

Chapter V

Becoming an Attractive Company (2000–2006)

Fusion 05: Aiming for True Blue-Chip Status

Economic globalization picked up speed as the world moved toward the twenty-first century. In 1999, for example, the EU introduced the euro as its currency for settling transactions, and from January 1, 2002, euro banknotes went into circulation as twelve of the 27 countries in the EU and six non-EU member countries/regions started using the euro. There were great expectations for the unification of their markets and having them grow as one large market.

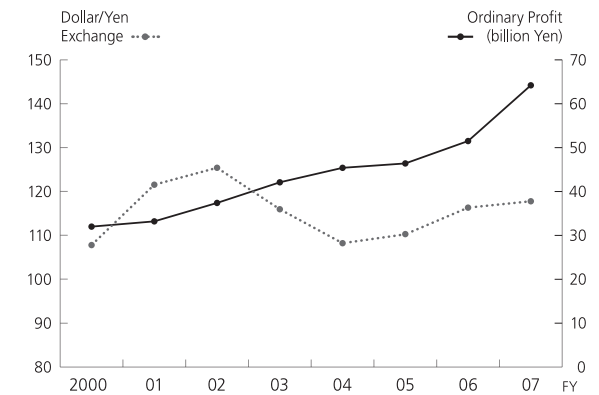
Although an economic crisis at the end of the twentieth century sent shock waves through several countries in Asia, the Chinese economy emerged as a bright new star on the international

horizon. In response to the bewildering changes in the global economy, the “mega-competition” between huge multi-national corporations heated up tremendously, and corporate restructuring based on large-scale mergers and buy-outs progressed rapidly. The turn of the century was a period during which corporations conducted their business far faster than previously.

Many Japanese corporations, however, could not move away from their past style of management, including the inter-dependence of group companies and warm government administrative protection. As a result, they were losing the sharp competitiveness they were known for and which was required for survival in global markets. Among the Japanese companies that decided to partner with foreign-capital companies, such as Nissan Motors and the French automaker Renault, there were some companies that attempted to introduce American-style corporate governance into their operations, leading to competition in establishing global standards. It was soon clear, however, that American-style corporate governance was not all-powerful, as seen by Enron Corporation’s bankruptcy. Japanese companies such as Toyota and Canon, meanwhile, were sharply aware of the merits of the unique Japanese style of management nurtured in their organizations from their founding. Those companies emphasized the favorable aspects of the Japanese system while globalizing themselves through dynamic reforms.

In 1994, Daikin introduced a managerial policy aimed at realizing a business structure marked by a fast and flat organization. Afterward, under President Noriyuki Inoue’s leadership, fast and flat management took firm root in Daikin. The company enthusiastically tackled managerial reforms by establishing and firmly fixing a unique form of corporate governance. As a result of success at that time, the company subsequently achieved rapid

Trends in Exchange Rates and Overseas Business Percentage of Daikin



growth at the turn of the century. The two main pillars supporting that growth were favorable exchange rate movements and a higher percentage of overseas business. Daikin was especially aware of the importance of establishing the “Daikin Way” of corporate governance. Many Japanese corporations at the time divided top management and their executive officers into two groups for faster decision-making by having relatively few managing directors. Daikin maintained a unique method of top-management operation by convening its board of directors, comprised of all directors and auditors, for wide-ranging, detailed discussions. This drew on the total wisdom of the group and enabled mutual information sharing. Also, in executing its operations Daikin utilized human resources in a flexible organization of task forces and projects, allowing the speedy resolution of problems. Amidst rapid changes in the business environment, meanwhile, Daikin closely reviewed its Fusion 21 management plan, drew up the Fusion 21D management plan in 1999, and at its board of directors meeting in May 2000 the company proposed a set of new business reforms aimed at realizing a unique approach to corporate governance.

Four main points marked the new set of business reforms. The first was energetic integrated management that placed the responsibility for management and the execution of operations with the company directors, and establishment of a new system that put associate officers exclusively in charge of carrying out certain operations requiring specialist knowledge. The second main point was a review of the virtual company system to conduct business that emphasized all-out current aggregate value and division responsibility. This point positioned the virtual companies as the units for promoting “management by ratio.” They comprised eight divisions: domestic air conditioning, global air conditioning, central air conditioning, chemicals, oil hydraulics, defense systems, electronics, and semiconductors. That organization allowed comprehensive control in a system of dual responsibility, with the corporation bearing overall responsibility and the virtual companies bearing responsibility for conducting operations in line with business policies and goals. The third main point was making certain the Daikin Way of doing business was being thoroughly practiced at the Daikin Group level. The fourth main point was expanding the role of the general shareholders meetings, strengthening investor and public relations activities, raising the level of accountability, maintaining amicable labor/management relations, and emphasizing information disclosure and management transparency.

