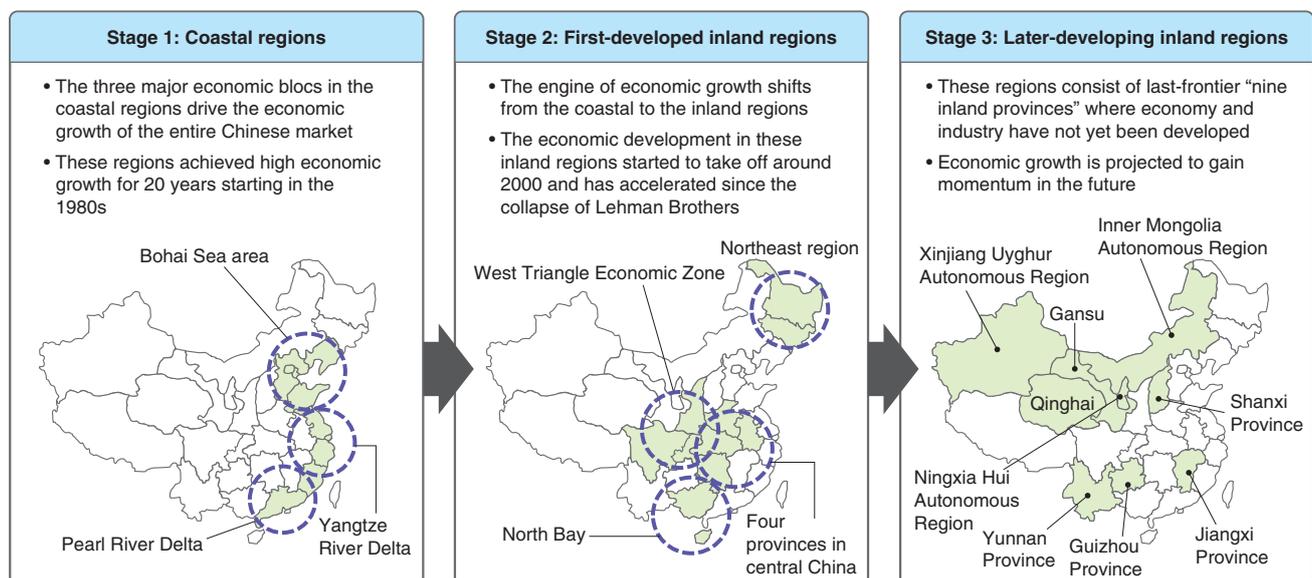
would be to specialize in one particular area and steadily aim for success there.

#### (1) Potential of the later-developing inland market

Nomura Research Institute (NRI) considers the relationship between China’s economic development and its domestic markets as being divided into three stages, as shown in Figure 11. Coastal regions that had driven the growth of the Chinese market during the period from China’s economic reforms and opening-up policy that started in 1978 to the 2000s are defined as falling under Stage 1. The first-developed inland regions where growth has accelerated since the collapse of Lehman Brothers are classified as Stage 2. The later-developing inland regions where growth is expected in the future are categorized as Stage 3. In the Stage-1 regions, because the market is already saturated, companies operating there are exposed to fierce competition, as explained in Section 2. Japanese companies are no exception, and are forced to rebuild their businesses. Currently, the Stage-2 regions are still seen as a driving force of China’s domestic demand, and are the center of the country’s market expansion. The Stage-3 markets are now emerging. In a sense, these markets are the last ones remaining to be developed in China, that is, the “last frontier” markets.

Senior consultant Yi Zhang and his colleagues at NRI’s Global Manufacturing Consulting Department have broken down the later-developing inland regions into prefecture-level cities (prefecture-level cities are an administrative unit below provinces and consist of cities, prefectures and districts). The characteristics of the industrial structure of each of these prefecture-level cities (prefectures and districts) are classified into “manufacturing type,” “resource type,” “tourism type,” “logistics and trade type” and “no industrial infrastructure type.” Based on this classification, per-capita GDP

Figure 11. China’s economic development stages



and disposable household income have been predicted. (For details, see “Chugoku last frontier no seicho potential (Growth Potential of China’s Last Frontier)” Yi Zhang and Yukihiro Ogawa, *Chiteki Shisan Sozo (Knowledge Creation and Integration)*, June 2013, which is available only in Japanese.)

This analysis revealed that the fastest economic development was achieved by the manufacturing type, followed by the resource type, the logistics and trade type and then the tourism type. Because the manufacturing type improves household income uniformly across all income segments, this type makes a greater contribution compared to the other types in terms of intra-regional personal consumption. The resource type causes a large income gap between rich and poor within the region, but is the fastest in terms of creating a wealthy population.

Based on these analytical results, Yi Zhang and his colleagues consider that the later-developing inland regions with many manufacturing-type cities offer promising market potential, and pay particular attention to three areas shown in Figure 12. For example, in terms of the number of households with an annual household income of 50,000 yuan or more, which we call the “middle or higher income” segment and which corresponds to the income level at which consumers will buy their first car, the figure for the Hohhot/Taiyuan area will reach 11.4 million by 2020. At the time of the Beijing Olympics in 2008, we estimated the number of “middle or higher income” households in Shanghai, Beijing and Guangzhou at about 11 million. This means that six

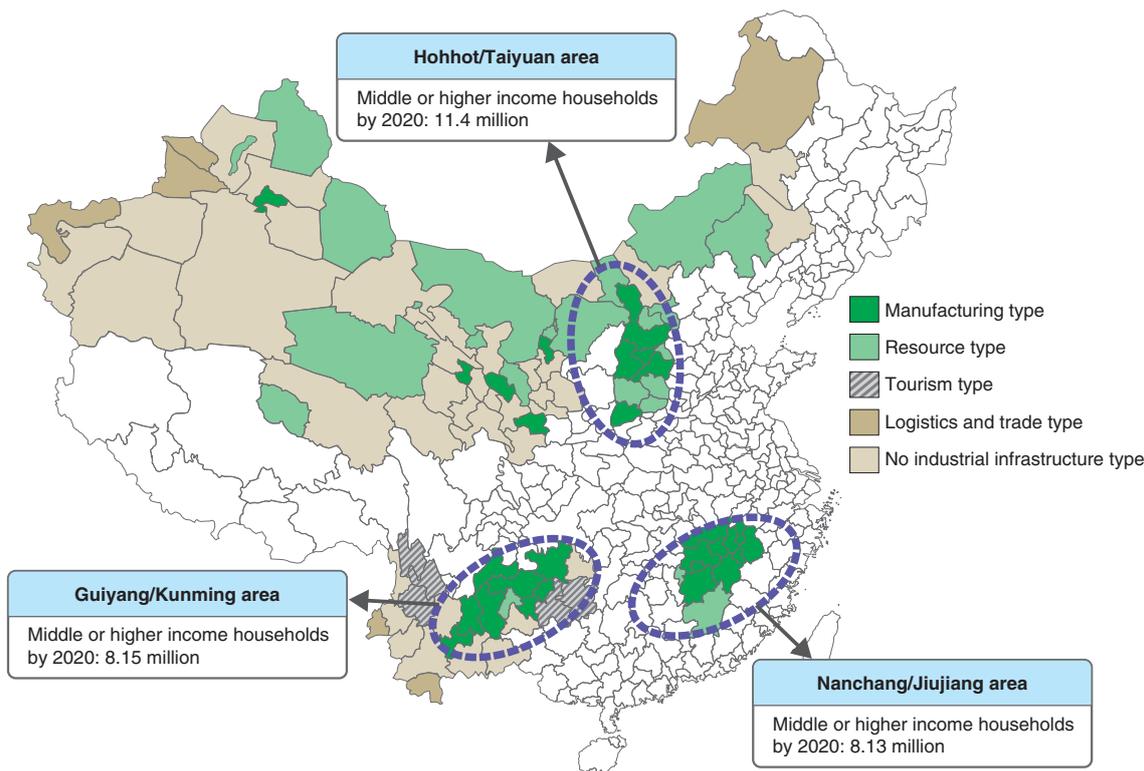
years from now, the Hohhot/Taiyuan area will constitute a market on a scale equal to that of the three major coastal cities at the time of the Beijing Olympics.

