

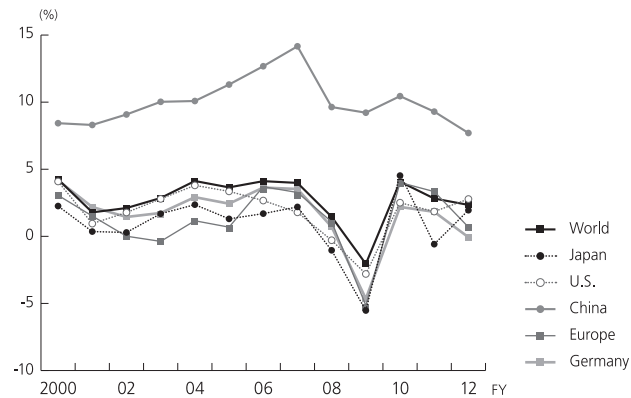
Chapter VI

Challenging New Heights (2006–2014)

Achieving Global No. 1 Position in Air Conditioning

In the mid-2000s, the global economy was doing extremely well, as was the U.S. economy, based primarily on increased sales of new housing. Business in Asian economies, meanwhile, turned brisk due mainly to vigorous exports to the U.S. China came to be called “the world’s factory” because overseas companies invested directly there, investments that collectively contributed to economic expansion in China of over 10 percent. Reflecting that expansion, the total national income in China increased, leading to a larger domestic market and to further industrial investment in plant and equipment. The favorable domestic Chinese economy and its rapid growth continued through the period before and af-

Global Economy before and after Lehman Crisis (rate of economic growth)



ter the Beijing Olympics of 2008 and Expo 2010 in Shanghai, China's first World's Fair. Economic growth also led to increasingly higher wage levels. One result was that other Asian countries replaced China at lower wage levels and began experiencing rapid economic growth. Another result was that Japanese exports of high value-added raw materials and equipment to China and other developing countries in Asia increased, thus allowing Japan to bolster its position as a sophisticated industrial Asian nation experiencing high-level economic growth.

The year 2008, however, witnessed the bankruptcy of Lehman Brothers (LB), one of the largest financial services companies in the U.S. LB's failure was a major factor that caused the favorable global economy at the time to fall into a "synchronized" recession.

In the U.S., the higher value of personal assets led to an increase in the mortgage value of homes, which in combination led to a housing boom. Homeowners, however, gradually began borrowing from banks at levels they could not pay back, resulting in an economic effect called "dependence on borrowings." Subprime loans aimed at low-income consumers, in particular, were de-

signed so that once the loans passed the deferment period the payment sum increased substantially. Afterward, more borrowers were unable to repay their loans and went into bankruptcy. The financial institutions providing the subprime loans were caught with huge amounts of non-performing loans, and they moved frantically to collect their loans. The bank packages that included those loans lost credibility and the financial market dropped suddenly. In August 2008, for example, LB, the fourth largest investment bank in the U.S., filed for bankruptcy due to losses it incurred related to the sharp drop in subprime loan products. Merrill Lynch and other leading investment banks, and AIG, the largest U.S. insurance company, likewise faced managerial crises tied to loans. Some housing loan companies such as Fanny Mae and Freddy Mac, bankrupted and were federalized. Because many financial institutions around the world owned too many financial commodities incorporated with subprime loans at the time, the so-called Lehman Crisis spread quickly, causing a global financial crisis. The affect of that crisis on EU countries was especially serious and long-lasting.

Stagnant consumption in the U.S. led to reduced imports from Asian countries, seriously affecting the economies of the developing countries there. At the same time, Japanese companies investing heavily in China and other countries in Asia, and expanding their exports to Asian countries, began to feel the adverse effects of the depressed business circumstances. Japanese exports of around one trillion yen/month prior to the Lehman Crisis dropped to one-half of that amount at the beginning of 2009. As a result, Japanese economic growth, highly dependent at the time on increased exports, turned stagnant. Amidst the growing economic uneasiness in Western countries, however, investments in the Japanese yen, considered to be relatively safe, increased.

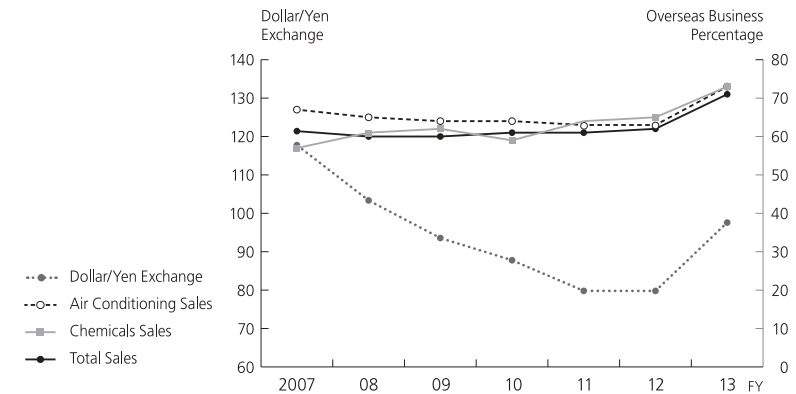
Those investments caused the yen to appreciate rapidly, which then led to a further decrease in Japanese exports. Japan's economic slowdown worsened and became prolonged.

From then to about 2013, a so-called paradigm shift—a structural change—occurred in the global economy. It was actually an economic crisis that originated with Greece's financial collapse and worsened as the world's financial problems spread to Spain, Italy, and other South European countries. That difficult situation continued with no indication of an early recovery. In the U.S. and European countries, sovereign risks were realized as a decrease in the grading of U.S. government bonds.

Following the end of the Shanghai International Exposition, China's economy began decelerating and the government's efforts to make the nation's industrial structure more sophisticated were unsuccessful. At the same time, China's competition with emerging nations in Asia became increasingly difficult. Around the same time, moreover, on March 11, 2011, a magnitude 9 earthquake, the strongest earthquake recorded in recent Japanese history, severely rattled the eastern part of the country. It generated a 40-meter tsunami tidal wave that struck the coastal area in eastern Japan. The earthquake caused horrendous damage, including the meltdown of a nuclear power plant and the related evacuation of thousands of residents. Many lost their homes permanently. That same summer, there was severe flooding in Thailand, and many hurricanes struck the U.S. Another large-scale natural disaster that struck two years later, in early November 2013, was Haiyan, the strongest typhoon ever to hit the Philippines.

Domestic economic disparities emerged among the advanced countries. In Japan, for example, there were two major trends: the trend toward an ageing society, and the trend toward having fewer children. Elsewhere in Asia the development of emerging na-

Trends in Exchange Rates and Overseas Business Percentage of Daikin



tions was noteworthy, and the world's economic map began changing noticeably.

Daikin globalized and developed itself rapidly during the 7-8 years from around 2005. Its development, though, did not proceed entirely smoothly, for those years marked a period of tumultuous adjustments to global economic events. It was also a period during which Daikin as a group made continuous efforts to increase its earnings capabilities. Early in 2006, for example, Daikin established a policy of "constantly challenging new themes as we move toward creating a bright future." In April 2006, Daikin introduced Fusion 10, an ambitious strategic management plan that moved the company a strong step forward toward becoming a truly global company. Next, in May, Daikin acquired OYL Industries, Inc. (OYL) in Malaysia, thereby increasing the number of its group companies to more than 200 and its global work force to 33,000 employees. Negatively influenced by Lehman Crisis however, the company's business results dropped abruptly during the 2009-10 period. After 15 consecutive years of increased revenues and profits, the company experienced two consecutive periods of de-



Announcement of Business Ties with Goodman (CEO Inoue and CEO David Swift)

creased revenues and profits. From 2010, the company's business results finally recovered, supported especially by favorable results in the chemical business, and at the end of that year it became global No.1 in the air conditioning business. Still, the U.S. was considered the Mecca of the air conditioning business, and it was there that air conditioning had its beginnings. Only after a company became a major player in the U.S. air conditioning industry could it be considered a truly excellent global company and perhaps the world's leader. In that context, in 2012 Daikin bought out Goodman Global Inc. of the U.S., thus making it a truly excellent global company and the largest air conditioner manufacturer in the world. By making good use of Goodman's organizational strengths, Daikin also bolstered its position further as No.1 in the global air conditioning business.

Based on the Fusion 10 Strategic Management Plan it introduced in April 2006, Daikin set 2010 as the target fiscal year for maximizing its corporate value as a truly excellent global company. The three main points the company emphasized in that business plan were: 1. having Daikin become the global leader in the air conditioning business; 2. having Daikin also become the global leader in introducing change and creativity to its organization, and inventing value and innovation through original technology;

and 3. having Daikin realize strong earnings capabilities and a powerful financial structure with high capital efficiency. Concerning the first point, Daikin set a goal for 2010 of increasing the scale of its air conditioning business to one trillion yen, which would allow it to catch up with Carrier Corporation. While Daikin was drawing up that management plan, its negotiations for buying out OYL progressed considerably. In that backdrop, Daikin decided instead in June 2006 to review its Fusion 10 strategic management plan and accelerate its synergetic effects with OYL in order to shorten the payback period for its investments from 13 to 8 years, and raising its targeted air conditioning sales to 140 billion yen for fiscal 2010. Actually, air conditioning sales for fiscal year 2007, the year Daikin acquired OYL, were 110.5 billion yen, up 47 percent versus fiscal year 2006, thus increasing Daikin's total air conditioning business above the trillion yen mark. Concerning the second point, in 2006 Daikin introduced to the European market "Daikin Altherma", a home-use heat-pump type water heater with a high energy-efficiency performance. It also developed a new type of air conditioner that boasted of a new refrigerant and new functions. That product later tied directly to the high-end "Urusara 7" air conditioner marketed in 2011. Finally, concerning the third point, up to March 2008 Daikin realized fourteen consecutive reporting periods of increased income and increased profit, which enabled it in fiscal year 2008 to realize its goal in the "Fusion 10" plan.

OYL was an air conditioning company established in 1974 in Kuala Lumpur, Malaysia. It developed its business centered on the OEM production of large-size applied systems for York HVAC. In 1990, the Hong Leong Group bought out OYL, and the company gradually expanded afterward in the background of a rich capital base by buying out several companies, including McQuay International, an American manufacturer of air conditioning equip-

ment, and American Air Filter, a manufacturer of industrial-use air filters. Its sales for the period ending in June 2005 were 168 billion yen and operating profits of 11.5 billion yen. Daikin opened discussions with OYL from the autumn of 2005 concerning OEM production. In the process of those discussions the possibility emerged of Daikin possibly buying out OYL. At the time, OYL had already developed into a global company. It was the world's fourth largest company in the applied systems industry, and the third largest in the production and sale of industrial-use filters. As a global company it had operations in Asia, including China, North America and Europe. In that situation, Daikin and OYL continued their buy-out discussions and reached an agreement in May 2006 for Daikin to acquire OYL for about 232 billion yen. Combined OYL and Daikin sales in the air conditioning market at the end of June 2006 were 825 billion yen. In 2008, their combined sales exceeded those of Trane Inc. and placed it in a position to overtake Carrier Corporation, the global leader in the air conditioning industry.

The main merit of OYL's acquisition was that it complemented Daikin's existing business areas. OYL had particular strengths in the applied systems business, in production technology and software engineering, and it was especially competitive in producing and distributing low-cost products. It also had powerful business bases in China and the U.S. Daikin decided to increase its share further in the U.S. market and began negotiations with OYL around that same time about purchasing its subsidiary, McQuay International Corp., an air conditioning manufacturer that had expanded its applied business in the U.S. While Daikin talked with OYL about purchasing McQuay, however, the discussions widened to include buying out OYL's air conditioning and filter-related businesses. Because OYL's parent company, the Hong



Announcement of Business Ties with Gree (CEO Inoue and CEO Zhu Jianghong of Gree)

Leong Financial Group, did not have an especially strong appreciation of the air conditioning business, OYL hoped that the business discussions with Daikin would expand to include its air conditioning-related businesses. The talks then moved forward quickly and Daikin acquired OYL outright. That purchase expanded Daikin's size to over 33,000 employees globally, turning it into a global company with the majority of its business originating outside Japan. To support the acquisition of OYL, Daikin used cash on hand, borrowed funds, and in May 2006 publicly offered a capital increase for the first time in 37 years, newly raising around 52 billion yen.

In March 2008, Daikin formed comprehensive business ties with Gree Electrical Appliances Co. Ltd., China's largest manufacturer of home-use air conditioners. Daikin pursued the ties primarily to acquire know-how related to producing home-use air conditioners inexpensively. Daikin also aimed at building a more competitive position in the domestic Chinese market, promoting the Chinese market's move toward inverters, and winning an influential market position in China.

The Lehman Crisis in September 2008, however, forced Daikin to revise its global marketing strategy significantly. First of all, despite having added McQuay International as a member of the

Daikin Group through the acquisition of OYL, the U.S. air conditioner market remained in the doldrums from when the subprime loan issue surfaced in 2007. Also affected by the Lehman Crisis, business cooled down significantly. The European market, as well, which had expanded rapidly in line with “Daikin Altherma” water heater’s favorable sales performance, saw total sales of 1,917 million euros in fiscal year 2007, and saw annual sales in fiscal year 2009 drop to 1,608 million euros. The yen value versus the U.S. dollar which had steadily increased from 2007, increased rapidly to hit the 80-yen mark following the Lehman Crisis of 2008. The Japanese government’s market intervention at that time was ineffective, and the yen continued increasing in value until it hit the 76-yen level in November 2011 and kept that level until October 2012. For Daikin, besides a drop in exports, the consolidated sales and operating profit of its overseas subsidiaries worsened for two consecutive years, fiscal years 2008 and 2009. Although many companies saw their operations fall into deficit for those two years, and Daikin experienced reduced profits to 60 billion yen in 2008 and 40 billion yen in 2009, the company remained in the black by practicing 49 themes for earning short-term profits. In that context, Daikin was evaluated highly as a recession-proof company. Chairman Inoue expressed his appreciation to all the employees in the group companies for conducting their duties cheerfully and sincerely and working as diligently as possible.