In parallel with business reforms, Daikin also introduced sweeping improvements in human resources and employee benefits. The principal aim of the new system of human resources introduced in April 2000 was to build a new and equal relationship between the company and its employees that allowed for interactive communication with regard to choice. Early on, Daikin questioned the usual Japanese employment system of evaluating em-

ployees based on performance and for rehiring employees after their retirement at the age of 60. The new system contributed toward the company’s pursuit of “equal opportunity” and “fairness of results” by challenging all employees to realize change and to grant special rewards to employees who contributed notably to the company’s development.

Based on these various reforms, in April 2001 Daikin formulated its Fusion 05 Strategic Management Plan. When the company introduced this plan it also announced its intent to become a blue-chip global corporation. In that process, it aimed to be an especially attractive company in the three areas of personnel, capital, and information. Nine main points were set as business goals. First, each of the virtual companies was provided “management by ratio” goals to reach by 2003 in a mid-term implementation plan, and other goals were set to achieve by 2005 with emphasis on business reforms, such as structural reforms and the direction in which to head. Second, Daikin selected the air conditioning and fluorochemical businesses to develop itself into number one in the world. With that in mind, the company set its total sales goal at one trillion yen. Third, Daikin aimed to achieve “management by ratio” goals alongside the emphasis on Daikin-style Economic Value Added (EVA) and free cash flow. Also, in order to realize a change in the company’s structure as its business scale expanded, the company had to promote the innovation business inside its operations and to have overseas business account for 50 percent or more of its consolidated net sales. Fourth, exert all-out efforts to follow the principle of the market mechanism while fusing competition with Daikin’s traditions and corporate culture. President Inoue emphasized the company’s people-centered business philosophy held by former president Minoru Yamada, which said that “people” bear the responsibility for reforms. Each employee

should accept full personal responsibility to achieve the goal of building a solid team through each member's determination and enthusiasm. Fifth, with a customer-first policy as the starting point, conduct an overall review from the customer's viewpoint of workflow, from sales, design, R&D, manufacturing, and service to support divisions and the corporate division. Sixth, uphold the company's long-standing emphasis on technology and accelerate the development of more sophisticated technology and product differentiation. Seventh, introduce comprehensive business reforms using IT. Eighth, reassess the differences between core and non-core businesses while simultaneously responding to outsourcing needs of other companies and strictly enforcing so-called arbitrage management. And lastly, Daikin set a goal for establishing globalized corporate ethics. Accomplishing this goal involved four policies; 1. all-out quality control, 2. aggressive development of investor relations activities to promote management that emphasized aggregate current value, 3. in each aspect of the business, such as development, production activities, sales promotion and a PR strategy, become an advanced corporation in terms of its pro-environmental stance and 4. establishment of global corporate ethics and compliance with the law.

In the background of Daikin establishing these major goals was the rapid globalization of the company's business structure. Daikin introduced a new management system, continuously developed new products; introduced comprehensive quality control; and set up systems of accountability and compliance to actively disclose information and respond vigorously to environmental issues. Also, the company enthusiastically promoted more sophisticated global management than practiced in Fusion 21 up to that point. Management thus had an exceptionally clear awareness of the situation and became highly anxious about the need to push

forward with never-ending reforms. If Daikin hoped to become a truly blue-chip global company it had to conduct comprehensive "management by ratio" and build a solid business and financial structure, including improved profitability. Daikin also strongly emphasized the people orientation in its corporate culture, believing it is possible to realize the fusion on a global scale of "management by ratio" and fast and flat decision-making.

Noriyuki Inoue Assumes Chairmanship

The Fusion 05 Strategic Management Plan contained basic corporate principles which provided clear directional vision for Daikin. That plan allowed the company's corporate governance to evolve steadily alongside the principles. In June 2002, the company strengthened management by bringing in capabilities from the outside, making its managerial system more sophisticated and resulting in further emphasis on transparency, disclosure, and corporate ethics. One measure was to separate CEO and COO duties to speed up management and bolster consolidated control. This was realized by having President Noriyuki Inoue assume the chairmanship and Senior Managing Director Hiroyuki Kitai assume the presidency. The new president had worked closely with President Inoue and in 1989 was placed in charge of rebuilding the Chemicals Division. He was also head of the General Planning Department that formulated the Fusion 21 Strategic Management Plan, and as general manager of the Corporate Planning Department and concurrently senior managing director, he played a key role in formulating Fusion 05 as well. For many years he was truly President Inoue's right-hand man.