**(2) Strategy for expanding into the last frontier markets**

Among Japanese companies, Ito-Yokado entered the market in Chengdu, Sichuan Province in 1997, following Heiwado, which set up operations in Changsha, Hunan Province in 1994. The two companies entered the respective markets when these areas were still frontier markets. Because they moved ahead of other companies, their brands remain overwhelmingly strong even now. This means that first-mover advantages are significant in the last frontier markets. After setting up its plants in coastal regions such as Shanghai, Changchun and Chengdu, as well as in first-developed inland regions, Volkswagen (VW) built its plant in Ürümqi, Xinjiang Uyghur Autonomous Region, and started full-scale operation there in 2013. The company also announced its plan to construct a plant in Hohhot, Inner Mongolia Autonomous Region. By adopting a “Go West” strategy, VW has steadily been establishing its foothold in the later-developing inland regions.

In late November 2013, the author visited the Ürümqi Economic and Technological Development Zone where VW’s plant is located. The total area of the development zone is 480 km<sup>2</sup> and the population is about 270,000. In 2012, the amount of capital investment made in this zone was 25 billion yuan, which led to a remarkable economic growth rate of 20 percent or higher. About

**Figure 12. Noteworthy areas in the later-developing inland regions (Stage 3)**



600 companies have set up facilities in this zone, about 40 of which are foreign companies. However, these 40 are primarily made up of European, U.S., South Korean and Taiwanese companies. Unfortunately, there is not even a single Japanese company. At a ceremony to celebrate the completion of VW's Ürümqi plant, it is reported that VW's representative in China stated: "When we entered China in 1985, no other car companies were interested in the market. At that time, no one could have predicted the degree of motorization that we see in China now. Standing here in Ürümqi, I have exactly the same feeling as we experienced at that time. We believe that a miracle will again definitely happen here." The Xinjiang Uyghur Autonomous Region is bordered by eight countries including Russia, Kazakhstan and Pakistan. VW is pursuing a strategy of aiming not only at those regions of China around the autonomous region, but also at those Central Asian countries bordering the region. No matter what era, the quickest and best way to achieve success in the Chinese market is to be the first to enter.

Dongfeng Nissan has also been accelerating the expansion of its dealer network in the later-developing inland regions. By remodeling its medium-duty trucks into mobile showrooms and creating a caravan of such trucks, the company has been boosting its sales promotion. For its dealers, the company has been increasing the number of small-scale dealers whose showrooms each have the space of around 250 m<sup>2</sup>, where other brand cars can also be exhibited, in place of a standard 1,000-m<sup>2</sup> facility, which includes a factory providing maintenance service. In this way, Dongfeng Nissan has been improving the efficiency of its sales and marketing.

However, it should be noted that later-developing inland markets present some difficulties. These include difficulty in recruiting the required caliber of personnel, hard living conditions and inefficient local government procedures. Consideration should be given to a strategy for future growth in China that consists of quickly entering the market ahead of competitors, carefully developing business while overcoming difficulties and then building a dominant brand in the region.

As described above, although China is a difficult market, opportunity still abounds. To seize such opportunity, for example, in the fields of consumer goods and services, a company should strengthen its defensive approach in the markets where it already has a presence, and should adopt an aggressive approach in selecting and prioritizing new markets. Entering into partnerships with Chinese companies would provide an efficient means of restructuring business. In other cases, some Japanese companies have been expanding their businesses in China by making use of their unparalleled technological capabilities in the areas of industrial goods such as components and materials. In any case, it is necessary to continuously monitor the rapidly changing business environment and review a company's competitiveness.

## V Strategy to Make the Best Use of India's Strengths

The Indian economy is currently in a vicious cycle, with the falling value of the rupee leading to a higher cost of living, and then, increased official interest rates adopted as a measure to deal with such higher prices of commodities suppressing consumers' willingness to buy. April to June 2013 was the third consecutive quarter in which the economic growth rate was less than 5 percent, prompting the World Bank to revise its forecast for the country's growth in FY 2013 downwards significantly, from 6.1 percent to 4.7 percent (published on October 16, 2013).