As events turned out, 2011 proved to be a year of major disasters for Japan. In particular, the magnitude 9.0 Great Eastern Japan Earthquake (the Higashi Nihon Earthquake) that struck on March 11 was accompanied by a tsunami tidal wave that inflicted widespread damage on the northeastern part of the country. Beginning on March 12 the tsunami damage spread to include a meltdown of three of the six nuclear reactors at the Fukushima No. 1 Nuclear

Power Plant. Between the damage from the earthquake and that from the tsunami, over 18,500 persons either died or were declared missing and presumed dead, and 400,000 houses /buildings were destroyed. The total value of direct damage from the earthquake was calculated as between 10 and 25 trillion yen. World Bank calculations set the amount of the economic loss to be the largest in the history of natural disasters. Even at the end of 2013, the affected Tohoku area was still recovering only slowly from the earthquake. Of the 280,000 persons displaced by the earthquake, an estimated 80,000 were directly affected by damage at the nuclear plant. As of this writing, most of those persons still have no homes to return to, and they have been forced to live in temporary housing. The earthquake and tsunami also had extremely strong negative effects on industrial activities over a widespread area that eventually revealed a transformation of world maps outlining global industrial activities. Also, because of serious damage to the Naka Plant of Renaissance Electronics in Hitachi Naka City, Ibaraki Prefecture, there was a strong negative influence on the production of electronic products and the supply of parts to customers in the automobile industry, electric products manufacturing, and various other industries. That influence was not limited to Japan but extended globally, especially to the U.S. and some European countries.

Following the Lehman Crisis and two consecutive years of reduced income and profit, Daikin made a V-shaped recovery in its March 2010 business results. It then introduced its “Fusion 15” Strategic Management Plan in April and subsequently made it safely through a period it called a “paradigm shift.” It then set a goal of becoming a truly excellent global company. Although the company’s actual business performance for fiscal year 2010 were sales of 1,160 billion yen, and profits of 75 billion yen, it set a goal

Fusion 15: Promotion and Implementation of 11 Group-wide Core Strategy Themes

I. 4 New Growth Strategy Themes

Innovation that incorporates the changes of the era as growth

1. Fully enter emerging markets and the volume zone

Create products and a sales system that meet diverse market needs around the world to rapidly assimilate the economic growth of emerging countries and develop large-scale business in the volume zone.

2. Develop solutions business that meets customer needs

Establish a business model that increases value for customers by offering systems and solutions that fit social trends to acquire a new source of earnings.

3. Expand environment-related innovation business

Sophisticate Daikin's original environmental technologies and create new business opportunities by anticipating environmental regulations that differ by country/region ahead of competitors to expand environmental business.

4. Accelerate growth through alliances, partnerships, and M&A

Instead of relying only on own resources, make full use of alliances, partnerships, and M&A as routine management tools to generate new products and businesses and accelerate structural reforms.

II. 4 Management Constitution Reform Themes

Sophistication of our management platform to succeed in the new era

1. Innovate product development, production, procurement, and quality capabilities

Accelerate development of bases, reinforce the production structure, and strengthen procurement capabilities to accelerate generation of products that best fit the needs of world markets and establish globally superior cost performance.

2. Strengthen global marketing function

Make collective Group efforts to reinforce marketing research capabilities of identify signs of and changes to social and industrial structures ahead of competitors in order to accelerate formation and implementation of original Daikin strategy

3. Comprehensively develop capacity to utilize IT

Innovate IT systems through integrated management of information, process standards and management globalization

4. Fundamentally reinforce profitability

Achieve the world's top-class earning power as well as nimble but robust financial standing that insures flexible and fast management (less than 75% of the 2013 break-even point ratio)

III. 3 Themes to Enhance HR Capabilities Based on People-Centered Management

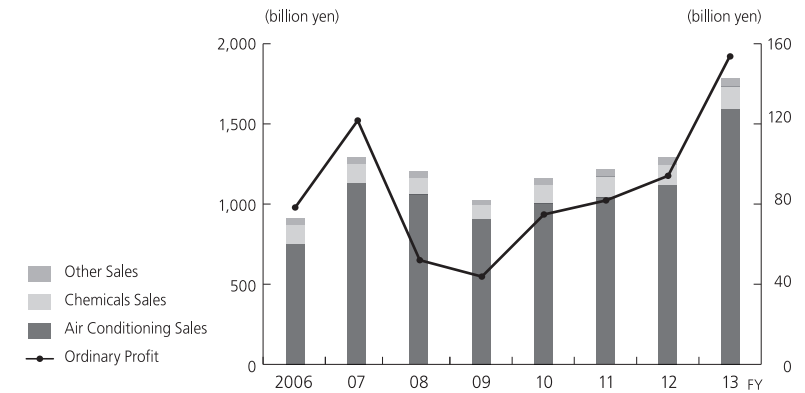
1. Implement and sophisticate People-Centered Management a source of our Group's competitiveness

2. Accelerate development of measures to secure and develop quality HR that go beyond past measures

- (1) Reinforce hiring capabilities through Group-wide effort
- (2) Establish career paths and compensation systems at active to local employees
- (3) Accelerate development of HR to lead future business

3. Speed up management localization and promote two-way communication between the head office and local bases

Business Performance of Daikin



of increasing those figures by 2015 to 2,050 billion yen in sales and 190 billion yen in profits. The company outlined eleven main core themes for achieving those goals: 1. entry into newly emerging nations and volume zones, speeding up merger and acquisition activities, and two other new growth strategies; 2. four themes related to revamping Daikin's business structure, including renewal of product development capabilities; and 3. three themes related to more sophisticated "people-centered" management, and localization of management. Strengthening personnel was an especially urgent task in the context of the company's rapid growth and increasing globalization. Chairman Inoue often spoke about his belief in "the unlimited potential of Daikin's personnel and the ongoing effort to improve employees qualitatively by assigning them to positions that best fit their capabilities." He also pointed out that internal communication tends to weaken as an organization expands, and emphasized how Daikin had long nurtured as its corporate stance the idea that face-to-face communication becomes increasingly important when changes occur rapidly, and that "flat" information should be commonly shared with emphasis on the worksite. Another of his favorite theories was that



*Masanori Togawa (right)
assumed Presidency,
COO Togawa and CEO Inoue*

“if managers at the working level do not notice or cannot imagine the first signs of change occurring at the workplace, they will not be able to apply to the company’s operations the type of management that is filled with mobility and is capable of producing environmental change.” He emphasized the importance of having a perspective that allows one to view matters from the most appropriate overall position, to learn how to conduct true communication, and to strengthen one’s awareness of matters affecting those at the leading edge of business. At the point where Daikin was conducting over 60 percent of its business overseas, its Japanese employees accounted for only 25 percent of the company’s total staff. The employees in most Japanese companies are Japanese, and they relate easily to each other, breathing almost in unison. If Daikin tried to operate its overseas businesses the same way as ordinary companies in Japan, however, the result could be a serious lack of internal communication and even managerial failure. Chairman Inoue felt that complexity strongly.

In July 2011, Yukiyo Okano resigned his president and COO positions and became a Senior Executive Advisor. Masanori Togawa replaced him in both positions. Togawa strongly supported President Inoue for many years as General Manager of the Executive Secretarial Department and Senior Executive Officer-in-

Charge of Human Resources and General Affairs. Earlier, as Senior Executive Officer-in-Charge of general affairs he participated in drawing up Daikin’s Fusion 15 Strategic Management Plan, and represented the company at press conferences. Under Chairman Inoue, Togawa also carried out Daikin’s managerial policies. The motive force behind the company’s overall business recovery was the improved chemical business that in fiscal year 2010 recovered to the fiscal year 2007 level, the year before the Lehman Crisis. The drop in the air conditioning business was not serious but even after recovery it reached only around 90 percent of its previous level. The key products and technical developments in that recovery were related to air conditioning technology. As part of its “Fusion 15” plan Daikin succeeded in selling the R32 refrigerant globally and introducing the innovative “Urusara 7” air conditioner. Also, in order to continue maintaining its Global No.1 position in air conditioning, Daikin promoted the development of new technology based on a global strategy. It developed new compressors, for example, so that it could sell them worldwide as stand-alone units. That will be discussed later in this history in the section related to the air conditioning business.

New Developments in the Chinese Market

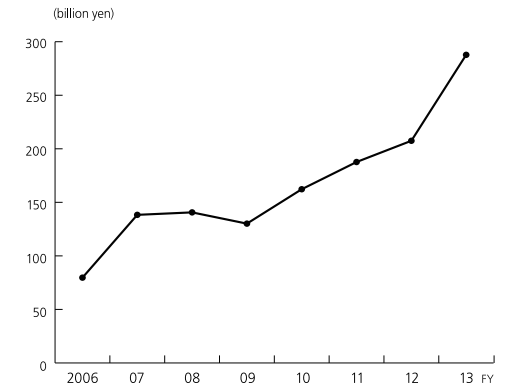
Daikin’s buy-out of OYL was its first on such a large scale. To have the buy-out proceed as smoothly as possible, therefore, Daikin established a Synergy Committee that studied a plan to allow the company to pay back its OYL-related investments within a period of eight and a half years. One of OYL’s subsidiaries, McQuay China, became an important base for Daikin to enter the applied business in China. McQuay China had three plants, located in Wuhan, Shenzhen, and Suzhou. The Shenzhen Plant produced applied systems and was the main plant operated as the joint venture be-



*McQuay China,
Wuhan Factory (top)
Suzhou Factory (left)*

tween McQuay China and China Aerospace Science and Technology Corporation (CASC) since 1994. Daikin viewed the applied market in China as particularly important for future growth. After Daikin bought out McQuay in 2006, and moved to bolster the new venture, the company sent Chief Operating Officer Masayuki Moriyama to manage McQuay China. One of Moriyama's first actions was to raise development expenses to 3 percent of total sales, triple that of OYL, in order to promote the development of new equipment. He also promoted quality control. The company previously added the cost of product quality warranties to the price for factory shipping. With that method, however, the assignment of responsibility for product quality was unclear. Moriyama resolved that problem by clarifying that responsibility through a system in which sales personnel charged the factory the costs for

Sales of Air conditioning business in China



repairing poor-quality production items. The plants were also asked to do their utmost in analyzing in-house quality-control issues. To bolster sales the company established a Key Accounts Sales Department for responding to the need for acquiring sales contracts with companies expanding their business all over China, including real estate business, large manufacturers, and chain stores. In general, those companies handled procurements through their head offices. The Key Accounts Sales Department teamed with the company's local branches, thus bolstering the company's overall sales activities in China.

In these ways, Daikin successfully expanded its business in China, with emphasis on the applied systems market. For the 2008 Beijing Olympics, Daikin installed equipment in eight different locations, including the Athletes' Village and the main stadium, affectionately called "the Bird's Nest," thus building a firm reputation in the Chinese market. In the applied market in China, in particular, a business area completely untouched prior to Daikin's acquisition of OYL, Daikin moved into third position in the market, behind only York and Carrier. Viewed in terms of the overall Chinese air conditioning market, including commercial installa-

tions and residential-use equipment, Daikin was in third position, after Gree and Midea. Until it acquired OYL, Daikin mainly targeted markets in China's coastal cities and emphasized the sale of high-end industrial-use air conditioning equipment. After the acquisition of OYL, however, the company added applied products to that sales line, as the second main pillar of its business.

In China, cities in the inland and western areas were growing remarkably. Up to that point, Daikin's main market was in coastal cities and among offices and high-class housings. But now the company had to build a sales network quickly in the developing cities in inland and western China. McQuay China responded to China's building construction boom in provincial cities by introducing new models of applied systems quickly expanding its sales volume. As a result, its business expanded rapidly, and became number three in the Chinese applied market behind York and Carrier in 2011. It expanded further after that, and in 2013 passed Carrier to become number two in the Chinese applied market.

Gree had many outlets in southern China. Daikin entered into a joint venture (JV) with Gree in 2008 centered on the development of technology and consolidated purchasing. They agreed on five basic business points: 1. Daikin would ask Gree to produce some of the small-size inverter air conditioners Daikin was selling in the Japanese market; 2. Daikin and Gree would jointly develop inverter-type home-use air conditioners for global markets; 3. Daikin and Gree would jointly produce key components; 4. Daikin and Gree would jointly purchase raw materials and components; and 5. Daikin and Gree would jointly produce metal dies. One of the main aims of these business ties was for Daikin to acquire know-how related to Gree's low-cost production capabilities. The emergence of a middle class in the Chinese market resulted in a major increase in the demand for low-price air conditioners. Gree

and Midea were China's two top companies in the popular-priced room air conditioners market at the time, and both companies were successful in securing sales in that market. In that context, if Daikin hoped to expand its business in the overall Chinese market, it was important for it, first of all, to succeed in that volume market. Daikin's joint venture with Gree introduced several innovations to reduce costs, such as replacing the expensive magnets formerly used in compressors with inexpensive ferrite magnets, and reducing overall expenses such as by localizing the electronic parts and raw materials the joint venture used. It also made effective use of standard locally made devices and components, and produced piping, plastic molded products, and other items at its own manufacturing facility, thus realizing lower costs for a wide range of production processes.