As management matters became more complicated and sophisticated, Daikin established a Steering Committee to speed up the decision-making and problem-solving processes. The regular



President Hiroyuki Kitai

members were CEO Inoue, COO Kitai, Vice President Satoshi Mizuno, Vice President Yukiyoshi Okano, and Executive Advisor Yasushi Yamada. New external members of the Board of Directors, meanwhile, included Tadasu Tachi, advisor to Kanegafuchi Chemical Industry, and Chiyono Terada, president and CEO of Art Corporation. Tachi was an expert in managing R&D and technology in the chemical field, and Terada was a pioneer entrepreneur who established a unique removal company based on the consumer's viewpoint and strongly supported female employees. As a way of using external management capabilities, Daikin had already established an Advisory Council System and the new system of using external directors, thus aiming to boost further the level of managerial transparency and awareness of the company's corporate social responsibility by having persons with independent and neutral perspectives participate in the decision-making process.

The globalization of Daikin's business increased rapidly from the late 1990s but the introduction of the Fusion 05 Strategic Management Plan in April cemented the principle of globalization and accelerated the process. Along with globalization, diverse human resources from around the world emerged to develop and promote Daikin's business activities. A need thus arose to create management principles as common guidelines for all employees.

No matter where in the world they worked, Daikin employees were expected to have a strong awareness of being members of Daikin, and to be able to think on their own and resolve problems unique to their location, based on Daikin's global strategy. For that purpose, in August 2002 Daikin established a Group Philosophy. Its original global strategy dated from 1990, when the company first began developing its global business. That was in response to the remarkable globalization that had occurred over the previous decade or more. The Group Philosophy was drawn up so that employees in each country and region, with different languages and cultural backgrounds, shared a common thread of understanding. The first item in the Group Philosophy was to move in advance of other companies to understand market needs and create new value. To do so, Daikin had to recognize changing social trends and discover emerging needs—even the dreams—of customers, and to have those needs reflected in specific products. In a word, that mission was to express in concrete form the company's customer-first policy. Daikin also promised to contribute to society through world-leading technology. The Daikin Technology Statement of February 2002 placed special emphasis on developing technology, and marked the Company's start in introducing large-scale reforms in technology. That was the introduction of a policy to accept the challenge of boosting the company's technical foundation by continually marketing high value-added products, solution-related products, and products that contributed to society and clearly differentiated Daikin from other companies. Daikin also emphasized that because the pride and joy that its employees feel can become a force that moves the entire Daikin Group, it was important to make absolutely certain that the revised personnel wage system provided employees "fairness of opportunity and reward." For that reason the company clearly stated that it would

maintain and expand job opportunities for employees who wished strongly for long-term employment during which they would continually contribute to the company's growth. At the same time, the company asked its employees to remain loyal and to perform their regular duties thoroughly, with the starting point being the "dreams" they have concerning their jobs, the "enthusiasm" they feel in moving to realize those dreams, and the "perseverance" needed to remain faithful to their duties and perform them even in adverse times. Lastly, the company had a goal of establishing the Daikin management system within the companies in the Daikin Group in order to manage people in a "fast and flat" organization to which Daikin employees around the world would be loyal. All employees should practice teamwork in meeting the challenge of achieving their work goals, and they should further improve the Daikin Group's strengths of developing measures in a global top-tier company with a flexible structure and traditions and a corporate culture of "Best Practice, Our Way." The group philosophy was aimed at passing on to employees in the Daikin Group around the world the fact that Daikin is a people-centered company.

Daikin prepared its Group Philosophy in Japanese, English, and Chinese, and distributed it to all group companies in Japan and overseas. Also, the chairman and the president visited companies in the group to directly explain the meaning and intent of the philosophy.