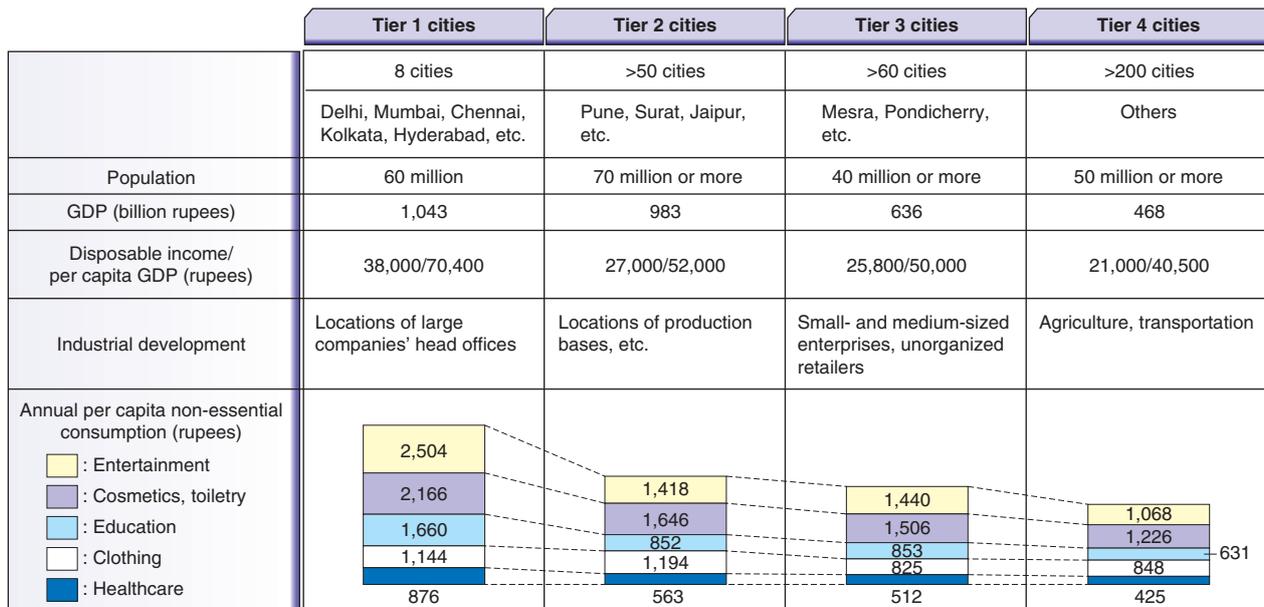
Nevertheless, when we consider the population of India, the potential size of the country's consumer market is enormous. Another advantage that India has over other countries is a rich source of excellent engineers. Any strategy aimed at emerging economies should place India on a par with China in terms of importance.

### 1 Start of the rise of the middle-income segment

NRI has divided India's cities into four groups (tiers) according to the stage of development (Figure 13). Based on this classification, NRI has predicted the growth in the number of middle-income households (those with an annual household income of at least 250,000 rupees) in urban India (Figure 14). It is often said that in the initial stage of motorization, the price paid for a first car is usually about twice the annual household income. That is to say, once the annual income reaches 250,000 rupees, an Indian household is generally in a position to purchase its first car. Forecasts of the number of middle-income households by group point to a rapid increase in Tier 1 and Tier 2 cities. As of 2012, the total number of such households in urban India stood at 12.5 million. This figure is expected to rise to 38 million by 2024.

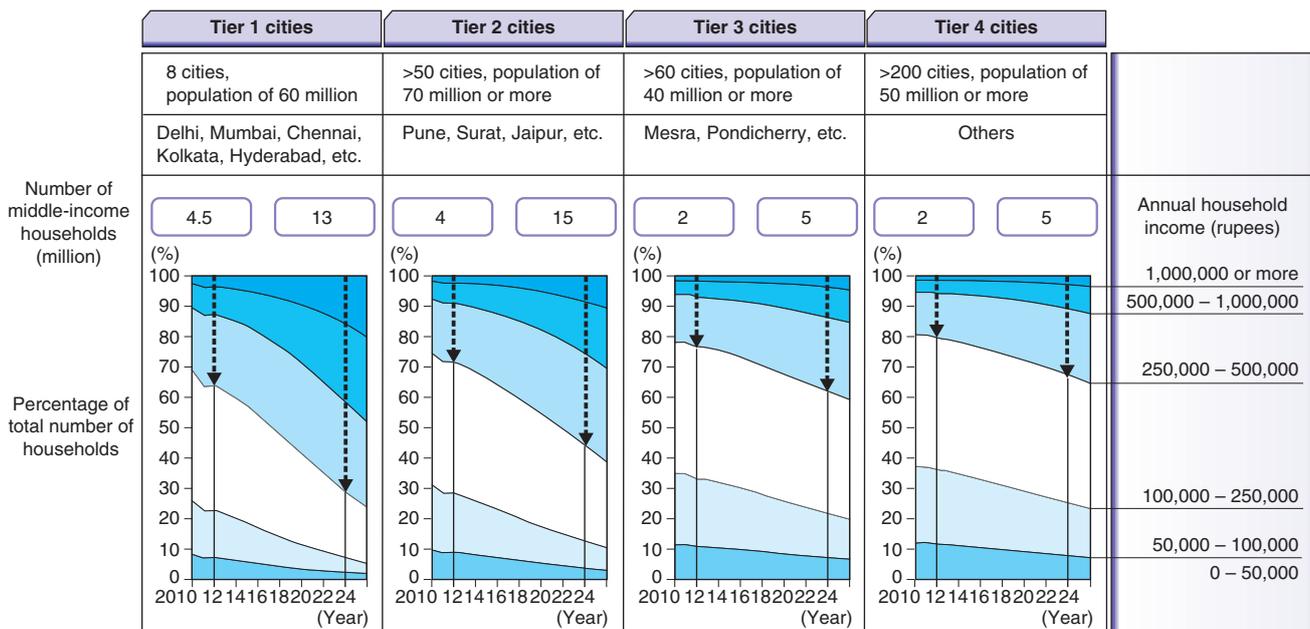
As shown in Figure 15, the 2012 figures for India are very similar to those for China in 2005. However, looking at this comparison in more detail, the transition from middle-income households to high-income households in India is not as rapid as that in China. The shift from low-income to middle-income households is also slow in India relative to China. As such, in general, the pace at which household income is rising in India is slower than that in China. Furthermore, growth in the number of middle-income households still mainly occurs in Tier 1 and Tier 2 large cities. Therefore, unlike China, high-end products with specifications close to those sold in advanced countries will be slow to sell in the Indian market, and the market will not spread rapidly to rural areas. If a company is unable to offer products or services that can be sold at considerably reduced prices, it will not do well in the Indian market.

**Figure 13. Classification of urban India**



Source: Compiled based on data published by the Center for Monitoring Indian Economy (CMIE).

**Figure 14. Projected growth in the number of middle-income households in urban India**



Source: Forecasts by Nomura Research Institute in 2013.

Similarly, it is not reasonable to have too much expectation as to how fast business will grow in India.

## 2 Engineering services outsourcing (ESO)

One of India's undeniable strengths is that it has a huge pool of qualified engineering talent. In 2011, 1.08 million people graduated from India's engineering schools, with 470,000 of these graduating in IT-related fields. In comparison, in China, 2.08 million people graduated from engineering schools in 2011. Although this figure is almost double that of India, India's graduates are all

proficient and capable of working in English, which has led to the development of a business model called outsourcing that draws on this rich source of talent.