Another important goal of the joint venture was to have Gree's products switch to inverter models. With economic growth, mainland China began rapidly consuming much more electricity, and in 2011 it became the world's leading consumer of electricity. Most of the nation's electric power generation facilities, however, depended on coal as their fuel, and China's air pollution turned critical. The Chinese government also viewed the increased environmental pollution seriously and related to air conditioners it revised the nation's Energy Conservation Law in 2010, making it illegal to sell products with low electrical efficiency. In 1998, Daikin introduced an inverter-type room air conditioner to the Chinese market which reduced electricity consumption by about 60 percent. Daikin assumed the lead among manufacturers of air conditioners in China. In order to reduce electric power consumption further in the Chinese air conditioner market, however, it was necessary to spread sales of popular-type inverter air conditioners. The coverage of inverter air conditioners in Japan had already

reached almost 100 percent in the market, and their energy efficiency was improved almost three-fold compared to equipment sold 20 years earlier. Viewed globally, however, the mainstream products were still non-inverter type air conditioners, and inverter types accounted for only about 7 percent of the Chinese market. In Europe where there was a strong interest in energy conservation, inverter air conditioners still accounted for only 20 percent of the market. In the U.S., where duct-type air conditioners were still mainstream, inverters were hardly used at all. Gree held the largest share of the Chinese market. If Gree decided to introduce inverter-type air conditioners in China, therefore, that decision would have a major impact on the industry. From Daikin's viewpoint, the industry could even be expected to turn entirely toward introducing inverter-type equipment. Daikin had a clear purpose: to accomplish an all-out entry into the Chinese room air conditioning market, introducing inverter-type equipment with Gree, through the disclosure of inverter technology, one of Daikin's core technologies. Daikin aimed to build a global market and introduce inverter-type air conditioners as standard equipment into Europe and the U.S. market.

The idea of opening its inverter technology in such ways met with strong resistance from Daikin's engineers in Japan. They viewed inverter technology as a type of black-box technology and some of them were naturally concerned about the danger of having the company's intellectual property rights stolen. The merits to Daikin of having its inverter technology become a global standard were substantial, however, and Daikin would learn much from Gree about low-cost production technology. Daikin also understood how it would also benefit by satisfying needs in a newly emerging market. In the end, Daikin decided to offer its technology to Gree but set certain restrictions. Its control technology, for



Joint Ventures with Gree GDD (left) and Gree GDM (right)

example, remained proprietary.

The new models jointly developed with Gree were modeled after Daikin products and Gree cooperated considerably on the general design and the local procurement of components and materials. With the required dies and key components, Daikin established two joint ventures in February 2009: Zhuhai Gree Daikin Precision Mold Co. (GDM), and Zhuhai Gree Daikin Device Co. (GDD). GDD produced swing-type compressors and electrical equipment, and supplied inexpensive components to Gree, Daikin Air-conditioning (Shanghai) Co., Daikin Air-conditioning (Suzhou) Co., and Daikin Industries (Thailand).

Daikin (CHINA) Investment Co. more than doubled the number of its Chinese dealers in fiscal 2010. Although it did that mainly to meet demand in the central and western parts of the country, the action also let the company meet the demand in areas around large cities. As the Chinese government pushed forward with regulations to conserve energy, and it prohibited the sale of low-efficiency non-inverter type air conditioners from May 2010, the demand for inverters strengthened considerably. Daikin Investment strengthened its organization in China into fiscal 2012 until nationwide it eventually had 3,842 dealers, 1,313 "PROSHOPs," 570 "AIRSHOPs," and 5,576 "RA shops," thus totaling a sales organi-



"PROSHOP"

"AIRSHOP"

zation of over 11,000 outlets. Besides existing professional dealers, who sold and maintained mainly commercial-use air conditioners, "PROSHOPS" also sold and installed home-use "VRV" air conditioners mainly to well-to-do individual customers. "AIRSHOPS," small retailers located in the outskirts of cities that sold room air conditioners to ordinary households. "RA shops" were retailers smaller than "AIRSHOPS," and they sold only room air conditioners. Daikin developed these new sales channels as the company's first challenge in the Chinese market.

Concerning the production system for popular-type air conditioners in the so-called volume zone, in February 2011 Daikin decided to build a new plant. It established Daikin Air-conditioning (Suzhou) Co., Ltd. in December of the same year, and built a new plant for it on land adjacent to GDM and GDD in the Suzhou Industrial Park. By the time the new plant moved into full operation, it grew to three million air conditioners in annual production scale, making it Daikin's largest air conditioner production plant in the world. From April 2012, Daikin moved the production of air conditioners from its Shanghai Plant to Daikin Air-conditioning (Suzhou). The company then switched the Shanghai Plant to producing "VRV" air conditioners. Afterward, "VRV" production there proceeded smoothly.



New Factory for RA in Suzhou

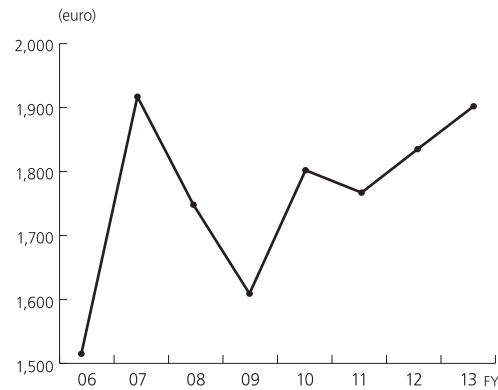
RA production at the Suzhou Plant reached one million units in fiscal 2013.

Bolstering Business Operations in Europe, the Mideast, and Africa

In Europe, even after passing Carrier Corporation and achieving No.1 market position, Daikin continued to expand its business rapidly. Daikin established a sales company in Greece in 2006 and in the Netherlands in 2007, thus increasing the number of its sales companies to twelve. That powerful network accounted for almost 90 percent of Daikin's total sales. Besides expanding its business through those sales companies, Daikin also succeeded in expanding its sales of highly profitable products such as multi-type air conditioners for buildings and homes. For 2007, Daikin Europe (DENV) achieved sales of 1,917 million euros and a high operating profit ratio of 20.5 percent, its best business results up to that point.

The Lehman Crisis in 2008 caused a serious debt crisis in Europe, leading quickly to a cooling down of consumption and investment. Up to 2009, Daikin's sales dropped almost by 20 percent. Afterward, in response to lower market prices, Daikin introduced low price products from OYLM, such as RA, "SkyAir", and PA. It also introduced products to the applied market, including large screw chillers and air handling units made at the Cecchina Plant

Sales of DENV



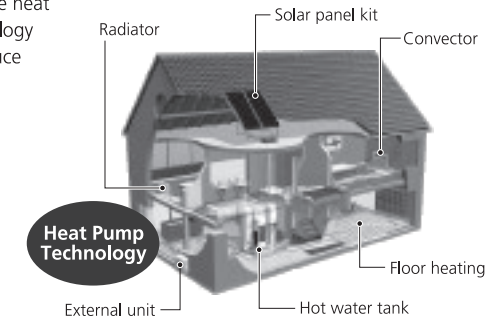
of McQuay (Italy; MQI), thus responding to market changes by maximizing synergies between the companies in the Daikin Group. Daikin moved into the heating systems business and developed markets in newly emerging countries. As a result of such efforts, sales turned upward, and in 2013 recovered to 1,902 million euros. The operating profit ratio, however, dropped from 20.5 percent realized in 2007 to 11.6 percent in 2012. Those figures recovered slightly afterward in 2013 to 13.1 percent. The structure of the European market changed at this time. The sales of highly profitable items languished, while the markets of newly emerged nations expanded.

As Daikin's overall business developed favorably, it decided on all-out entry into the heating systems market. Although summers occasionally got quite hot in European countries, the general need for heating systems is always strong. In 2006, Daikin developed and marketed "Daikin Altherma", an air source heat pump system. The EU generally demonstrates great interest in environmental matters, and in 2005 it adopted regulations that aimed to reduce the environmental load during the overall life cycle of products that utilized energy. The all-out application of those reg-

"Daikin Altherma"

For heating and hot water heating

A system that utilizes the heat from heat pump technology to heat floors and produce hot water



ulations began in 2009. France was especially enthusiastic. At the time, nuclear energy accounted for 70 percent of the electric power France required, and there were calls to level that demand. One result was that from 2007 the French government provided a 50 percent incentive to consumers using heat pumps. Next, in 2010, the EU adopted the environmental targets included in the "Europe 2020 Report," the European Mid-term Growth Strategy. One of the main targets in that report was by 2020 to reduce the volume of greenhouse gas emissions by 20 percent compared to the 1990 level. Another target was to raise renewable energies to 20 percent of the total energy supply. In addition, energy consumption would be reduced by 20 percent compared to predictions through improved energy efficiency. In the middle of these various efforts to reduce the environmental load, DENV's Product Planning Department developed "Daikin Altherma", the air source heat pump mentioned above. That heat pump system's outstanding functions allowed it to offer highly energy-efficient floor heating, low temperature radiators, and hot water supply apparatus. It was viewed as a new room heating method to replace the former combustion heating method, and was highly evaluated for

its contribution toward sustainability. Next, in 2010, Daikin won the European Eco Label, the first time for a product in the home heating industry to win the award. In 2011 the company's heat pump was recognized for its ability to create renewable energy. Both those awards contributed toward increased sales of the product. Besides the low-temperature "Daikin Altherma", Daikin bolstered its line-up during this period by also introducing a high-temperature product and a unified-product, gaining a firm foothold in the heating systems market. Back in 2007, Daikin Europe N.V. bought out the German company ROTEX Heating Systems GmbH, bolstering its lineup of heating systems. ROTEX's main businesses included the manufacture and sale of high efficiency combustion boilers, oil and hot water storage tanks, and other products. Daikin and ROTEX both benefitted from the synergistic effect of using each other's sales networks, and Daikin learned much about the European heating business.

The so-called European debt crisis erupted in October 2009 after the Greek financial crisis. That crisis spread throughout Europe and did not end merely sluggish demand caused by prolonged recession of the European economy but greatly changed Europe's demand structure. Around the same time period, Spain experienced the burst of its real estate bubble, employment unease spread throughout Italy, and sales of room air conditioners in the countries of southern Europe—the countries with the largest European air conditioning markets—dropped sharply, as they also did in France. In order to restructure its business, Daikin resolved not to withdraw from the European market and instead began improving its existing structure. Its focus included a strengthening of its business, with DENV playing the principal role, increasing its market share in the low-price products range, bolstering its product development capabilities in Europe, maximizing its



Hendek Factory of Daikin Turkey A.S.

Pan-European business efficiency, and pursuing lower costs. In order to support the business, Daikin opened offices in Moscow, the Mideast (Dubai), and Turkey (Istanbul) between 2005 and 2007. Next, it established Daikin McQuay Mideast in Dubai in 2008, and in 2011 established Daikin Turkey A.Ş. (DTAS) in Turkey, thus accelerating its entry into markets in the emerging nations. The percentage of the overall European market accounted for by the emerging nations which was 7 percent in 2007, doubled to 14 percent in 2010. The company's European sales continued to increase, and the sales in the emerging markets also increased to become 25 percent of total European sales in 2013.

Since the outlook for increased demand in the air conditioning business was not bright within the general European market, Daikin moved to expand its business in the markets of the emerging countries bordering Europe. As those countries gradually came to account for a larger market share, sales in the low-price zone contributed to a larger percentage of total sales. Combined with lower sales prices caused by the poor business situation, the operating profit ratio of Daikin's business in the EMEA (Europe, Mid-East, and Africa) countries also decreased. In that situation, Daikin moved to bolster the cost competitiveness of its products in the low-price range. Because benefits could be realized by work-

ing through DTAS, the company's Hendek Factory, positioning it as a production site for products in the low price range. OYLM supplied the Hendek Factory with parts, and from 2012 the plant began producing RA. In the future, the production of low-priced items at OYLM's Malaysia Plant and products imported from Gree in China will be shifted to DTAS. Also, Daikin will expand its overall range of products while continuing to develop inexpensive products, allowing the company to expand its share in newly emerging markets where Chinese and Korean manufacturers now account for larger market shares.

To strengthen its product development capabilities, Daikin placed Daikin Device Czecho as a consolidated company under DENV. Its main duties were speeding up the development and evaluation of compressors, and it strengthened its competitiveness among low-priced products. In July 2011, Daikin established the European Development Center (EDC), speeding up the formulation of unique European strategies and bolstering its development functions. Formerly, Daikin developed new products in Japan, and modified them for sale in Europe. That method, however, did not allow Daikin to respond quickly to the market's diversity and unique needs. Nor could the company respond to the needs in the rapidly expanding volume zones of sales in southern and central Europe, Turkey, the Middle East, and Africa. In that context, Daikin placed the design and marketing divisions of DENV, DICZ, ROTEX, and DTAS under EDC, and DTAS remained the development base for regular RA equipment. Daikin also made ROTEX entirely responsible for boiler products in the EMEA region, and established a system of joint development with DTAS.

Daikin moved in various ways to maximize the managerial efficiency for its overall business in Europe. One step it took was to promote transfer of the production of indoor units of room air

conditioners for local use, previously conducted at the Ostend Plant, to DICZ. Labor costs at the Ostend Plant were high, labor conditions were strict, and total production volume was expanding rapidly after "Daikin Altherma" went on the market in 2006, making it an inappropriate facility for producing products that fluctuated with the seasons, such as RA. Also, the major earthquake that struck eastern Japan in 2011 caused a shortage of parts supply from Japan, and DENV moved at that time to achieve the overall optimization of its production system in Europe, aiming to bolster its production system there. It also moved to bolster the product development functions of the Ostend Plant and retained the production of commercial-use products such as "VRV", "Sky-Air", and small-size chillers. DENV shifted the production of other products mostly to DICZ and elsewhere. DICZ was originally an RA production base for the European market, but DENV gradually shifted to DICZ the production of products for the European market from the Ostend Plant and from Japan. Simultaneously, DICZ bolstered the functions for developing RA and "SkyAir" products, as well as popular RA for the Turkish market. Later, DENV shifted its production of popular-type equipment to the Hendek Plant of DTAS. In order to fulfill its responsibility of providing products to the markets of Europe, DICZ built new production lines, and made especially strong efforts to reduce costs. The company introduced robots, on the one hand, and also pushed forward with the rationalizing of production through the use of handy and inexpensive devices. The RA production of OYLM models began at the Hendek Plant, and GSI was introduced later. At the time, the Ceccina Plant of McQuay Italy (MQI) was fighting for No. 1 position in the applied business in Europe and relocated the production of large-size chillers there from DENV's Ostend Plant. MQI also tackled the preparation of design standards for an

air handling unit, and the Hendek Plant began producing the same product as the Ceccina Plant. While clarifying a system of divided production duties, DENV and DIL also put into order their increasingly complicated capital ties with subsidiaries in Europe. DDC's compressor plant, which was under DIL's jurisdiction, was moved under DENV for consolidated reporting. Also, DICZ was made a 100% subsidiary of DENV. Up until then, DIL and DENV had shared DICZ's capital evenly. In such ways, the company gradually shifted toward concentrating and bolstering its supervising functions over the businesses in Europe, the Middle East, and Africa.