Naturally, of course, the Daikin companies in each region and each country had different social and cultural backgrounds, and often the employees spoke different languages. Thai was a popular language in Southeast Asia, for example, while many of the Southern European languages derived from Latin. The language barrier was thus a clear reality for Daikin as it moved to expand its



*First Group
Management Meeting*

business around the world, and the company strived diligently to respect other cultures while having Japanese-style management ideas reflected in specific overseas operations. To overcome the various problems it met while expanding overseas, Daikin called 2003 Year One for having its group philosophy understood at the worldwide group level. The company then moved to strengthen two-way communication with top management in all its group companies. It also actively educated Japanese employees transferred to group companies overseas so that they could embody the Group Philosophy in order to confirm that it was being reflected in specific business measures introduced at the local company level.

In order to make certain that important group business policies and strategies were being shared companywide, Daikin also began sponsoring a Group Management Meeting (GMM) once or twice a year. Members of the Steering Committee attended as did directors from related divisions, top managers from Daikin's eight major subsidiaries and other subsidiaries involved in businesses related to the GMM themes, top management from the eight companies comprising the main Daikin Group, and top management from the group companies most directly related to the themes be-



*Second Group
Management Meeting*

ing discussed. As part of Daikin's efforts to spread the Group Philosophy to all group members, the company held the first GMM in Osaka in June 2003 with 59 managers attending from Japan and Daikin's main overseas companies. President Inoue gave the welcome address followed by lively discussion that covered six main themes, including securing and developing human resources, developing products that fit the specific regions and countries where Daikin was doing business, total permeation of the Group Philosophy; and autonomy of the Group companies. Securing and developing human resources was a particularly important management theme, and based on the results of the conference discussions Daikin determined to establish an education and training program for new managers. Opinions voiced and questions asked during discussions in the GMM were answered either on the spot or within a set period of time afterward, part of the Daikin way.

In October 2004, in line with the above decision, Daikin established the "Daikin Managerial Training Center," an education and training program aimed at managers. The program enrolled 20 people per year-long course and offered a new course every six months, training 40 people at any given time. Over several years that program educated roughly 200~300 managerial-level employ-



80th Founding Ceremony

ees. The company also introduced a similar program for executive trainees from some of its overseas companies. Called the "Daikin Business School," the program trained about 20 persons per class from among employees selected to be next-generation managers.

The Second Group Management Meeting was held in Osaka for two days in October 2004, alongside Daikin's 80th Anniversary celebration. The meeting was a gala affair, with 260 participants that included managers from 96 companies in 23 countries, members of top management from Daikin Industries, Ltd., and representatives from the Daikin Group companies. The main theme for discussion was "The form and direction of the Daikin Group in five to ten years." The participants were separated into eight subgroups that then engaged in lively discussions. A panel discussion was held at the end of the conference under the theme "The increased sophistication of Group management, and understanding the role of the Group companies." Each of the subgroups had



President Yuki Yoshi Okano

one representative on the panel for discussing the theme. Vigorous discussion continued over the two-day conference for promoting flat communication and the sharing of information. When possible, Daikin responded immediately to questions raised during the meeting. For questions that required study, a clear deadline was set for providing the results of the study or answers to the questions.

In June 2004, Hiroyuki Kitai resigned from his positions as president and COO of Daikin for health reasons and assumed the position of senior advisor. Executive Vice President Yuki Yoshi Okano was then appointed to the vacated positions of president and COO. Other members of top management included vice presidents Katsuhiko Takagi, key in developing the global strategy of the air conditioning business; Hiroshi Tanaka, who headed the second set of reforms in the domestic air conditioning business after serving as president of DENV; and Guntaro Kawamura, who headed Daikin's business in China. Other members of top management included Masanori Togawa, appointed director, member of the board, and senior executive officer; Yasushi Yamada, appointed director, member of the board, and senior advisor; and Tadasu Tachi and Chiyono Terada, two external directors who continued to serve in the same positions. With the new president and COO assuming office, Daikin introduced an executive officer

system comprising 25 executive officers, including seven internal directors. The new system was designed to promote autonomous judgment and decisions by the officers to perform the company's business and functions, thus quickening strategic implementation. By having internal directors also act as executive directors, Daikin aimed at putting to good use in business decisions the benefits of having decision-making, execution, and supervision conducted close to the worksite. In these ways, as the series of reforms was introduced, one factor steadfastly maintained throughout was "integrated management." As a company aiming for "people-oriented management," Daikin considered maintaining leveled relationships as the main cornerstone for treatment of employees and the decision-making process of company officers.