While outsourcing is most commonly associated with the IT sector, in recent years, the outsourcing of design and development such as the design of machines and plants is also rapidly growing. The latter has come to be known as engineering services outsourcing (ESO). ESO was initially limited to partial design work such as computer-aided design (CAD) and computer-aided engineering (CAE). However, in recent years, rather than being entrusted with only partial design processes, ESO

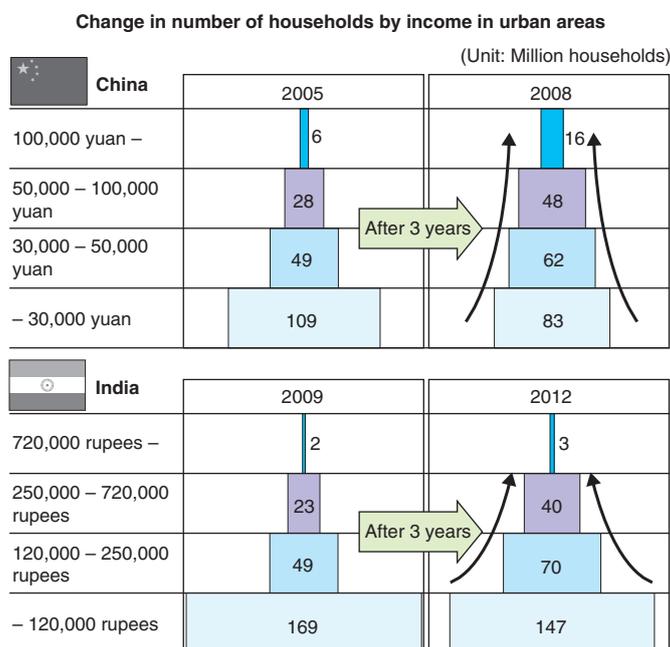
has grown to undertake the entire design processes in which complicated adjustment and coordination are required. Examples include independently designing components, evaluating and improving prototypes and entering into a full turnkey contract for the design of a car's upper body. The ESO companies include spin-out companies that were formerly the design and development departments of automobile manufacturers. Other such companies include those that were outsourced service providers mainly for software development, launched business to undertake outsourced mechanical design work such as CAD and CAE by drawing on its pool of IT engineers, and has expanded the scope of work to include the areas covered by ESO (Figure 16).

India's ESO business is not limited to automobile design, but also handles aircraft CAE. In addition, it embraces designing and prototyping electronic devices and entering into turnkey contracts for the design of copiers. As such, India is moving on from focusing on the area of IT outsourcing to becoming a global hub for design and development outsourcing for manufacturing industries in addition to IT.

### 3 The challenge of frugal engineering

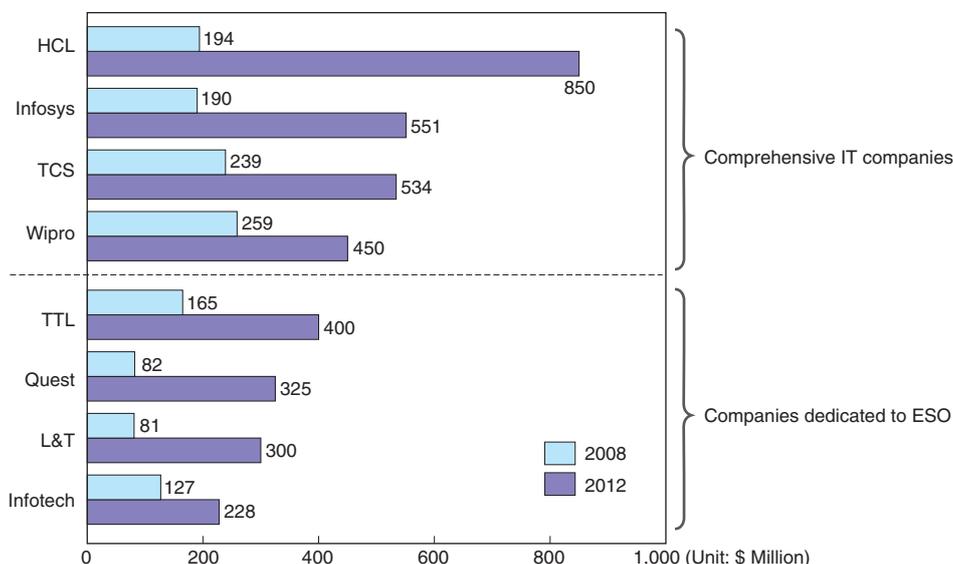
“Jugaad” is a word commonly used in India. It means “devising a solution with whatever resources are available and without anything special” and reflects a mindset

**Figure 15. Comparison between middle-class markets in China and India**



Source: NRI's data on projected incomes.

**Figure 16. ESO sales of top eight ESO companies in India**



Note: ESO = engineering services outsourcing.  
Source: Compiled based on each company's IR and other information.

in India whereby a solution is derived from ingenuity even if available resources are limited.

This spirit is also applied to engineering. Even if the latest and most up to date equipment, parts and materials are not available, design and development are undertaken with the concept of creating low-cost products that satisfy the minimum needs of consumers. This is known as “frugal engineering.” This term was coined by Carlos Ghosn, Chairman and CEO of Nissan Motor Company, when he visited India in 2006. Frugal engineering is also known as “frugal innovation,” which is used to describe the attractiveness of design and development in India. Ghosn noted, “In the West, when we face huge problems and we lack resources, we tend to give up (too) easily. Jugaad is about never giving up.” As described in Section 1, the income of Indian consumers is still low even in middle-income households. In order to develop products that will appeal to these consumers, the Indian talent of frugal engineering must be drawn upon.

For example, in the spring of 2013, Honda launched a small compact sedan called the “Amaze,” which has been selling well. The platform of the Amaze has exactly the same specifications as those of the “Brio,” a car that was developed in Thailand for the Southeast Asian market, while the engine lineup includes a 1.6-l diesel engine that is manufactured in Europe. The same specifications as the European specifications are used for the basic components such as the engine block, and additional design for downsizing was done in India. As such, rather than developing a car for the Indian market from scratch, Honda used a platform from Thailand and an engine from Europe, adding to that an upper body that was designed in India to configure the car. By using whatever resources were available such as bringing in the prototypes from Europe and Thailand and then only performing the India-specific design and development in India, the specifications of the Amaze were adjusted to precisely address the needs of Indian consumers. In addition, costs were substantially reduced by eliminating as many unnecessary functions as possible and using as many locally procured components as possible.

Nissan has re-established the Datsun brand in India by making use of India’s frugal engineering. With a staff of around 3,000, the Renault-Nissan Technology and Business Centre India (RNTBCI) in Chennai undertakes outsourced back-office work, contracted routine tasks such as CAD and vehicle development for the Datsun brand on a project basis. In the same way as Honda, the company is using existing platforms to save time and cost in development. Moreover, by actively making use of digital engineering that draws on India’s IT expertise and relying on ESO to make up for the lack of local development resources, the company has been developing derivative models. In 2014, the Datsun brand developed in India will be offered not only in India, but also in Indonesia, Russia and South Africa. The company announced that from 2015 onward, the platforms for

cars aimed at emerging markets will be developed in India.