Next, in order to optimize its overall European business, a strong need emerged for DENV to unify the internal operations of Daikin group companies, such as accounting, public affairs, IT, and so forth. Although it was inevitable that each company in the Daikin group would not always select the most appropriate method of operation, they agreed to reduce costs by cutting fixed expenses and worked hard to bolster the organizational structure in the middle to long term, promoting the overall growth of the Daikin Group in Europe. When considering IT, for example, the DENV Head Office and all their sales affiliates cooperated closely. Accounting operations were entrusted outside as a package. Inventory and procurement management of all sales companies were integrated into DENV, and each sales company focused on shipping products to its customers. These systems enabled personnel and cost reductions throughout Daikin's businesses in Europe.

Daikin's business foundation in Turkey was bolstered by acquiring all the shares of Airfel Co., a major Turkish heating and air conditioning manufacturer with headquarters in Istanbul. It produced and sold gas boilers, heating-related equipment, and indoor

units of applied systems. RA imported products from Gree and sold them under the "Airfel" brand. As a dealer, it also imported and sold completely built-up "VRV" and chillers from Mitsubishi Heavy Industries and McQuay. Daikin began selling air conditioners in Turkey in 1975, through a dealer. After that dealer bankrupted, Daikin then established a DENV Turkey Office in May 2007 in Istanbul, and began sales and marketing efforts there. That was the first all-out sales office opened by a Japanese air conditioning manufacturer in Turkey. That office then appointed a new dealer, through which it began selling a wide variety of air conditioners, including RA for use in homes, "VRVs", and applied systems. Daikin also introduced heat-pump heating systems, to actively develop that market. Mitsubishi Heavy Industries held the top market share in Turkey's "VRV" market, through Airfel Co. as its dealer. Airfel already owned in-house production, sales, and product development capabilities, and held the top domestic market share. Turkey was in the middle of continually rapid economic growth at the time, and one quick way for Daikin to bolster its business foundation there and participate all-out in the Turkish market was to acquire Airfel. Doing so would also give Daikin a foothold in the Caucasus region and in Europe, the Middle East, and Africa (EMEA countries), emerging markets with great future potential. The principal Airfel shareholder was Sanko Holding, one of the leading corporate groups in Turkey, which initially hesitated to sell its Airfel shares to Daikin. But President Onder of Airfel was confident that by becoming a member of the Daikin Group Airfel would be certain to develop rapidly as an integrated general air conditioner manufacturer. He convinced the Sanko Holding that was in everyone's best interest to move forward with Daikin. After completing the purchase, Daikin renamed the company Daikin Turkey A.S. (DTAS), and moved quickly to bolster its

manufacturing and product development functions. DTAS began production at its own plant and sold its output under its own brand, both first-time experiences for the Daikin organization. At the same time, the company continued to use the “Airfel” brand on heating systems and OEM equipment procured from suppliers outside the Daikin Group. DTAS also continued to produce equipment such as air handling units and fan coil units, but it introduced newly improved specifications and unified them under the Daikin brand. In 2013, DTAS accounted for 35 percent of the Turkish “VRV” market and 15 percent of its RA market. Even for applied systems, including heating systems, DTAS had a 15 percent market share. The company thus succeeded relatively quickly in strengthening its foundation as a comprehensive air conditioner manufacturer.

Kazakhstan and other countries in Central Asia continued to show high-level economic growth based on the export of natural resources such as oil and natural gas. DTAS obtained trading rights from DENV in the Central Asian countries, and tackled reconstruction of a sales network. One result was the steady expansion of DTAS’s export business. Sales in Turkey and its surrounding countries increased 3.5-fold compared to the pre-buy-out period, and sales value increased to 696 million Turkish liras.

Bolstering of ASEAN Business

Daikin set three principal business goals for its companies in the ASEAN-Oceania region: first was bolstering its No. 1 position in Australia and Singapore; second was early achievement of No. 1 position in the Thailand and Indonesia markets; and third was rapid expansion of its business in Malaysia and Vietnam. Concerning its first business goal, in 2005 Daikin bolstered its No. 1 market position with a share of 25~30 percent. For its second busi-

ness goal, its market share reached 9~10 percent in the ASEAN region in 2005, and for its third goal its market share in Malaysia reached just 1 percent, also in 2005. In Vietnam that year, its market share was only 6 percent. In the general ASEAN region, Matsushita Electric (changed name to Panasonic in 2008) and Mitsubishi Electric competed fiercely in the low-price RA market, while Carrier, York, and Trane competed in the market for large, business-use air conditioners. In that situation, Daikin bolstered its sales network, developed and marketed equipment exclusively for cooling, and centered around DIT it moved vigorously to bolster activities aimed at upgrading its brand power, improved its service and distribution resources, and improved its Supply Chain Management. The following introduces some of the business activities Daikin conducted in the main countries in the region.

■ **Thailand:** DIT in Thailand, starting in 1990, was Daikin’s only production base in the ASEAN region. Daikin positioned DIT as a global production center, and exported products such as RAs and “VRVs” to Europe, Japan, the ASEAN nations, and other regions. Once Daikin began all-out production operations at DICZ’s Pilzen Factory in the Czech Republic, DIT had to establish itself as a production and sales base in Asia. Because the ASEAN region was still viewed as a market for cooling equipment rather than for air conditioning equipment, DIT established the DIT Development Center in 2005. It developed cooling equipment there, and developed the ASEAN market for the equipment.

During the final three years of the “Fusion 10” strategic management plan, it became obvious that DIT would be unable to supply RA indoor and outdoor units, “SkyAir” outdoor units, and the compressors needed for those units. In that situation, DIT shifted 40 percent of the total production of RAs—the volume being

shipped to Europe—to DICZ. DIT successfully expanded its sales in the ASEAN region, and in 2008 it moved to increase the production capacity of its existing factories, started the construction of a third factory, and began moving to upgrade its production capacity for compressors. Just after those moves, however, the Lehman Crisis occurred, delaying the company's construction plans almost two years. DIT began operating its No. 3 Factory in 2010, and produced RA and "VRVs". It exported 15 percent of its total output to Japan and 80-85 percent to countries in Asia and the ASEAN region, in the process becoming a key ASEAN production and sales point. The company's cumulative production from 1990 surpassed the 10-million-units mark in 2008, and from 2010 it introduced a full-production two-shift system. That same year the company's production and sales of RA surpassed one million units.

Concerning the sales system in the Asia-ASEAN region, Daikin had already established 100 percent owned sales companies in Australia, Malaysia, Singapore, and Thailand, and DIT was supplying them with products. Daikin also began establishing sales companies in other countries and areas in the region during this period, successfully bolstering its sales network. That included setting up wholly owned subsidiaries in countries such as the Philippines in 2009 and Indonesia in 2012. In 2014, it turned Viet-Kim Company, its agent in Ho Chi Minh City, into a wholly owned subsidiary to support its sales capabilities further. In Singapore, in particular, economic growth and per capita income were both at high levels. Inverters were the mainstay products in Singapore's air conditioning market, and Daikin was the leading air conditioning manufacturer there. Thailand was mainly a non-inverter market, but because of government energy efficiency restrictions according to the U.N. Climate Change Conference



Viet-Kim Company

(COP 20) most of the local producers were screened out and Daikin gradually demonstrated its strengths.

■ **Malaysia:** Daikin's acquisition of O.Y.L. Industries (OYL) gave it a production base in Malaysia, providing the company a firm support for all-out participation in the ASEAN volume-zone market. Prior to its acquisition by Daikin, OYL had its own factory in Sharam, and in 1978 it began producing York brand air conditioners there in a joint venture. From 1983 it also began an Electronics Manufacturing Service (EMS) for Mitsubishi Electric and from 1984 began producing RA under the "Acson" brand, a unique OYL brand. Once into the 1990s, OYL bought out McQuay with its subsidiary AAF and J&E Hall. In 2006, the year that Daikin acquired OYL, it built a new plant in Sungai Buloh, where it had an R&D Center and a warehouse. It moved air conditioning production there from the old plant, and the new plant began a new start in business as OYL Manufacturing (OYLM).

Daikin's first mission after its acquisition of OYL was the start of production operations at OYLM's new plant. Related to the plant's relocation, however, a shortage of parts occurred and sales for the first year fell below those for the previous year, and OYLM thus stumbled at the start of its operations. Although products at



OYL Manufacturing

OYLM were produced and sold for lower prices and costs than Daikin's GMS was able to achieve, Daikin viewed the inferior product quality as a major issue, and took over a year to improve the poor quality. Also, as the company moved toward achieving its "Fusion 15" goals a problem it ran into was expansion of its exports to emerging markets. OYLM had to reduce production costs by all possible means, aiming mostly at Chinese companies such as Gree that were producing products for much lower costs than OYLM. Since lower costs were impossible if OYLM followed Daikin's in-house product quality standards, OYLM established its own in-house standards and moved to reduce costs while meeting those standards.

OYLM also established a Group Liaison Committee for Creating Synergies. With the year 2010 as a target date, the company also began moving energetically to realize synergy-related savings of 20 billion yen. Those efforts steadily developed. For fiscal 2007, the profits of Daikin's overall air conditioning business were up by 5 percent compared to the previous fiscal year. OYLM's profits for the same period were up by 44 percent, a very high rate of increase. In that same period, however, clear frictions emerged in the thinking between Japanese engineers transferred from Japan and local technical personnel. One result was that a large per-

centage of local employees, including managerial and technical personnel, ended up leaving OYLM. Benefitting from that experience, Daikin made the most of the outstanding features of OYLM and promoted many improvements to increase the motivation of the company's employees, such as improvements in the production processes based on the Production of Daikin System (PDS), introduction of a new model GSI, and the development of inverter models. Once clear results from those activities began to appear steadily, OYLM's engineers also evaluated the results positively. One result was that the positive aspects of the Daikin production system came to be appreciated and took firm root. Local personnel highly evaluated the improvements that the introduction of safety education made to operations.

In 2008, the year that air conditioning production finally began operating smoothly, sales turned sluggish from September, influenced negatively by the Lehman Crisis. Once into 2009, overseas markets dropped rapidly by 40 percent compared to 2008. One result was that sales came to be centered on the domestic Malaysian market. In that market, Daikin Air Conditioning (Malaysia) marketed DIT products, Group Associated Co. (C&L) marketed OYLM products, centered on the York brand, and Acson Malaysia marketed "Acson" brand products. Daikin's overall share of the domestic Malaysian market was about 40 percent. It would not be an easy task to increase domestic Malaysian sales above that level and cover for the drop in overseas sales. Additionally, together with the conclusion of Mitsubishi Electric's EMS contract, total sales for 2009 fell to about 80 percent of 2008 sales. From 2010, OYLM made greater efforts toward increased sales in Europe and the Middle East. One result was that in 2011 overall sales were 1,042 million ringgit, a figure that tied for the previous best-ever annual sales results. Exports accounted for 50 percent of the total,

an indication of the favorable overseas sales performance.

Also in 2011, Daikin acquired Airfel, OYLM's previous sales agent in Turkey. OYLM was in charge of transferring its production know-how and the production of certain products, resulting in strong managerial motivations for OYLM. Later, Daikin moved to unify its products under a single brand starting in Europe, Turkey, and other overseas markets, and from 2014 it promoted unification of the Daikin brand in the Malaysian domestic market.

■ **India:** A main feature of the air conditioning market in India is that 90 percent of the marketed equipment is exclusively for cooling. Market forecasts for the near future predict a sharp increase in demand, with expectations for noteworthy growth in the volume-zone market. Manufacturers are thus expected to market new low-price products, suggesting that a shift toward local production might be beneficial. In 2000, Daikin and the USHA Shriram Group established a joint venture that began producing and selling RA products. Four years later, however, that company fell into deficit operations. Daikin then bought out the joint venture that same year and established the wholly owned sales company Daikin Airconditioning India Pvt. Ltd. (DAIPL). Daikin adjusted that company's capital and wrote off the accumulated losses in 2005.

Commercial-use air conditioners comprised the main market in India at the time. But as India's economy grew, the demand for commercial-use air conditioning equipment also increased, and the government strengthened power-saving regulations. Growth was especially notable in the market for RA, "VRV", and "SkyAir" equipment for installation in high-rise office buildings and apartment complexes. Initially, Daikin supplied the market with products through DIT, and then gradually expanded its business network through sales of "VRV" and "SkyAir" prod-



Neemrana Factory

ucts, as well as McQuay chillers.

In early 2009, Daikin completed construction of its new Neemrana Factory in India, and from October began local production of "VRV" products there. From April 2010, the company also began producing chillers locally. It then aimed at all-out entry into the volume zone of business and in July 2012 began production of room air conditioners. In 2011, DIT and OYLM commissioned the Neemrana Factory to develop a specialized non-inverter-type air conditioner exclusively for cooling. Development activities began there in 2012, and the factory steadily bolstered its capabilities afterward.

DAIPL sales in India for fiscal year 2009 were 3 billion rupees. In fiscal year 2010, however, the company introduced Daikin's Business Expansion Project in India and developed a 5-Year Sales Expansion Plan. That plan eventually resulted in sales in fiscal year 2012 valued at 15.8 billion rupees. For the three-year period from fiscal year 2009 to fiscal year 2012, sales expanded approximately 5-fold. In fiscal year 2013, Daikin assumed number two market position in sales in India, behind only Voltas, a local company. Daikin successfully entered the volume-zone air conditioning market despite India's floundering GDP beginning in 2011.