Aggressive Expansion of Air Conditioning Business in Japan

As it moved forward with reforms in the air conditioning business, Daikin became more aware of the need, as a goal, to build a system of supply chain management (SCM). The company first tackled reforms in logistics in 1995, centered on production patterns, the streamlining of models, and the sharing of parts. It accomplished the first stage of reforms by fiscal 2000, and succeeded at that time in reducing the value of domestic and overseas inventories by about 10 billion yen. After that success, Daikin initiated a project to promote an SCM model strictly for the air conditioning business, thus marking the company's advance into its second stage of reforms, that of utilizing IT to build a Daikin-style SCM model linking together the company's suppliers and sales outlets. Through a highly itemized weekly order cycle, and a three-stage confirmation process, Daikin also aimed to bolster high-cycle production and to establish a build-to-order system (based on receipt of firm orders and clear specifications) for customized products



*Toyota Personnel Providing
SCM Guidance*

(modified or made-to-order products).

As Daikin's overseas business expanded a need emerged to transfer SCM expertise from Japan to the company's overseas operations. In looking at the global SCM in 2002, however, although the trend indicated a decrease in days of inventory on hand, the value of inventories increased as sales improved. DENV was a particular bottleneck because products were shipped there from both Japan and Thailand. Besides the geographical situation of having long lead-times, moreover, weather fluctuations caused a large disparity to emerge between predicted and actual sales. As a result, errors occurred related to product shortages, excess inventories, and confusion in order plans sent to parts suppliers. Those problems became especially serious in Europe during the scorching summer of 2003. In that situation, Daikin turned for guidance to Toyota Motor Corporation (TMC), known for having one of the automobile industry's finest global SCM systems. TMC had an in-house policy of providing SCM guidance to one outside company each year. In the fall of 2003, TMC selected Daikin to benefit from its direct SCM guidance.

Under TMC's guidance, Daikin completely revised its former SCM. The development, production, and procurement divisions of Daikin worked together with suppliers to shorten lead time,

reduce overall costs, reduce the time for developing parts, and eliminate waste. The results were increasingly stabilized product quality and reform of the former SCM that included suppliers, sales companies, and sales outlets. The origins of the Production of Daikin System (PDS) trace back directly to the Toyota production system. When Daikin originally introduced its system it was evaluated as significantly advanced in the air conditioning industry for its high-cycle production and ability to produce changing volumes of various products. But in terms of building a global SCM, there was still much to be learned from TMC.

The use of central air conditioning systems in Japan lagged far behind the U.S. market. Because of the relatively small market size in Japan there were also limitations to improving profitability. The construction market remained sluggish, moreover, causing a tough business environment for air conditioning products. Daikin, however, viewed the central air conditioning business as important in terms of cultivating the company's capabilities in developing proposal-based sales, and exerted great efforts to develop the central air conditioning business as one of the three main pillars of its overall air conditioning business. In central air conditioning systems, it is necessary to use air handling units and fan coil units to provide cool or warm air inside rooms as well as central heat resources such as water chillers and turbo refrigerators. Daikin was fortunate to be one of only few companies in Japan at the time capable of producing both those products in-house. Taking advantage of that capability, Daikin made efforts to cultivate sales personnel able to approach architects and design offices and have them build the company's equipment into construction specifications.

Daikin and the Trane Division of American Standard entered into business ties in the air conditioning business in November



Announcement of Business Ties with American Standard's Trane Division (CEO Poppy of ASI and Chairman Inoue)

2001. Trane, the second largest air conditioning manufacturer in the U.S. at the time, had particular strengths in the solutions business and in proposal-based sales centered on large- and medium-size central air conditioning systems. It had built a powerful network of dealers handling ductless-type air conditioners in Japan, other parts of Asia, and in Europe. Both companies, Daikin felt, complemented each other in their businesses. Daikin also felt that ties with Trane would help it rebuild its central air conditioning systems business in Japan and enable it to acquire know-how in the solutions business.

Trane's sales personnel, meanwhile, were sales engineers who conducted a range of activities from product PR to proposing the most appropriate system for particular customers, price negotiations, the issuing of product orders to Trane's plants and other companies, and providing after-sales services. In order to educate such personnel, Trane prepared a range of programs to fit their experience and capabilities.

The program instructors included sales engineers who actively worked all around the world and transferred their experi-

ence and cutting-edge market information to incoming sales personnel from Trane. They voluntarily attended the training programs, and paid their own expenses. The sales engineers worked on a commission basis and had great authority in their work. Depending on their sales, some of them earned more than company executives. They also bore heavy responsibilities, such as having to pay personally for mistakes they might make in, say, the combinations of equipment they proposed. That same commission system could not be applied directly to sales engineers in Japan because they received salaries. By studying counselor sales methods, however, sales engineers in Japan improved their personal skills remarkably.