Nissan has already been offering two brands, “Nissan” and “Infiniti.” Regarding the third brand developed in India, Datsun, Ghosn stated, “It’s a complement to the Nissan brand. While Infiniti was a complement to the Nissan brand in the premium segment, Datsun is a complement in this particular segment of the high-growth market, where we have no offer. There is no overlap, or very little overlap, between the brands. It allows us to have very strong brand attributes without over-extending these attributes where they don’t belong.”

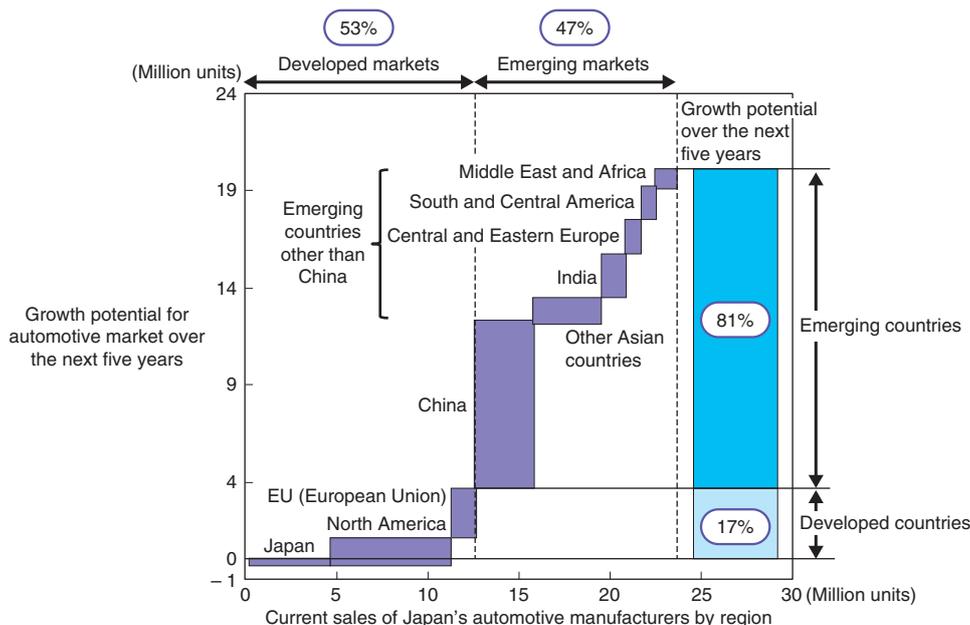
#### 4 The positioning of India as part of a global strategy

NRI India’s Group Manager Ryohei Sakamoto stated, “Taking cars as an example, over the next five years, the global market has the potential to grow by more than 20 million units, with about 20 percent of this growth coming from the developed countries and the other 80 percent from the emerging economies. Half of the emerging economy demand will come from China, with the remainder from countries other than China. The largest growth potential of the remainder will come from India” (Figure 17). Even though we refer to China as an emerging market, the vast scale of the Chinese market allows the development of car models specifically designed for this market to meet huge domestic demand under the system established through localization. However, in emerging markets other than China, there is insufficient demand volume to create a complete value chain covering development, production and sales. Sakamoto went on to say, “While production and sales could be dealt with through localization, development should be centralized wherever efficiency can be maximized, and India is a very strong candidate in this regard.”

For example, GE has two global R&D centers in the U.S. and another two in India. In other countries, it has one center each in Brazil, China and Germany. Having two centers rather than one implies the significant role that India plays. The two R&D centers in India have a total of nearly 5,000 employees who are engaged in the development of products such as those related to health-care, aircraft and materials. Unilever also has R&D centers in Bangalore and Mumbai, which serve as development centers not only for India but also for other emerging countries. For example, they have developed water purifiers for low-income households in emerging countries such as Mexico and Indonesia.

One point that the above-mentioned cases have in common is that these global development centers were not created all at once. Rather, they were gradually developed in stages. In the first stage, evaluation, testing or design work requiring a relatively low skill level was transferred to India. In the next stage, the center

Figure 17. Growth potential for global automotive market over the next five years



Source: Compiled based on data published by IHS Global Insight.

undertook the design and development of products specifically aimed at the Indian market. Currently, the center serves as a base for the design and development of products aimed at emerging markets as well as those offered in the global market. The RNTBCI, which was established by the Renault-Nissan Alliance, started its operations by undertaking global back-office work that has been centralized and transferred by Renault such as payroll calculations. Subsequently, it began to be responsible for CAD and CAM data entry. Currently, it takes on a role as a design and development base for the Datsun brand aimed at emerging countries. In the future, it plans to undertake even vehicle development including platforms by drawing on ESO.

In all of these cases, the positioning of India is clearly defined in the companies' respective global strategies. Specifically, the definition is that: "Even if the company moves into India with the aim of targeting India's domestic market, as the next step, the company not only makes India a base for the Indian domestic market, but also a center for global design and development activities, in the same way as the company has such a center in Japan, Europe, the U.S. and China. In particular, the company plans to develop India as a key hub for business operations aimed at emerging countries." As to why the positioning of India is so defined, first, India has a large enough market scale to enable the recovery of investment in design and development resources. Second, while it is necessary to minimize development and production costs to develop products that meet the needs of consumers in emerging countries, India has a plentiful supply of well-qualified engineers who can achieve this goal, and enables the use of ESO to outsource development at low cost.

If design and development are undertaken locally in India, it will be possible to take advantage of India's low costs for domestic components and materials so as to reduce manufacturing costs significantly. As a result, products can be developed not only for the Indian domestic market, but also for emerging markets such as Africa. As such, in addition to its huge potential market growth, India has location advantages to serve as a global hub to tap the large middle-income markets of emerging countries.