■ **Indonesia:** Indonesia is another rapidly expanding market for air conditioning equipment. In particular, its population of 231 million people places it second in market size after only India among the ASEAN nations. From 1976, Daikin assigned PT. Imora Makmur (Imora) to be its sole distributor in Indonesia. Initially, Imora concentrated on selling “VRV” and “SkyAir” equipment. As Indonesia’s economy grew, however, RA equipment became widely used and the RA market expanded remarkably in scale. Years later, in order to participate more aggressively in the volume zone of the market, Daikin terminated its sole agency contract with Imora. Then, in December 2011, Daikin established PT. Daikin Airconditioning (Indonesia), capitalized at US\$20 million, under joint management with Imora. Daikin introduced products aimed at the Indonesian market’s volume zone, starting with air conditioners exclusively for cooling that DIT developed. While utilizing Imora’s sales network, Daikin Indonesia also imported knowhow from DIL for developing sales outlets, thereby aiming to win the leading share of the Indonesian market.

In December 2012, moreover, Daikin acquired PT. Tata Solusi Pratama (TSP), McQuay’s agent in Indonesia and made it a 100 percent subsidiary, changing the company’s name to PT. Daikin Applied Solutions Indonesia. In this way, Daikin bolstered its “VRV”, applied business, and engineering business in Indonesia.

■ **Australia:** Daikin Australia (DAS) gradually expanded its local market smoothly from 2000. From 2005, however, sales slowed noticeably, causing Daikin to send a vice president to DAS. From 2006, the company energetically reviewed its Australian sales network. For room air conditioners, DAS bolstered its support for medium-size dealers, and in order to expand its “VRV” sales it moved vigorously to reorganize the efficient dealers handling competitor

products and superior contractors. It selected sales strategies based on product type and the special features of particular areas. In 2006 DAS also bolstered its plant and production facilities in order to reduce costs and increase the production of best-selling products such as home-use duct equipment. The production of products for local consumption joined together duct-type indoor units and inverter outdoor units made by Daikin. This equipment strongly supported DAS sales as the main products being sold in Australia. Government regulations in Australia for power savings strongly encouraged DAS to develop more power-saving products. The company put into place a low-cost, mass-production system by producing the main parts in-house.

In 2013, Daikin sent another executive from Japan to become the new president of DAS. One of the first tasks he tackled was overall revision of the company’s sales system as it headed toward introducing “Fusion 15”. To boost product attractiveness, DAS introduced a new duct-type product that bolstered the company’s leading market position. Concerning new high-rise office buildings and condominiums, so-called high-end buildings with construction emphasis on their environmental effect, DAS introduced high-performance low-energy consumption “VRV4” equipment, as well as bolstering the company’s sales system. Next, in a move toward securing factory profits, the company moved to realize greatly reduced costs by improving productivity and reducing the cost of raw materials. Through those various efforts, DAS realized sales of 40 billion yen in fiscal year 2013, a 120 percent increase versus the previous year. Such efforts drew the company closer to achieving its goals in the “Fusion 15” Plan of 45 billion yen in sales and a 30 percent market share.

■ **Brazil:** For Daikin, the countries in Central and South America

were undeveloped markets. In Brazil, in particular, wage levels were high and the disposable income of the middle class was said to be double that of both China and Indonesia. The use of air conditioning had already spread at a high level, and from 2010 onward, after emerging from the effects of the Lehman Crisis, the demand for air conditioning was expected to enter an all-out period of expansion. In May 2010, Daikin increased the capital of McQuay's local company McQuay Ar Condicionado Brasil (inactive at the time), and in August moved the company's office from Rio de Janeiro to San Paulo, at the same time changing the company's name to Daikin McQuay Ar Condicionado Brasil Ltda. The company also hired new local employees, installed an IT system, and received assistance from DIL to make a new start in business. It actually started its new business from April 2011, at which time it also leased a local production plant, established service locations, and provided education to key members of cooperative service stations. It also established contact centers with service available all day, every day, throughout the year. In this way, Daikin prepared a system for all-out entry into this growth market.

DMB began operations by selling imported equipment. Then, from January 2012, it began producing "VRV" duct-type indoor units in a factory it leased. During that same year it also began successfully selling 2,000 "VRV" units, and acquired the top share of that domestic market. In order to aim at achieving a revised target of 10,000 "VRV" units, DMB had to expand its line-up of RA and "SkyAir" products and to organize an installer's network. Local competitors, however, were producing those same products in the Manaus tax-free area. DMB paid either an 18 percent import duty or a 35 percent industrial product tax, and thus could not compete with the competitors who had factories in the tax-free area. In that situation, in March 2013 DMB decided to build an all-



Manaus Factory

out production base in Manaus and to begin local production there of "VRV", RA, and "SkyAir" products. That factory began operating from June 2014. Initially, DMB considered entering the applied market with McQuay products, but once into 2013 sales in Brazil turned sluggish, and it became necessary to reconstruct the sales system in the countries of Central and South America and to bolster the sales system all the more. The Brazilian government, however, introduced measures to protect the best interests of domestic companies, which made Brazil unfit as a central stronghold in Central and South America. In 2013, Daikin opened a local office in Mexico, and built an air conditioning factory in the state of San Luis Potosi. Sales for Central and South America in 2018 were planned to be 100 billion yen, 10-fold those in 2013.

Buy Out of Goodman, and Third Attempt to Enter U.S. Market

Daikin designed its first plan to enter the U.S. air conditioning business in 1980. Although it established Daikin Airconditioning America (DAA) in 1981, shortly afterward it became involved in a struggle with its sales agents before too long and withdrew from the market. The company liquidated DAA in September 1988 but retained its New York Office, hoping at that time for a future chance to reenter the U.S. market. Before too long, a chance

emerged for Daikin to invest in chemical operations in the U.S. For that purpose it established Daikin America Inc. (DAI), and in 1994 began production operations at a plant in Decatur, Alabama. Its second opportunity to challenge the air conditioning business came in 1998 after it established Daikin Modine Inc., a joint venture with Modine Manufacturing Co. That venture, however, also ended in failure, and Daikin and Modine each bore half of the resultant losses. Including that failure, Daikin's move to purchase OYL was the company's third unsuccessful attempt to enter the U.S. air conditioning market.

In October 2005, the Global Strategy Headquarters of Daikin Industry Inc. (DIL) learned from one of its ASEAN managers that OYL wanted to divest itself of its air conditioning business. Daikin's special interest at the time was McQuay International Inc., a company under OYL. McQuay was the fourth largest company in the global applied business, and in order for Daikin to restructure its business in the U.S., an overwhelmingly applied market, it badly needed McQuay's technology and market share. The negotiations for Daikin to buy out McQuay ended up, as narrated earlier, with Daikin instead buying out OYL's air conditioning business, a move that substantially promoted Daikin's globalization. Besides moving Daikin quickly forward in the U.S. air conditioning business, that move also strengthened expectations for a speeding up of Daikin's global applied business.

Along with the acquisition of McQuay International, in May 2009 Daikin established Daikin McQuay Applied Development Center (today's ADC) in the outskirts of Minneapolis, Minnesota. With the goal of developing global models of large industrial-use air conditioning equipment, Daikin assigned about 70 development members to ADC from Japan, the U.S., and Europe. In order to bolster McQuay's competitiveness in the U.S. and Canada, Dai-



*Daikin Applied
Development Center*

kin also promoted steps to improve ADC's service system. In August 2009, Daikin bought out Geyco Inc., a service company located in Quebec, Canada, and Thermal Technology Inc., a service company located in Minneapolis, Minnesota. In a related move, McQuay International, Inc., a wholly owned subsidiary of Daikin Industries, Ltd., opened the Daikin McQuay Applied Solutions Plaza showroom for large-scale air conditioning equipment on May 18, 2010, in Jersey City, New Jersey.

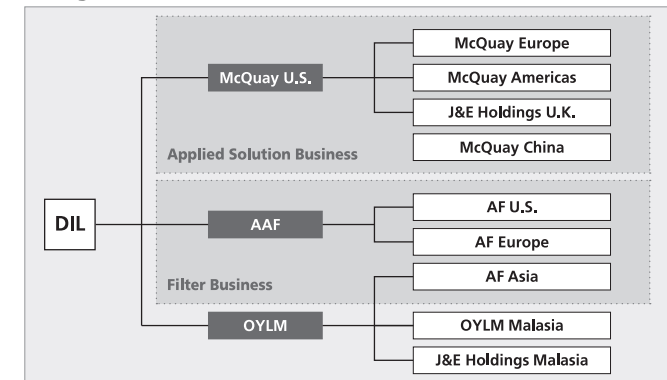
AAF McQuay Inc (AMI) was established during the period after the Lehman Crisis when business in the air conditioning industry in the U.S. was still lifeless. AMI's total sales in 2011 slowed to \$795 million (?). Development expenses expanded, however, such as those invested in the Applied Development Center, causing the company's financial situation to worsen. One result was that in February 2012, McQuay U.S. (including ADC) and AAF U.S. were separated from AMI. McQuay U.S. was renamed Daikin Applied Americas Inc. (DAAI) in August 2012. From 2011 new products developed using Daikin technology and marketed under the Daikin McQuay brand sold well. From 2012, the direct sales outlets in New York, Atlanta, and south Florida, used the Daikin McQuay name for their offices. On that business foundation, and using the Daikin brand, the applied solution business in

the U.S. improved quickly. The main aims of using the Daikin brand name were its promise of advanced technology, sustainability, and high product quality. The Daikin name was soon widely recognized throughout the U.S. applied market. All the companies related through business ties to DAAI changed their names to add the word “Daikin” to them. Daikin then aimed at entering the entire Central/South America market in a single leap.

In terms of sales of ductless RA and “VRV” equipment, Daikin bolstered its exclusive sales network, and in November 2005 established Daikin Air-Conditioning America (DACA) as a sales company. DACA increased its sales steadily, from \$21 million in 2006, to \$45 million in 2007, to \$96 million in 2008. Although the effects of the Lehman Crisis slowed the pace of its growth for several years, sales in 2011 expanded to \$151 million and expanded again in 2012 to \$183 million. After Daikin purchased Goodman, it became possible to expand the sales of ductless-type air conditioners throughout Goodman’s North American sales network. Daikin turned over DACA’s assets to Goodman in July 2013 and then liquidated the company.

Daikin first began considering the possibility of buying out Goodman Global Group, Inc., in 2005, around the same time it was thinking of buying out OYL. It felt that either company would provide it a foothold for its globalization, and it compared both in terms of how Daikin might benefit from owning each company. Goodman held a large market share in the U.S. at the time, and purchasing it would benefit Daikin as part of a strategy to bolster its market position. As a global strategy, however, Daikin decided it would be more appropriate to acquire OYL. Not long afterward, the investment fund Apollo Global Management LLC bought out Goodman. But then, in October 2007, Apollo sold Goodman to Hellman & Friedman LLC (H&F). Even after the Lehman Crisis,

Reorganization of OYL (April 2011)



Goodman continued to expand its share of the North American market for residential air conditioners, based largely on its overwhelming price competitiveness. It could not expand its business into overseas markets, however, because the investment funds forced restrictions on it. That was in 2009, when Daikin and Goodman first contacted each other. After Daikin recovered from the negative business effects of the Lehman Crisis, it began all-out research related to Goodman and in June 2010 began discussions with H&F about possibly buying out Goodman. Negotiations became prolonged, however, when the two companies began discussing price. At that point, in March 2011, a major earthquake struck eastern Japan, negatively affecting Daikin greatly and forcing it to review its future business plans. In that backdrop, Daikin and H&F temporarily halted their negotiations. They reopened their talks after Daikin recovered from the effects of the earthquake and it became possible once again to consider the future outlook of Japan’s air conditioning market. That was in March 2012. The new negotiations proceeded smoothly, and at the end of July 2012 the two companies agreed on a buy-out price of US\$3.7 billion. During those negotiations, a third party company made

a buy-out offer to H&F that was greater than the price Daikin and H&F had been discussing. Top management of Goodman, however, viewed the long-term synergetic effects of the Daikin's offer as more beneficial to Goodman, and for its part H&F convinced its investors that they would benefit more through the deal with Daikin.

Goodman's three most highly evaluated strengths were a powerful sales network, low-cost production, and lean management. Its products were not complicated, and it had a highly effective, high-speed volume production system, which gave it cost competitiveness; its dealers worked directly with its production plant, which gave it dependable sales and service systems; and it realized lean management through a supply chain management (SCM) system that tied together procurement, R&D, production, and delivery. As a result of its effective organization, Goodman passed Carrier in the North American residential air conditioner market in 2011, and became No. 1 in the industry with a 25 percent share of total units sold. Its share in the volume zone, however, was higher at 30 percent. On the other hand, its share of the market for high-end products was low at 5 percent. Johnson Controls Inc. (JC), a company that also offered to buy out Goodman, provided equipment, controls and services for air-conditioning, refrigeration and security systems. JC possessed no in-house technology in the air conditioning premium zone, however, and it had no global network, which Goodman badly required. For Goodman, therefore, it was clear that the synergetic effect of combining with Daikin was strongly positive. Daikin possessed technological capabilities related to the environment and energy conservation, and had "VRV" brand strengths. Daikin expected positive results from combining Goodman's low-cost technology with DAAI's management. Utilizing Goodman's powerful sales network would



Goodman's Cooling Factory

also allow Daikin to expand its share of the North American market, thus allowing it to expect a major positive synergetic effect from ties with Goodman. In addition, Daikin expected that applying Goodman's knowhow related to cost competitiveness to newly emerging economies and volume zones in the markets of the advanced countries would help to improve its overall profitability. Specifically, with 2015 as a target date, Daikin set a goal for itself, Goodman, and McQuay of securing a large enough share of the North American market to place them in third place after only Trane and Carrier. Doing so would also enable Daikin to become No. 1 in the global air conditioning business.