In the applied business, where sales engineers designed systems to meet the needs of particular customers, Daikin also changed the organization of the Daikin Plant Co. and renamed it Daikin Applied Systems Co., Ltd. Through its ties with Trane, Daikin also expected to build a new business model in the solution business. In that business, it was important to propose low-cost and energy-efficient systems for comfortable living space that closely fit the needs of customers, with the combination of various equipment besides central air conditioners, and with the sophisticated technology of controlling all equipment.

As an air conditioning manufacturer, Daikin had to provide its customers with the air conditioning equipment most appropriate for their particular situation and to provide high-quality service. It was especially important to gain total customer satisfaction (CS). Daikin's approach to CS began with organizing a group of agents able to install, maintain, and repair air conditioning equipment. Next, in the 1990s, convenience stores and family restaurants became popular in Japan. Then, centered on stores and restaurants open 24 hours/day, Daikin established a system

that provided services all day, every day. Besides offering the same services nationwide from April 2004, the company also offered 24-hour repair services, technical advice, and the supply of parts/components. Daikin also established a system for supplying weekend, on-site, repair services nationwide, late-night services in urban areas, and advertised delivery of parts any day of the year. The service targets were not only sales outlets or customers using air conditioners in their offices but included air conditioning equipment operating in ordinary homes. Daikin was the first company in Japan to offer such services in the air conditioning business.

Daikin introduced the "AirNet" system in Japan in 1993 as a maintenance system for air conditioning equipment. The company later developed that system into a building control system and then into a central supervisory control system. From 2001, Daikin moved forcefully into the air conditioner monitoring business in China and some European countries. From 2002, moreover, it put "AirNet Eco" on the market and started the "AirNet" Control Centre in Japan, allowing bi-directional control by controlling efficient and comfortable operation of air conditioners through the feedback of information on weather conditions for the area in which the equipment was located and on the operating condition of the exact building's air conditioning equipment. In April 2003, meanwhile, the Japanese government introduced the Revised Energy Conservation Law, which provided tax benefits for installing energy-conscious air conditioning equipment. That law provided an incentive for installing such equipment, leading to Daikin winning 4,300 sales contracts at the end of 2002. Daikin's sales of related equipment for the same period, meanwhile, surpassed 42,000 systems.

From 2001, Daikin expanded and applied its servicing know-

how to the domestic market. Based on the rapid dispersion of information technology (IT), moreover, it became increasingly necessary for Daikin to respond quickly to Internet-based inquiries from customers. For that purpose, Daikin worked jointly with Cisco Systems, Inc., to develop an in-house system for managing online customer-related information, and introduced that system with NTT West Japan as the systems integrator. Seeing that the future would shift toward a business model with customers at the center, Daikin felt it would become important not only to respond promptly to inquiries from customers but also to analyze the inquiry information and have it reflected in product development and marketing. Customer inquiries up to that point went directly to either the Airconditioning Customer Center or, for repair services, to the Service Front Center. Inquiries averaged over 670,000 per year. Using multi-network technology, Daikin eventually merged those two centers to form the Internet Protocol Contact Center. Customers could contact the Center 24 hours/day, 365 days/year by telephone, e-mail, the Internet, or other medium they preferred. Based on the personal information the customer wanted, and the customer's previous business with Daikin, the phone call was then directed to the most appropriate person for action. The attendants at the centers used a centralized customer database to access a customer's history of inquiries, and then provided quick, generous, and accurate responses.

Daikin also developed a mobile terminal called an "e-SWAT" (Speedily Working Absolute Technique) System for resolving problems no matter where the customer was based. Immediately after a Daikin office received a request for maintenance assistance it dispatched a service engineer (SE) to the customer's premises. The SE used the "e-SWAT" System to confirm customer- and service-related information, including information on past mainte-

nance services, technical information, the current availability of needed parts, and so forth. In addition, the SE input the results of the visit into a computer connected to the company while with the customer. It thus became possible for dealers to receive repair reports from Daikin's SEs in real time.

Based on the new system, customer service improved remarkably. Daikin also established a system for providing late night services in the Tokyo, Nagoya, and Osaka areas. The company saved on customer service center office space, required fewer operators, and was able to concentrate its telephone lines, to considerably reduce costs. The greatest benefit was that it became possible to centralize customer information, enabling the company to develop products and conduct marketing directed at specific customer needs.