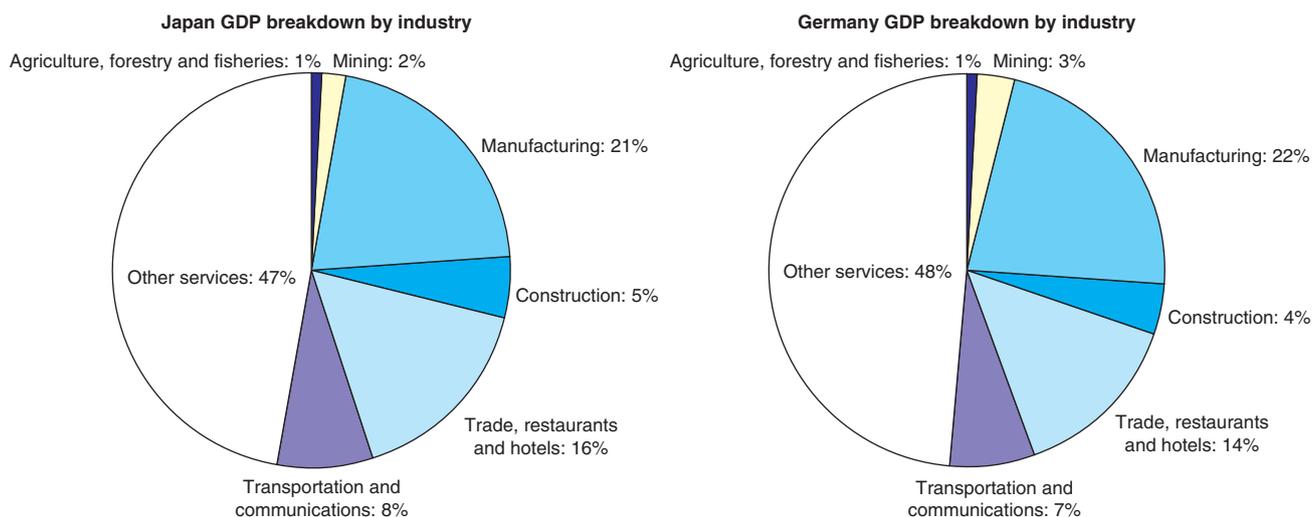
## VI Challenges Facing the Rebirth of Japanese Manufacturing

### 1 The challenge of reforming business models

#### (1) Architecture (design concept) for efficient business development in emerging countries

Let's return to the discussion of Germany. Germany and Japan have much in common. Looking at the contribution to 2011 GDP by industry, manufacturing contributed 22 percent in Germany and 21 percent in Japan (Figure 18). In both countries, economies are driven by exports, and manufacturing is one of the country's major industries among which auto production represents a significant portion.

Looking at world university rankings, Germany's universities are not ranked any higher than are those of Japan. According to World University Rankings 2013 – 2014 published by UK's Times Higher Education, the

**Figure 18. Contribution to GDP by industry in Japan and Germany in 2011**

Source: National Accounts Main Aggregate Database, United Nations (<http://unstats.un.org/unsd/snaama/dnllist.asp>).

University of Tokyo, which is Japan's highest-placed institution, stood at 23rd, and the University of Munich, which is Germany's highest, at 55th. However, such rankings do not mean that either country's ability to innovate has suffered. Rather, Japan and Germany are still world leaders in manufacturing.

Japan's manufacturing industries are based on a strong commitment to quality in the design and development stage where necessary functions are designed in an optimum manner and are supported by continuous improvements on the production floor. Similar to Japan, Germany also has core competency for manufacturing. However, as described in Chapter II, the country differentiates its business in emerging countries from that in developed countries, which raises the challenge of having to create multiple architectures (design concepts). While Germany exhibits a stubborn commitment to principles, it is nevertheless bold when it comes to rationally changing ideas.

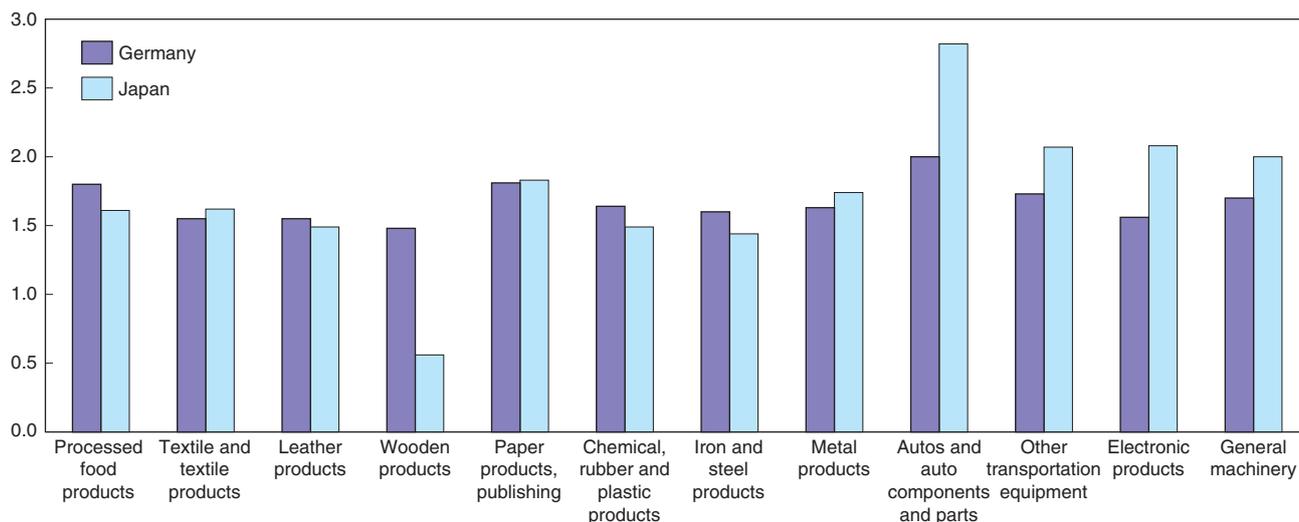
Siemens has adopted a product development strategy for emerging markets called SMART, which stands for Simple, Maintenance friendly, Affordable, Reliable and Time to market. Based on this strategy, unlike those offered in developed countries, in emerging markets, the company has launched products that are simple, inexpensive, and quick and easy to maintain. For example, the base of the SMART strategy for the company's healthcare business has been set up in Shanghai. This reflects the company's intention to set up headquarters for business aimed at emerging markets in emerging countries where they can quickly respond to market needs and are not affected by the concepts of the German head office. In a sense, this is much like setting up a second headquarters in an emerging country to complement its headquarters in the home country.

Although both Japan and Germany have strong manufacturing sectors, they have largely differed in their approach to business aimed at emerging markets. Such

difference has resulted from the boldness that German companies have demonstrated in creating a business strategy and the richness of the global human resources needed to realize such a strategy. While Japanese companies would also be able to boldly rearrange their strategy towards "while keeping accumulated technology in the home country, transferring design and development functions to the local market so as to meet the needs of emerging markets," they do not have sufficient human resources in emerging countries in terms of both quality and quantity.

Takeshi Mori, a senior research fellow in the Nomura School of Advanced Management, compared the multiplier effects of each manufacturing field in Japan and Germany (Figure 19). According to this comparison, major export fields such as "autos and auto components and parts," "electronic products," "general machinery" and "metal products" have much larger multiplier effects in Japan than they do in Germany. Particularly surprising is the large difference between the multiplier effects of the auto industry in Japan and in Germany. This large difference implies that, compared to Japan, vehicles produced in Germany use a much larger proportion of imported materials and components (meaning that the domestic procurement ratio is low). While this trend can be interpreted as that the economic effects flow overseas, another interpretation is that Germany is more active in global sourcing than is Japan. The same is true for electronics and general machinery in that Japan still relies on the industrial pyramid (procurement system) available within the country to a greater extent than does Germany.