The cost for buying out Goodman, in the context of the yen becoming increasingly stronger during the negotiation process, was estimated in August 2012 to be 296 billion yen. Because the yen became stronger, Daikin ended up benefitting greatly from the drawn out negotiating process with H&F. Near the end of 2011, however, news of Daikin buying out Goodman was leaked to the press (Japan Economic Journal?) in Japan, and Daikin's stock price dropped sharply. Because Goodman was tardy in developing overseas markets the company was practically unknown in Japan. Also, because Goodman's major shareholder, H&F, was an investment fund, there were feelings in Japan's stock market

that the company's selling price to Daikin was too high. As a result, Daikin's move to raise funds in Japan by increasing its capital did not proceed smoothly. The company eventually raised 50 billion yen by issuing corporate debentures, and borrowed the remaining 250 billion yen in US dollars through the emergency response facility for yen of the Japan Bank for International Cooperation (JBIC). During fiscal 2012, JBIC handled 23 cases for emergency loans, and among them the loan to Daikin was the largest. From Daikin's standpoint, the loan from JBIC was highly favorable: it had a low interest rate, and zero exchange risk.

Because Daikin pursued the best possible synergetic effect at the time of its OYL buy-out, it ended up alienating feelings among some of the company's managers and engineers. One result was that at the time of the Goodman buy-out, Daikin emphasized strongly that the transaction was not simply a business acquisition but was a move to acquire outstanding human resources with rich experience, to obtain the time needed to educate those human resources, and to secure plentiful information related to the U.S. market. In order to achieve global growth there were limits to what could be achieved by depending on oneself. As Daikin learned during the acquisition of OYL, it is natural to depend on M&A but unless the two parties are mutually convinced it becomes difficult to expect favorable results. Daikin wanted to keep the number of Japanese employees sent to the joint venture at an absolute minimum in order not to affect the Goodman corporate culture negatively. The two companies adopted a policy of creating a relationship that would be mutually beneficial. They also agreed that at the request of Goodman, Daikin would appoint two full-time managing directors and one non-regular managing director. Daikin made continual efforts not to change the existing employment or management plans, to restructure Goodman's

plants and sales network from a long-term viewpoint, and to strengthen mutual communications. Goodman, on the other hand, valued getting rid of the restriction by the investment funds and promoting its future prospects for growth.

Sophistication of Technical Developments

In February 2002, Daikin clarified its goal of "Contributing to society through leading-edge technology" and issued a Technology Statement emphasizing the company's commitment toward realizing major technological reforms. The company then began improving its R&D system and speeding up the development of advanced technology. It also bolstered its global cost competitiveness, developed products with higher value added, and expanded its environmental technology and solutions businesses. Once into the second half of the 2000s, the managerial environment surrounding Daikin's air conditioning business was affected by a strong social concern for the global environment, by the growth of emerging markets, and by the growth of the solutions business. In all those areas, the speed of change accelerated further. If Daikin could grasp the market changes quickly and respond to them speedily, the period of global change would present the company with a chance for a major leap forward.

Although Daikin introduced game-changing technology such as "Ururu Sarara" and "GMS" in 1999 and until around 2004 introduced many improvements and innovations to various other technologies such as the new RA and air cleaner series, it did not go so far as to develop products based on new ideas. On the other hand, changes appeared in the awareness of consumers, and consumer product claims increased—leading to an increase in the cost of claims—and Daikin's competitors introduced many new products, offsetting the competitiveness of Daikin's main prod-

ucts, leading to a situation where Daikin had to quicken and strengthen further its technical development capabilities. Daikin viewed that situation as a managerial issue and the Air-conditioning Headquarters, sales departments, Research Center, and the Corporate Division began developing reforms aimed at reestablishing the “Daikin Technology Statement.” Eight years after introducing the Statement brought the company to the year 2010. The basic policy supporting those reforms was to aim at having the world’s most outstanding group of engineers. Daikin faced three main tasks as it moved to achieve that goal: 1. the reform of technical capabilities for giving birth to specialized products; 2. assuring sufficient product quality for building a relationship of trust between the company and its customers; and 3. strengthening the company’s human resource capabilities by raising the technical prowess and managerial competence of each employee. And finally, all employees, including the company’s officers and engineers, agreed to pull together as a team and concentrate on achieving the tasks facing them.

In splitting up the global market among Daikin Industries (“Daikin”) in Japan and its worldwide subsidiaries, Daikin moved to bolster its development activities and speed up its augmentation of local engineers to promote activities closely tied to meeting regional needs. After Daikin acquired OYL in 2006, its air conditioning market expanded quickly to a global scale. With that development, the air conditioning needs for each global region became more diversified, and Daikin’s Air-conditioning Technical Headquarters could no longer respond sufficiently by itself to satisfy those needs. Even considering only China, the air conditioning needs differed greatly from the east coast region centered on Shanghai, to the northern inland area centered on Beijing, to Hong Kong and the tropical region to its south, and finally to the west-

ern inland area. In order to promote the development of products that reflected the various local needs, there was an urgent need to educate and train local technical personnel.

In China, where the market for air conditioning was expanding rapidly, it was necessary for Daikin to expand its market share and strengthen its brand power. For those two purposes Daikin had to introduce into the Chinese market not only expensive equipment, nicknamed the “Benz” among air conditioners, its forte up to that point. It also had to develop and introduce low-price equipment for wider market coverage. In May 2010, Daikin established the Technical Development Research Center in a corner of its Shanghai Plant and began developing products related to air conditioning. In China, price competition was especially severe in the RA market. Since the product life of RA equipment was relatively short, it was particularly important to develop new models. That was especially true because it was also important to develop non-inverter type equipment to meet related demand in the Asian and ASEAN markets. For the evaluation of components, the Center established the same inspection equipment as in the Kanaoka Factory in Japan, resulting in a dependable system for evaluating components made in China. The Center utilized that same system to evaluate components consigned from Japan. Using core technology imported from Japan, moreover, the Center moved forward with in-house systems developing original products and arranged products. It also used information it received from Gree in China to increase the number of material manufacturers to evaluate. Also, as a result of promoting procurement by working closely with the Suzhou Factory in China, the Center realized noteworthy reductions in the procurement cost of raw materials.

The idea of developing “differentiated products” based on



Sales Promotion for High-performance Room Air Conditioner

advanced technology was especially important in terms of Daikin continuing to maintain its position as the leading company in the global air conditioning industry. Good examples were the all-aluminum micro-channel heat exchanger Daikin developed in 2011 and loaded aboard heat-pump type air conditioners, and the switch to the HFC32 refrigerant, both of which were game-changing technical developments. The heat-exchanger tube was made of copper over all the years since it was invented, replaced by aluminum tubes developed jointly by Daikin and Sumitomo Light Metal Industries, Ltd. Daikin also developed technology for loading the outdoor unit of heat pump air conditioners, a first in the world. That technology resulted in a 40 percent heat transfer coefficient improvement. By converting materials, moreover, the heat-exchanger became 30 percent lighter, greatly reducing production costs. Daikin introduced the “ZEAS GoGo,” fitted with an aluminum heat-exchanger, in May 2012.

Roughly around this same time frame, Daikin was severely affected by the Great East Japan Earthquake and the resultant tsunami waves. The earthquake caused a meltdown at the Fukushima 1 Nuclear Power Plant. Renesas Electronics Corporation, a company producing microcomputers for Daikin, halted production because of the earthquake, and the short supply of microcomputers almost forced Daikin to halt its production activities. Daikin’s Air Conditioner Production Headquarters concentrated about 200 engineers on development of a microcomputer for breaking up orders and placing them with various companies. In the context of those efforts, Daikin was able to secure enough air-conditioning production to respond to the market’s needs. Because of that special effort, however, the company was late in responding to other technical development needs. In October of that same year, flooding in Thailand did not affect the DIT Factory directly but caused delays in the procurement of parts. As a result, parts were supplied directly from Japan, which caused delays in the development of new technology. Daikin eventually overcame those many difficulties, and began marketing the “ZEAS GoGo” products about a month later than originally scheduled, which was in time for summer sales. That was all made possible by the execution abilities of Daikin’s engineers.

Daikin offered new technology in the “Urusara 7,” “Ururu Sarara” R series room air conditioner it marketed in November 2012 that differentiated it from previous products. It was a game-changing product, using the HFC32 refrigerant, offered the industry’s highest-level of energy conservation and guaranteed a high environmental performance. The product also made room air circulation, heating, and cooling more efficient and had a new structure that increased the energy efficiency of its dehumidifying performance. The structure of the indoor unit also featured many im-



"Urusara 7"

provements. "Urusara 7" was also the world's first air conditioner to use the HFC32 refrigerant. Compared to the earlier HFC410A, the HFC32 had low global warming potential and high energy efficiency when used for either heating or cooling. For those reasons, from about 2002 there was a move to use it as a refrigerant. But at the time the HFC410A refrigerant had become an international standard, and other companies gave up on the HFC32. Even afterward, however, Daikin continued its development of HFC32, and acquired many patents for using it in air conditioners. "Urusara 7" was protected by patents, which made it difficult for other companies to catch up to Daikin, proving it was a game-changing product. "Urusara 7" received various awards in Japan including the "Prime Minister's Award" of the 5th Monodzukuri Nippon Grand Awards for excellent engineering, the "Economic, Trade and Industry Minister's Grand Prize," for excellent energy conservation equipment. A Red Dot Design Award also gave it high social evaluations.

In addition, clear trends emerged concerning increased interest in energy conservation, and more attention was paid toward airtight homes and homes secure from outside heat, thus increas-

ing heat efficiency. That in turn led to issues such as so-called "sick" homes, condensation on walls, and the spread of ticks and mold. In that context, new home-building standards required continuous ventilation. In Japan, however, where humidity differs greatly depending on the season, it is not possible to maintain humidity at fixed levels if ventilation is constant. Daikin developed the "Desica Home Air" unit for maintaining humidity at comfortable levels throughout the year. "Desica Home Air" was for commercial use and aimed at adjusting humidity and providing circulation. It was introduced in November 2012. The unit provided outstanding energy savings, and reduced power consumption by 30 percent, compared to when the air conditioner was used concurrently with a humidifier and ventilator. In 2011 the product won the MITI Invention Award, a nationwide competition among inventors.

In response to the social needs in Japan for reduced consumption of electricity following the Great East Japan Earthquake, Daikin developed many kinds of power saving products and services. In total, Daikin is assumed to have contributed to electricity savings of about 600 thousand kW. As for solutions for conserving electricity in Japan, there was great concern following the earthquake about whether sufficient electric power could be provided in the mid to long term. Daikin also merged its previous "AirNet" Center and EMS Center and introduced a service for monitoring electricity consumption by region. It also developed a service for controlling electrical equipment in buildings at the optimum level. To support new products to conserve electricity, Daikin closely studied the development of solar power, storage batteries, and LED lighting. Daikin marketed a solutions service for solar power systems in April 2012. In that service, Kyocera Corp. developed panels, Omron Corp. developed power controllers, both on an OEM



Technology Innovation Center (Completion Model)

basis, and Daikin packaged them with other companies' "EcoCute" heat-pump water heater which gained superiority in the market.

In November 2008, around the time that Daikin was being negatively influenced by the effects of the Lehman Crisis, discussions arose about possibly building a Technology Innovation Center (TIC). Specific moves in that direction began in May 2010, and steps were taken to form a concrete plan. In Japan at the time, the market and products had both matured, and if further growth were expected in the future, innovations for providing a breakthrough were needed. TIC developed a centripetal force that positioned it as the "technology Mecca" of the global Daikin Group. Daikin referred to TIC as its collaborative ground, a place for developing technology and products in an open system unifying technology from different fields. Floor space in the structure housing TIC was 70,000 square meters, and total construction costs were 42.5 billion yen. Plans called for the grand opening of TIC in November 2014. Of a total of more than 2,000 R&D engineers in Daikin, about 1,600, not including those working in the plants, would be assigned to TIC. Daikin planned to build TIC inside the Yodogawa Plant grounds. Immediately after the project was approved at a Directors' Meeting, however, the Great East Japan Earthquake struck Japan, and Daikin had to delay the TIC con-

struction plan. The size of the project was also downsized to 700 engineers and 49,000 square meters, and construction was re-scheduled to begin in November 2013. The facility's scheduled opening is now November 2015.

The goals of the TIC were an acceleration of the development of core technology such as heat pumps, inverters, fluorochemicals, and others. For that purpose, Daikin concentrated its R&D functions in TIC, especially on technical themes with high universal appeal, such as core technology, basic technology, and other types of technology expected to contribute to Daikin's global business. Further, TIC would foster interaction among engineers working in diverse fields inside and outside Daikin, in effect aiming to make TIC an open innovation location. TIC exchanged comprehensive agreements for cooperation with Osaka University, Nara Institute of Science and Technology, and Kyoto University.

Reorganizing Chemical Business, and Challenging Global No. 1 Position

Daikin's Chemical Business Department faced a severe drop in its business results from the mid-2000s. As competition in the global chemical business heated up, Daikin lost its competitiveness in both product quality and in terms of cost. Then, in fiscal 2006, forecasted business results were for the chemical business to fall 9.5 billion yen into the red. In that situation, from February 2006 the "CEO Project" was introduced aimed at fundamentally restructuring the company's chemical business. Daikin clarified 20 reforms for action by the sales, production, R&D, and planning departments, and steps were taken to analyze and research the reason for the chemical business's deficit and to establish policies for clarifying and resolving problems. Included among the 20 reforms were measures such as reducing inventories—which had

burgeoned to be valued at more than 40 billion yen—and understanding the company's needs by having sales and R&D work closely together. Reforms also included bolstering marketing capacity such as developing new customers, promoting product development, and developing new business such as fine chemicals, lithium ion batteries and fluorocoatings. The company marketed "OPTOOL," for example, in May 2007, a surface finisher for smartphones, PC tablets, and touch panels. Efforts were also made to prepare a step-up system for responding to accidents.