In contrast to the record-breaking heat of Europe's 2003 summer, Japan's summer that year set records for being cold, and air conditioning sales were generally low. Overall, however, the sales of high-performance, high-price units increased. Sales of Daikin's "Ururu Sarara" series, for example, with its humidifying and dehumidifying functions providing year-round comfort, increased 40 percent over the previous year. That favorable sales performance raised Daikin to top position in the domestic room air conditioning market, taking the number one domestic spot from Matsushita Electric Industrial (today's Panasonic) who held it for many years. In an extremely hot summer in 2004, moreover, with high temperatures continuing into September, the domestic demand for air conditioning increased significantly. Daikin recorded sales double the previous year, and its market share increased to 18.8 percent. The main reason for the favorable sales of the "Ururu Sarara" series was product attractiveness, especially its high functionality. Consumers said the name "Ururu Sarara", as

well as Daikin's marketing character "Pichonkun" were "friendly." Another major factor was that consumers began to relax with Daikin products, knowing that a system of repair service was available 24 hours a day, 365 days a year. Daikin also closely followed its in-house rule of meeting domestic demand with domestic production. It had built a production system enabling it to meet changes in demand with three days lead time, making it possible to hold down excessive inventories and respond quickly to increased demand. Large appliance stores appreciated Daikin's approach because they suffered from large leftover inventories during the previous year's cold summer, and their favorable sales capabilities added to Daikin's overall positive sales performance.

Daikin Technology Statement and Production System for Changeable Models and Volumes

Daikin announced its Technology Statement in February 2002, hoping through it to become the world's No. 1 air conditioning equipment manufacturer in terms of engineering staff and technological capabilities. The Statement contained measures to promote drastic reforms in technology. Daikin had many tasks at all production sites such as product development, reliability of products, and development of distinct products in the mid and long terms. In order to cover the gap between goals expressed in the strategic management plan and actual performance and in the process becoming number one in the world in technical prowess, President Inoue and the directors in charge of technical matters and air conditioning technology in Daikin hotly debated related issues, which served to clarify the direction in which the company should move. Daikin always did its best as a company to respond to comments from employees and to expand internal discussions and introduce measures for realizing major reforms in technology.

President Inoue wrote a message accompanying the Daikin Technology Statement. "The company," he said, "will put into order an environment for enabling our engineers to conduct wide-ranging activities freely." He also emphasized the point that technological reforms must be a never-ending task for Daikin. To accomplish reforms, Inoue said Daikin's engineers must apply their vitality toward reforming their thinking and improving their technical expertise. For management, the primary support task was to put a system into order that allowed engineers to be aware of their specific duties while conducting their technical activities. Three particular sets of reforms Daikin introduced at that time to realize major technical reforms were: 1. structural and organizational reforms aimed at flat, matrix-type operations, and reforms for simple, speedy, decision-making; 2. from the viewpoint of selection and concentration, clarification three to five years in advance of R&D themes to develop and those to eliminate; and 3. measures aimed at raising the quality of engineers.

With the structural and organizational reforms mentioned above, the divisions directly related to production were all integrated into the air conditioning production headquarters. This included the room air conditioning production division and commercial use air conditioning production division, as well as the compressors development section and quality management section. As in the past, moreover, they were placed under the director overseeing production. For duties related to the development of important products, however, Daikin introduced a new system in which two directors shared the duties related to overseeing air conditioning production and machinery R&D. That new system speeded up decision-making in the long process from element technology to production. For product development and R&D themes, moreover, the director in charge of air conditioning pro-

duction and the director in charge of machinery R&D discussed issues that arose and either established new procedures or resolved/discarded problem areas. As a staff division, Daikin established the new Air Conditioner Planning and Development Section, providing the company an overall grasp of the development situation regarding air conditioning. The new division also acted as the meeting point for information it provided to the company's various divisions. In addition, the air conditioning production headquarters and research division bolstered their marketing personnel, establishing a system in which the production and research divisions accepted the responsibility for providing product concepts. Also, apart from the air conditioning production headquarters, Daikin established a new department called the Air Conditioning Reliability and Innovation Department, as well as the Global Promotion Group established inside the Planning Department in the Air conditioning Production Headquarters.