An approach Japan should adopt in the future is: while building business value chains in emerging countries (enabling local procurement), devising an idea for the method of making the best use of the domestic industrial pyramid that is on the brink of being hollowed out. To this end, while pursuing globalization, Japan

**Figure 19. Multiplier effect by manufacturing field in Japan and Germany**

Source: Compiled based on GTAP 8 (Global Trade Analysis Project) 2007 data.

must develop new technologies and business models within the country that are different from those applied in emerging countries and that can be realized only in Japan.

## (2) Business models integrating goods and services

An approach that uses ICT to create new added value in an effort to shift the focus to creating services within the manufacturing industry is also touched on in the “Industry Revitalization Plan” proposed by the Abe administration.

Advances in ICT have gone beyond simply improving the efficiency of a company’s business management system, and have reached a point where ICT can be used for innovations in business itself. As introduced in Section 3, Chapter III (*NRI Papers No. 195*), rather than simply delivering mechanical systems, GE has been shifting its business to providing additional value to its customers by using data analytics and operating systems based on analyzed data. A Japanese example of this approach is Komatsu’s “KOMTRAX.” As such, by means of ICT, the business model adopted by the manufacturing sector has been rapidly changing to one that integrates products and services.

In August 2013, Germany announced its “Industrie 4.0” policy, which is the initiative promoted by the Federal Ministry of Economics and Technology as “the Fourth Industrial Revolution.” The goal of this strategy is to improve the efficiency of and optimize production processes and significantly reduce costs. Specific measures toward this end include comprehensively monitoring the operations of entire factories by collecting a wide variety of data available at production facilities. These factory systems are connected with the systems of customers and suppliers via networks. In the search for the next generation of manufacturing, both the U.S. and Germany see ICT as being an important key.

In general manufacturing in Japan, ICT engineers responsible for control systems usually belong to the design and development section of the business operations department. As for the information systems department that is responsible for the design of a business system as well as for IT procurement, it is usually under the supervision of the head office. However, to address the issue of how to use ICT in the creation of a business model that integrates goods and services, the resources available in existing IT-related organizations are not sufficient. The specific issues that must be dealt with include determining the type of ICT to be embedded in hardware; identifying the type of service for which a business model is created by connecting a company, its customers and suppliers via networks; establishing business operations linking all these elements (ICT, service and a business model) and developing IT systems that support such operations. The solutions to these issues require the strengthening of IT organizations across the company, with engineers well versed in ICT, hardware design engineers and staff members who are familiar with planning business models all working together.

## 2 Addressing the issues related to the use of global human resources for business management

The author believes that given growing globalization, while a discussion of business models is obviously important, even more important is the development and utilization of global human resources. President and CEO Mitsuomi Koizumi of Japan Tobacco Inc. (JT), a company with consolidated sales of more than 2 trillion yen, of which overseas sales accounts for more than 50 percent, stated in *NRI Management Review* (Vol. 25, 2011, Nomura Research Institute; at that time, he was JT’s executive deputy president and representative

director) that, “the most important element affecting business performance is not new innovative mechanisms but rather humanware (meaning human resources).”

### **(1) Germany is determined to develop a global workforce**

As described in Chapter II, German manufacturers are gaining momentum even in emerging markets where Japanese companies are struggling. One of the areas in which the two countries differ is the way in which they handle human resources. In German companies, regardless of size (large, medium or small), the globalization of human resources is far more common than it is in Japanese companies. Given that Germany is bordered by nine other countries, it is quite familiar with the inflow and outflow of people of different nationalities. About 10 percent of the German population comes from countries other than Germany; the ratio is even higher in large cities. For example, in Munich, where the head offices of many leading German companies are located, the ratio is one in five. For EU citizens, a work permit is not necessary to gain employment in a German company. Even non-EU citizens can easily obtain permanent residency if they satisfy certain conditions such as having worked at the same company for eight years. In addition, the General Act on Equal Treatment prohibits discrimination on the grounds of race or nationality in economic activities such as employment, such that the environment established in Germany allows even non-Germans to become executives of German companies. As such, in one sense, in order for Japan to achieve true globalization, it may be inevitable to accept mass immigration.

At the same time as they have been accepting overseas employees, German companies have been putting considerable efforts into the globalization of their German employees. Examples include many large German companies holding day-to-day meetings in English and managers being assigned to work abroad for a certain length of time. Companies promoting the globalization of employees are not limited to large companies. Small- and medium-sized enterprises have also shown outstanding movements toward globalization. For example, the owners of such companies have risen to the challenge of working directly with overseas customers, and have been training their entire workforces in such a way that they enhance their cross-cultural responsiveness.

A company is sometimes likened to people, goods or money. Japanese companies are well known for their products (goods) and financial strength (money), which are at the global level. However, we must also ask whether they are strong in terms of people. Could Japanese companies attract the highest caliber of people at the global level? At present, their utilization of overseas human resources for core business activities is clearly limited.