Daikin began tackling the "CEO Project" from fiscal year 2007. It took from then until the end of September 2008, a period of about 18 months, to overcome the negative business situation in the Chemicals Division. That success also tied to allowing Daikin to identify the direction of reforms for its overall business. In the past, that was particularly necessary for clarifying the state of inventories in the chemicals business. During fiscal year 2007, Daikin aimed at an inventory in its chemicals business of 34 billion yen, and to achieve that target it began tackling the reduction of excess inventories. Up until the Lehman Crisis, the thinking throughout Daikin was that inventories were "bad." At one point Daikin was forced to halt its production activities, and a feeling of crisis spread throughout the company that led to a strong move to reduce costs. In that backdrop, from the second half of fiscal year 2008 the Chemical Division played a key role to introducing structural and organizational reforms as it aimed to increase its profits. The first point for structural reforms was the bolstering of its R&D and product development capabilities, including establishing an R&D Center and a Technical Services Department. A second point of reforms included bolstering the company's business planning functions, a third aimed at bolstering its sales capabilities, and a fourth aimed at bolstering the company's

manufacturing capabilities.

Daikin's chemical business in China in 2006 was centered on the three production facilities of Daikin Fluorochemicals (China) Co., Ltd. (DCC) in Jiangsu City producing PTFE, Daikin Fluoro Coatings (Shanghai) Co., Ltd. (DFS) in Shanghai producing fluorine coating materials, and Daikin Telecommunications (Ningbo) Co., Ltd. (DTN) in Ningbo producing LAN cabling.

In the area of refrigerants, Daikin had joint venture ties with Arkema Co., Ltd. (former Atofina) of France in the fluorochemicals industry for producing HFC125, a raw material essential for producing R410A and other HFC blended refrigerants. Daikin established Arkema Daikin Advanced Fluorochemicals (Chagshu) in February 2008, and built reactors on the land adjacent to the DCC's plant in Jiangsu, China. Daikin began all-out production there from May 2010. Because forecasts were for an increased demand for HFCs in China and the developing countries in Asia, Daikin established Daikin Arkema Refrigerants Asia Ltd. in Hong Kong in November 2007, thus establishing a sales system that covered the entire Asia-Oceania region.

Daikin established a joint venture for fluororesins called Ningbo Toho Daikin in October 2004, and began developing the FEP-LAN market in China. Those efforts were unsuccessful, however, and the JV was liquidated in June 2013 and Daikin withdrew from that business. Because demand for the raw material fluorite rose considerably, Daikin entered into a joint venture with China Central Fluoro Industries Group Co. Ltd., owner of the largest fluorite mine in China. In February 2007 the two companies jointly established Jiangxi Datang Chemicals Co., Ltd. (JDC) for producing anhydrous hydrofluoric acid. Production operations began at JDC in December 2009.

The Chinese fluorine market expanded so quickly that DIL

had to send a specialist group there from Japan to conduct marketing operations and get the business safely off the ground. In November 2009, a Chinese Project was newly organized in China and large-scale investments were made in new production facilities one after the other to expand Daikin's various businesses there.

Daikin Fluorochemicals (China) (DCC) built a fluoroelastomer plant and started commercial production of "DAI-EL" in January 2013. DCC also built a new plant and began volume production of "Zeffle", an infrared reflective fluorocoating. New facilities were installed to produce a 4F monomer used as the raw material for "Zeffle", and commercial production of it began in June 2013. In May 2012, DCC installed new facilities for producing FEP, aiming to start commercial production in March 2015. That move was in response to a rapid expansion of the production of machinery and motor vehicles in China. The fluorocarbon materials market also expanded to meet the demand in the parts industry. DCC also aimed to enter the downstream areas of demand for fluorocarbon resins and in October 2010 participated in Shanghai Valqua Fluorocarbon Products Co., Ltd., a processing manufacturer of fluorocarbon resin parts.

In the U.S., the fluorocarbon resins market floundered in the context of the Lehman Crisis. Daikin America Inc. (DAI) had delayed its plans to bolster its facilities, but demand recovered considerably in 2011. Daikin turned again to bolstering the "Neoflon" ETFE facilities, and began commercial production from October 2012. Related to the use of solar batteries, the demand for products such as "Neoflon" ETFE and "Zeffle" increased greatly. At the end of 2013, DAI dissolved its JV with 3M, and became 100% owner of MDA Manufacturing, a manufacturer of chemical intermediates.

This expansion of Daikin's overseas operations contributed

toward recovery of the Chemicals Business Division. In 2008, sales decreased more than 10 percent and the company reported a business loss of 9.5 billion yen. Business began recovering rapidly from 2010, however, and in 2013 the company recorded sales of 140 billion yen. Because of lower prices, however, operating profits reached a peak of 20 billion yen in 2011, and in 2013 they dropped to 15 billion yen.

Changes in Japanese Market, and Reorganization of Business Structure

Japan's population reached a peak in 2008, and afterward began trending downward. The total number of households in Japan expanded only slightly from 2007. One result was that the number of housing starts decreased from 1,060,000 units in 2007 to 788,000 units in 2009—following the Lehman Crisis—and then increased slightly to 883,000 units by 2012, and in 2013, just before an increase in Japan's consumption tax, housing starts increased to 980,000 units. The increase fell short of the increase recorded in 2007. Japan's air conditioner market, which was said to have already matured in the 1990s, reached a ceiling in the early 2000s. The use of air conditioners had spread to cover almost 100 percent of the market, and the spread of energy saving-type air conditioners was also close to the saturation level. New domestic demand for air conditioners dropped sharply, and competition focused on replacement demand, resulting in a zero sum game. The situation was such that unless the air conditioning manufacturers introduced revolutionary new models to stimulate demand, sales would not increase. The size of the market for residential air conditioners in 2006 was 7,520,000 units and for commercial use were 797,000 units. In 2009, right after the Lehman Crisis, those same figures were, respectively, 6,775,000 and 609,000 units, both sharp

drops from 2006. Although RA sales in 2010 were up 20 percent, and PA sales in 2011 were up almost 30 percent, the growth potential fell again afterward. RA sales in 2013 were 9,012,000 units while PA sales were 804,000 units.

In that situation, Daikin—which had an overwhelming market share at home—faced a critical situation in which it had to bolster its domestic sales capabilities. In 2009, Daikin moved to reorganize its domestic air conditioning headquarters in three main ways: by developing products based on market-oriented marketing, by promoting a nationwide sales strategy aimed at volume-sales customers, and by expanding its business directed at environmental solutions. Compared to its competitors, Daikin realized that it lagged in its response to the needs of the time in both its strategy and policies. One of its first steps was to unify its three planning departments into a single Business Strategy Office. It also established a Customer Support Center to promote increased sales of system products. Its solutions business was pulled together in the newly established Corporate Sales Division. Daikin's aim was to promote three main businesses in the new system: the heating and hot water supply business, the applied business, and the “whole service business” that provided overall solutions for buildings and plants.

In the first half of fiscal 2008, business cooled down in the context of the Lehman Crisis, and Daikin's sales in Japan decreased by 16 billion yen compared to original expectations. If matters continued as is, Daikin would face the danger of its operations falling into the red. To assure itself a short-term profit, Daikin prepared for an emergency. One of the first steps it took was to relocate 160 employees. It also developed new sales outlets, expanded sales by Daikin exclusive dealers, expanded sales of air cleaners as an influenza countermeasure, and promoted wider

sales of the “EcoCute” product via special business ties with Kansai Electric Power Co. Those several moves had a positive effect and Daikin's drop in sales ended up smaller than the overall market drop. Daikin's market shares increased year on year and in 2009 they were 18.5 percent for RA products, 45.1 percent for PA products, and 15.7 percent for “EcoCute” products. Profits dropped, however, with operating profits down 60 percent in a comparison of 5 billion yen in fiscal 2008 and 2 billion yen in fiscal 2009. The PA business, in particular, decreased 12 percent in number of units sold, and the division fell into the red.

The Air Conditioning Sales Department moved again to expand its business of proposing environmental solutions. It also tackled the introduction of “Number One and Only One” products in order to raise their prices and increase sales. In November 2010, the Department received approval from the Board of Directors for proposed sales reforms it presented related to domestic air conditioning sales. The company thus began moving toward reform of its sales companies. What those reforms actually meant was: 1. reduce the number of domestic sales companies from the current 20 to ten companies by promoting mergers in large cities; 2. concerning products aimed for sale through mass marketers, i.e., RA, “EcoCute”, and air cleaners, combine the volume sales divisions of the 20 existing sales companies, and establish a new sales company specializing in sales to mass marketers. The aim of the first reform was to bolster the direct-sales franchise dealers, as well as the heating, hot water supply, and ventilation businesses in addition to the air conditioning business, in order to develop the proposal capabilities of the energy-saving system. The primary aim of the second reform was to raise sales efficiency. The new sales company introduced an organization that included a one-to-one section with each volume seller, the main customers. In fiscal

year 2010, the outlook was for deficit operations for small-size room air conditioners and the “EcoCute” products. But with the strengthening of sales capabilities and the efforts by the Airconditioning Production Headquarters to reduce operating costs, Daikin’s new target was to aim for profitable operations for all its businesses by fiscal year 2013.

Daikin began reorganizing its sales companies in 2011. It reduced the 20 sales companies in operation between Hokkaido and Okinawa to ten companies, with amalgamation of sales companies particularly in heavily populated areas. As a result, Daikin HVAC Solution (Tokyo) Co., a new sales company, was established that covered Tokyo and four surrounding prefectures. Daikin HVAC Solutions (Kinki) Co., meanwhile, covered the prefectures in the Kinki region. All in all, five large-scale companies emerged, selling heating, ventilation and air conditioning (HVAC) solutions businesses, each with annual sales of 100 billion yen or more.

Daikin also established the new sales company for responding to volume-sellers and called it Daikin Consumer Marketing (DCM). DCM was then put in charge of unified nationwide sales to the general headquarters of volume sellers, and also sales to their local headquarters and stores. In response to that, the Air Conditioning Sales Headquarters of Daikin bolstered its Corporate Sales Division, and actively developed spec-in sales aimed at large-scale multiple retailers such as volume sellers and convenience stores.

The strengths of Goodman, which Daikin purchased in 2012, were a powerful sales network, low-cost production, and lean management. The transfer of those strengths to Daikin was important for its air conditioning business. In particular, the direct ties between dealers and the plants, and creation of a service system based on an SCM that tied together all activities from pro-

urement to development, manufacturing, and distribution contributed substantially to reforming the structure of the domestic air conditioning business. Daikin moved to build an efficient supply system that modeled on Goodman’s system, including building independent and direct sales type distributors conducting marketing for realizing the optimum strategy in each area, and introducing methods for developing dealers. Daikin also tackled construction of an effective supply system, combining and discarding types of equipment, and selecting key models. In this way, the company improved the accuracy of sales plans for responding flexibly to market changes.

Commercial-use equipment accounted for half of the domestic air conditioner market in Japan in the early 2000s, and 70 percent or more of that market was for equipment for buildings. In particular, the market for air conditioning equipment for large-size buildings expanded during the period 2010–2014. The size of the market for peripheral equipment and maintenance services expanded at a faster rate than the market for air conditioning equipment. Competitors built powerful sales systems for that market and nurtured directly related engineering companies. In 2010, Daikin Air Techno Co. merged with Daikin Facilities Co., and in 2011 Daikin moved the applied business of Daikin Air Techno back inside its Domestic Air Conditioning Department, bolstering its business aimed at large-size buildings. The new system not only bolstered the sales route of facility constructors but responded aggressively to renewal demand for air conditioning equipment in large buildings. That became the turning point for establishing a circulatory-type business model.

Daikin also established Solutions Plaza for directly grasping user needs and then reflecting those needs in product development, resulting most importantly in the emergence of differentiat-



Solution Plaza "Fuha Tokyo" (left), Solution Plaza "Fuha Osaka" (right)

ed products, an increase in sales, and higher prices. Stimulated by the Solutions Plaza established by Daikin China, the new Solutions Plaza had not only an exhibition function but also functioned as a showroom for brand-publicity, and a place where dealers could hold business discussions. In 2011 Daikin established "Fuha Tokyo" in Shinjuku, Tokyo, and in 2013 it established "Fuha Osaka" in Umeda, Osaka. Daikin also established Asahikawa Lab in Asahikawa, Hokkaido, aiming to expand its heating and hot water businesses. In Japanese, incidentally, "fuha" is the sound of breathing. Daikin used the word to express the energy of air.

Included among the products Daikin developed while tackling reforms from 2010 was the "ZEAS" air conditioner for use in stores and offices. Greatly different from previous products, it boasted of top-level energy conservation, outstanding comfort features, and it was environmentally friendly. It also developed the "Urusara 7" room air conditioner, which offered heating and cooling without the unevenness of humidity, and consumed only about half the electricity of previous equipment. These new products were introduced in 2012 or later and sold well. But the yen quickly weakened from late 2012. Daikin forecasted increased production costs of about 150 billion yen for fiscal year 2013, be-

cause the company was producing volume-zone air conditioners, "SkyAir", air cleaners, and important parts such as compressors in China. It was not an easy matter to cover those foreign exchange losses through lower production costs and higher product prices. At any rate, top management emphasized higher selling prices to cover those losses, and those working at the sales level did their utmost to increase sales. As a result, "Urusara 7," which won the Energy Conservation Award for fiscal year 2012, became the trigger for higher sales prices. Also, Daikin was the first in the industry to use the HFC32, introduced in the "Eco ZEAS" high-class PA equipment. In 2013, introduction of the top-class "five-star ZEAS" enabled Daikin to succeed in switching its sales focus to high-class equipment. Those successes also enabled the company to keep its profit decrease in fiscal year 2013 at the lowest possible level. From fiscal year 2014, the company then secured the basic capabilities for earning increased income and increased profit.

Daikin acquired the rights to manage American Air Filter (AAF) through its purchase of OYL, but it had to overcome several problems before realizing a synergetic effect. With 20 production bases located variously in the U.S., Europe, China, and Southeast Asia, AAF held second position in the global filter market. It had particular strengths in volume zone markets such as general buildings and hospitals. After purchasing AAF, Daikin exported PTFE filter materials from its Yodogawa Plant to AAF's plants around the world to have them processed into air filter units and marketed locally. Compared to Daikin products in the past, AAF was able to reduce the production costs of the new products by about 30 percent.