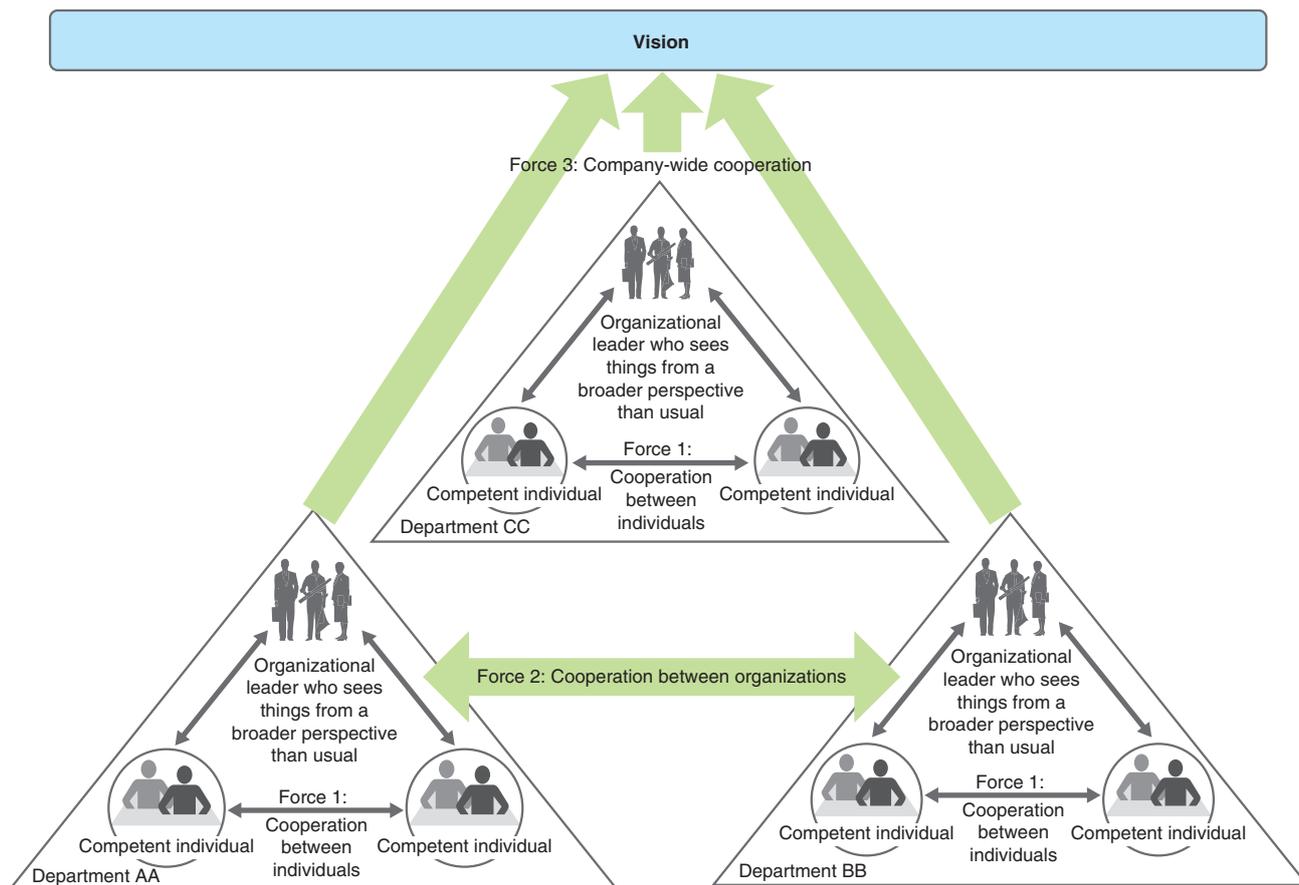
### **(2) Developing leaders and restructuring human resources management systems**

In recent years, there has been an increase in the number of Japanese companies that employ non-Japanese personnel in their head offices, adopt English as their official language, promote non-Japanese officers to their boards of directors and hold directors meetings and management meetings in English. However, it is difficult to say whether these non-Japanese employees and officers are truly effective in their positions.

According to Takuma Naito, a senior consultant at NRI's Management Consulting Department, for an organization to be strong, it needs to mobilize the following “three forces” (Figure 20). The first is created by the willingness of individuals to work together (cooperation between individuals). This requires an organizational leader who sees things from a broader perspective than usual. Next, organizations (teams) need to be able to work with each other (cooperation between organizations). To this end, it is necessary to break down organizational barriers and instead create organizational culture and structure that facilitate cooperation. The third force is cooperation between organizations (departments and divisions) under a company's management team (company-wide cooperation). To assemble these three forces, there is a need for the leadership of corporate executives as the persons responsible for managing a group of multinational organizations located worldwide. Specifically, the following three elements are required to make global human resources truly effective: organizational leaders who manage multinational employees; organizational culture and structure that facilitate effective cooperation between organizations consisting of multinational employees; and executive officers who lead all of these multinational organizations. If these three elements do not go hand in hand, simply employing many non-Japanese people does not lead to strengthening a company's competitiveness in global markets.

When a person appointed as a management leader is non-Japanese, or when a person who has considerable experience of being a leader overseas is placed in a top position, top-down measures are sometimes taken such as boldly switching the official language to English by appointing multinational employees to responsible positions one after another. However, in addition to recruiting and utilizing many multinational employees, global business management in a true sense requires new mechanisms for human resources management including organizational management and employee training and development. For example, these mechanisms must be able to verify whether a site leader who supervises a team consisting of multinational employees is well developed or if transparent procedures such as those based on an organization's key performance indicators (KPIs) and management accounting data are made available for leader performance evaluation. However, these

Figure 20. Three forces needed to create a strong organization



mechanisms cannot be created overnight. Rather, they need to be established in a planned manner.

Some leading companies have already begun to adopt a system whereby leader candidates are selected from among all available human resources including those at the head office and overseas subsidiaries, and selected candidates are trained and developed into leadership roles. For example, in Nissan Motor Company, which is well advanced in the utilization of global human resources, information on positions is provided by business departments, and personnel profile information is provided by the human resources department, allowing the matching of people to positions on a global scale. Ajinomoto has a goal of achieving 50-percent localization in terms of the number of officers among its overseas subsidiaries. In pursuit of this goal, the group human resources committee, which is chaired by the president, fills around 300 global key positions with people selected from a database of candidate human resources.

Companies in Europe and the United States select and develop leaders regardless of their nationality, leading to the growing globalization of human resources. As business becomes global, so too must human resources become global. In the case of Japanese companies, even though their business has become global, their personnel have still remained predominantly Japanese. It would obviously be best if Japanese candidates could be

developed in a timely manner to a point where they can act as global leaders. However, it is unreasonable to think that there would be enough Japanese candidates to fill all of the overseas positions which are increasing as business grows. Given this situation, a company must undertake reforms on the assumption that multinational human resources would be responsible for the development of leaders and organizational operations. If Japanese companies find more business challenges in emerging countries than in developed countries, they must develop local leaders in China, India or Southeast Asia and restructure human resources management systems.

By coincidence, Germany and the U.S., which are both developed countries, are putting their efforts into strengthening manufacturing. This paper has described these efforts, and discussed how to deal with Chinese and Indian markets as the representative examples of emerging markets that are major arenas in the future. German companies have embraced the concept of dividing technological development between a developed country (home country) and emerging countries. Based on this concept, they have adopted a dual-track approach to operating business in developed and emerging countries, and are achieving global growth. The U.S. is striving to attain growth by creating new business models in which advanced ICT, which is its strength, is

integrated with hardware. In view of these activities, how should Japanese companies move forward? A common issue that every company must address is the development of global leaders, as described in this chapter. In the future, global competition will hinge on how a company can leverage the advantages that each region of the world offers. To this end, a considerable number of global leaders must be developed.

While the yen's depreciation has enabled Japanese companies to rapidly recover in terms of business performance, reform efforts that have been made up to this point must not be ended before the required results are attained. Rather, it is necessary to firmly recognize a

sense of crisis, and once again make the renewed efforts necessary to compete in the global market.

Editorial note: Because of its length, this paper has been divided into two parts: Part 1, *NRI Papers No. 195*, consisting of Chapters I to III, and Part 2, *NRI Papers No. 196*, consisting of Chapters IV to VI.

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