Through technical support, Daikin nurtured sales personnel who could acquire spec-in orders. Then, together with AAF's direct sales personnel, they worked actively to expand sales. Even



Yuki Factory of Nippon Muki and Filter Factory

with those efforts, however, the product's price was high compared to existing glass filters, about three times as much, and it was thus not cost competitive. In that situation, AAF introduced new facilities in the Suzhou Plant for producing PTFE filters and lowering their sales prices substantially, making it possible to begin an all-out challenge in the existing glass filter market.

In order to aim for global No. 1 position in the filter market, it was necessary for Daikin to raise the technical level of its air filters and to improve its product development capabilities. In 2009, Daikin bought out Nippon Muki Co. (NM), a subsidiary of Nippon Sheet Glass Co. NM held the top share of the Japanese air filter market and developed many products with advanced functions as well as products no other company had, and was No. 1 in the Japanese air filter market in terms of technical capabilities. Another of its strengths was its domestic sales organization. AAF could develop new markets by selling the unique products of NM. Another benefit was increasing its sales capabilities regarding the Japanese market and Japanese companies. NM, on the other hand, could utilize Daikin's global knowhow, thus moving forward with its tardy globalization, and making it possible to sell high value-added products. Through Daikin's buy-out of NM, Daikin Industries (DIL), AAF, and NM were able to work together to devel-

op a global strategy. In the U.S. and European markets, the three companies shifted away from AAF's former approach of mainly selling inexpensive filters to selling high-performance filters. In the Asian market, AAF expanded its market centered on electronics, and established a firm position as top company in the market. In order to bolster the foundation of those various businesses, the technical personnel in DIL, AAF, and NM were joined together in a Global R&D Center newly established inside NM's Yuki Plant. Also, they promoted a Global No. 1 strategy regarding the power and industrial business in developing countries, such as large-size filters and large-size dust-collecting apparatus for power plants. In such ways, sales in 2013 for AAF's overall business were \$712 million. The company had grown to where it could just about touch No. 1 in the industry.

Response to Global Environmental Issues, and Pursuit of Diversity

Daikin established its first environmental action plan in 2005. The company moved globally at that time to reduce its fluorocarbon emissions, develop energy saving air conditioners, and reduce its exhaust emissions. In 2006, however, the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report warned the world that if humanity continued its economic activities as is, Earth's future would face a critical situation. Daikin realized it was vital for it to tackle global warming if it wished to continue in business. In Daikin's position, in particular, two of its central businesses were refrigerators and air conditioning equipment and fluorocarbons, areas that relate closely to global warming. Daikin established four themes related to corporate social responsibility (CSR): the environment, product quality and customer satisfaction, human resources, and social contributions. Japan's energy

saving technology related to air conditioning products was outstanding but if viewed globally, including in the developing countries, the spread of energy-saving air conditioning equipment was still at a primitive stage. Along with the future economic growth of developing nations, it was clear that refrigerators and air conditioners could be expected to become more widely used, leading to an increase in energy consumption and fluorocarbon emissions. As a result of Daikin tackling this issue, the use of inverters spread to China and then to other countries worldwide. Daikin was also able to develop new air conditioners using a new refrigerant and to reduce their negative effect on the environment to about one-third the previous level. Another issue that surfaced around this same time was the need to reduce CO₂ emissions by fluorocarbon plants, which accounted for the most CO₂ being emitted from Daikin's plants. While moving forward with investment in its plants and equipment, Daikin promoted the environmental compliance of OYL and early on established and carried out environmental action plans in Daikin Europe and Daikin U.S., thereby carefully monitoring the achievement of their environment-related goals. As a result, during the five years from fiscal 2005 to fiscal 2010 Daikin easily cleared its goal of reducing its CO₂ emissions globally to half or less of their levels prior to 2005. Daikin also introduced activities it called "green heart factories" that focused on energy and resource savings and less waste. From 2007, Daikin participated in a large scale reforestation project in Indonesia, and from 2011 it moved to protect the habitat of "Shiretoko," which is located on Hokkaido in Japan and designated a UNESCO World Natural Heritage site. Concerning these strategies, instead of its traditional Environmental Report, Daikin began publishing the "Daikin Group CSR Report" from 2006, focusing on the group companies. Next, in 2007 the company published

a top commitment saying that the entire Daikin global group would regard climate change action as a matter of the greatest importance and do its best to meet society's expectations. That was a declaration stating that Daikin would move forcefully to find solutions to environmental issues. In October 2008, Daikin signed the UN Global Compact, which expressed a move to protect the personal rights of individuals and their response to environmental issues and published a top commitment saying that Daikin would continually work toward their actualization. In Daikin's CSR Report of 2013, the company publicly clarified its promotion of the core strategies of Fusion 15 emphasizing the simultaneous achievement of environmental contributions while expanding the company's business and bolstering human resource capabilities.

Daikin's thinking is that human resources are the source of a company's competitiveness. They also heighten a company's organizational strengths even though there are different senses of value among human resources with different backgrounds. Actually, such differences contribute toward strengthening a company. With Daikin's increased globalization, the make-up of its employees became widely varied. Among Daikin's overseas companies, about 40 percent had local personnel serving as their presidents and about 45 percent had local personnel serving as directors. Local top management in the overseas companies was active.

As employee diversification progressed in these ways, it became increasingly important to nurture global-oriented managers and ordinary personnel. Daikin's approach up to that point was to develop personnel through their in-house duties. Previously, the company emphasized OJT for educating its employees. The company trained its Japanese managers and ordinary employees through management education programs and internal business classes that responded to changes in the times, developing their



Daikin Ales Aoya

capabilities through quality-oriented educational programs. But as business became increasingly globalized, a need emerged for more widely varied educational programs. Daikin thus decided to establish an education center in 2007. The company purchased land facing the Sea of Japan in Tottori City, about three hours from the Osaka Head Office, and established a global education center there it called the Daikin Ales Aoya, opened in May 2008. “Ales” derives from a Latin word meaning “flight” or “fly into the future.” The facility became a center for training personnel essential for developing Daikin’s future in the approaching new period and for developing future business.

Foreign employees in Daikin Industries, Ltd. (DIL) in Japan, on the other hand, accounted for less than 1 percent of the total. Daikin introduced the system of rehiring employees after their retirement age earlier than many other Japanese companies, and in 2010, the twentieth year after introducing that system, over 90 percent of retired employees were rehired, meaning that veteran employees are increasing in the company. That system has been highly evaluated, and in May 2012 Daikin received the Fifth Diversified Management Award in the Diversification of Employees Section from Toyo Keizai Inc., the Japanese publisher of influential economic affairs magazines. Daikin introduced a program in 2011

aimed at educating female employees, and in February 2013 the Tokyo Stock Exchange and the Ministry of Economy, Trade, and Industry jointly selected the companies in Japan most active in employing females and called them “Nadeshiko Brands.” In the first competition, Daikin was selected as one of 17 “Nadeshiko Brand” companies. In 2013, DIL had 21 female managers. That number cannot be considered “many” in the Japanese context, but females accounted for 35.1 percent of all new Daikin employees that year.

Daikin established Daikin Sunrise Settsu, Ltd. (DSS) in 1994 to support the employment of disabled persons. In 2003, that company had 47 employees, of which 43 were disabled. Afterward, companies in the Daikin Group moved to employ more disabled persons. When DSS began operating a new plant in June 2009, it expanded its business operations into documentation and preparing CAD drawings, as well as processing and assembling of components and manufacturing chemical products. As of March 2013, Daikin employed 104 disabled persons (including 65 with physical and 22 with mental handicaps). Including all the companies in the Daikin Group, disabled persons today account for 2.34 percent of the entire workforce. In addition, Daikin accepts 40-100 trainees each year from schools for the disabled and training centers for mentally incapacitated individuals. In March 2009, Daikin won certification from the Ministry of Health, Labor and Welfare in Japan as an outstanding company for hiring disabled persons, and in December 2012, in a campaign by the United Nations Economic and Social Commission for Asia and the Pacific called “Ten Years of Disabled Persons in the Asia-Pacific Area,” President Otake of DSS received the Prime Minister’s Award. DSS also energetically invites visitors to tour its plant, and is a role model in Japan for the employment of disabled persons. Daikin promoted ac-



*Daikin Sunrise
Settsu Factory's interior (top)
Prime Minister's Award (left)*

tivities from 2007 to reduce the environmental footprint at all companies in the Daikin Group, and established in-house standards for the environment. In December 2011, DSS cleared that standard and won certification as a Super Green Heart Factory.

Making use of DSS's widely varied experience with disabled persons Daikin Air-conditioning (Shanghai) is moving energetically to employ disabled persons. Companies in Shanghai are obliged to employ disabled persons at a rate of 1.6 percent of all its employees. As of the end of March 2013, Daikin Air-conditioning (Shanghai) employed 65 disabled persons, 2.1 percent of its total workforce. Daikin Industries Thailand employs 13 disabled persons. As seen by DSS's figure of 7 percent in ordinary income to net sales, the disabled are not viewed as special employees. They are hired so that they may develop and contribute to society through their participation in production activities. Daikin pro-



Celebration of 90th Founding Anniversary

motes the employment of disabled persons by creating a work environment that allows them to have hope for the future.

Looking Toward Future

Daikin Industries, Ltd., celebrated its 90th founding anniversary on October 25, 2014. The company held the actual celebration five months earlier, in May, with about 2,000 persons attending from Japan and group companies in 30 overseas countries. Some of the undertakings Daikin introduced to commemorate its anniversary were a project for planting trees to promote the creation of fresh air, publication of its 90-year history in Japanese, English, and Chinese, and completion of the Technology and Innovation Center and the Seminar House at "Daikin Eau de Ciel Tateshina", both of which had been under construction. The project for planting trees included Japan (Shiretoko in Hokkaido) and six other countries, thus contributing globally toward a cleaner environment.

In the course of its 90-year history, Daikin Industries created many new businesses and much new technology. By always aiming to do well, the company fashioned a tradition of continuously organizing for success. Especially during the twenty years from



Project for Preservation of Wildlife in Thailand and Indonesia

1994 to the present, Daikin experienced rapid and widespread global changes in its business. In the midst of those changes, Daikin stood out from other companies in developing new businesses, products, and markets, and it expanded rapidly. Strong leadership made that growth possible. In particular, the foresightedness of Daikin's top managers in decision-making must be emphasized, as well as the high-performance capabilities of employees taking on difficult tasks. Management also applied the basic philosophy of being "people centered" and made efforts to create an outstanding working environment to maximize the willingness and capabilities of the company's employees. Also, at all times management displayed a flexible response to rapid growth and globalization.

Daikin's most recent ten years witnessed the purchases of OYL and Goodman, business ties with Gree, and other significant business integration. The company also actively developed new markets, including the "volume zone" of newly emerged nations. As one result, Daikin came to have business bases in 145 countries around the world, and overseas dealings came to account for 80 percent of the company's total sales. In that process, the company developed into a major corporation with 60,000 employees worldwide.

Emphasizing management based on people, Daikin thus expanded and grew rapidly. In place of the centrifugal tendency of most group organizations, Daikin's emphasis pulled together many people with different cultural backgrounds into the worldwide Daikin Group to form a strong organization that ties each group company closely to Daikin Industries Ltd., the parent company.

The annual policy of the Daikin Group announced at the beginning of 2015 was "Create the Future, Exceed in a Changing World." It emphasized the five main objectives: 1. never fail to notice the structural changes occurring in global economic society; 2. bolster "three powers" to achieve the company's F15 quantitative goals: monozukuri skills, a strong sales network, and outstanding, talented employees; 3. quicken our business progress by emphasizing a "flat and fast" approach with our people and in our organization; 4. tackle compliance and enhancement of our corporate ethics; and 5. with a view toward ten years in the future, each employee should contribute toward creating a company filled with great expectations.

In his 2015 New Year's Message, current President Masanori Togawa of Daikin spoke about the company's future as follows: "The capabilities of all employees should be applied toward realizing what the Daikin Group will look like ten years from now." Viewed in terms of the company's future technical competence, besides its own core technology Daikin should introduce new technology acquired outside through business ties and M&A. Doing so will allow the company to create new products and develop additional new technology. Daikin should also move forward with opening its technology to other companies around the world, and maintain its leadership in determining the future direction of new technology. Daikin should also promote the synthesis and

systemization of technology, and significantly expand its solution capabilities.

While moving forward with revolutionizing technology, there is also a need for the company to reorganize its existing business portfolio. That need is pointed out in the annual policy the Daikin Group announced for 2015. Daikin originally developed as a corporation based on strong competition between its two main business pillars of air conditioning and fluorochemicals. Although air conditioning provides almost 90 percent of Daikin's total business today, the company does not intend to allow its existing business fields to influence its future too severely.

New areas of business with great promise include wide-ranging and complex areas such as the environment, space, and general comfort. Based on the prediction for a serious food shortage in the future, attractive businesses might also include those for ensuring the freshness of food during transfer and storage. Another area of opportunity is the management of energy resources in newly developing countries suffering from a shortage of electricity, and high-level control of the air quality related to producing medicines and foodstuffs.

It appears that while changes in the global economy are occurring faster today than in the past, the direction of change is becoming more diversified and the world seems poised to enter a period of uncertainty. Daikin recognizes that in human society's pursuit of affluence brought about by economic progress, serious problems have emerged related to the earth's environment and energy. The company believes that through the technology it has accumulated over the years, one of its corporate missions is to make continuous efforts to resolve those problems.

In international society, the exchange of people and things has become much more active, and mutual understanding has ad-

vanced noticeably. It is important, therefore, for each Daikin employee to become more aware of global matters. As well, to provide leadership in the new global situation, managers of companies in the Daikin Group should develop a strong will and a clear future vision for leading each of their organizations. They should compete by rising above their limitations, and thus contribute to the future growth of the overall Daikin organization.