Thirteen development themes for important products, including existing themes, were identified and reviewed from the viewpoints of "selection" and "concentration." Those themes included a strengthening of global cost competitiveness, establishment of top product attractiveness among ductless-type air conditioners, and development of high value-added products on the cutting edge of technology. A total of 90 such themes were identified, of which 32 were rejected early on. Daikin selected 101 technical development themes, such as response to the global environment, acceleration of the company's solution business, development of devices to differentiate Daikin's next-generation air conditioners from competitive equipment, and the quest for new technology. On the other hand, Daikin dropped 25 themes.

In terms of its research system, Daikin moved to raise the level of its air conditioning technology by exposing it to the market

principle. In order to promote the development of unique technology, in April 2000 it also established several new research organizations by turning three internal research groups into companies. They were the Daikin Air Conditioning Technology Research Center, the Daikin Systems Solutions Research Center, and the Daikin Environmental Research Center. In order to provide direction to those three research centers, Daikin established 19 important technology development themes, including bolstering its system of technology development related to the global environment, a speeding up of its solution business, and development of highly technical devices for supporting the company's next-generation air conditioning. Daikin appointed the director overseeing machinery R&D to head the R&D activities related to those 19 themes. Daikin also established the new Research Management Department. In terms of production technology developed in the Manufacturing Division, the company established four important themes, including a strengthening of fundamental technology and technical capabilities, the binding together of the development of distinct products and production technology, a bolstering of global manufacturing capabilities, and the passing on of technology. Daikin also bolstered its personnel requirements for these efforts.

In line with the new structures and organizations, work duties moved forward by making the themes handled by the engineers and development staff—and their schedules—open to others; clarifying roles and duties for making technical capabilities more sophisticated; setting up a team for each development theme, and through close communication with managers and leaders, conducting comprehensive management of goals by division. Also, engineers were asked to tackle trial themes through active exchanges with external research organizations, even as Daikin

improved and strengthened its in-house education and training program. In such ways, therefore, Daikin put into order the environment needed for its engineers to tackle head-on and carry out effectively the themes assigned to them.

Daikin promoted further improvements in the PDS production system by establishing a structure for responding speedily to changes in the market environment. One special feature of the air conditioning industry, where demand fluctuated widely by season, was the importance of being able to respond quickly to demand influenced by local weather changes. Concerning room air conditioners, for example, although production plans were prepared up to 1999 based on 15-day cycles, by 2002 the cycle was shortened to three days. In other words, production plans were prepared in advance based on demand forecasts and were adjusted later as actual demand became clear. Ex-factory shipments were made three days after receiving firm orders, the so-called “high-cycle production method.” The first steps introduced in using that method was the adjustment of seasonal fluctuations so that the disparity in annual production volume at peak would be triple the bottom dip volume. One way to accomplish that was to introduce a system of flexible working hours, made possible by the revised Labor Standards Law. While keeping the fluctuation in the number of personnel at a minimal level, Daikin adjusted working hours by season. It also adjusted plant operation hours, and as a way to respond to peak production periods, it also gradually increased the number of contract workers. From 2004, moreover, when the law was changed to allow the employment of dispatched workers in the manufacturing industry, the total number of workers from contractors and worker dispatching agencies reached almost 80 percent of the total workforce.

Also, Daikin introduced innovations in its production lines to



*Cell Production Line of
Room Air Conditioners
Inside Shiga Plant*

adapt to short-term fluctuations in production volume and the variety of models being produced, and to maximize the capabilities of the line workers. In 2001, moreover, Daikin introduced the cell method of production at the Shiga Plant. In that method, one worker, or several workers working together, assembled products. From the end of 1990, with the twin aims of raising product quality and increasing productivity, many Japanese manufacturers began employing the cell method. Different companies, however, used the method in different ways. In Daikin, a cell worker received a set of components and a frame on the conveyor line and assembled them offline. When assembly of one air conditioner was completed the worker immediately moved on to the next one. Several workers, meanwhile, teamed up to assemble large, commercial-use air conditioners and freezers. During peak season, when the production volume of air conditioners increases greatly, the traditional method of line assembly was also used, as it increased production more quickly and the productivity is higher than the cell method. A review was also made to rid production lines of unneeded automation, including the dismantling of some robots, helping to add more flexibility in the design of assembly operations. And in order to improve efficiency, in response to the

fluctuations in production volume and the variety of different models, flexibility was especially important when assigning duties to workers. Also, workers carried “passports” stamped to indicate their level of competence in particular assembly processes. A production system was established that allowed changeable production volumes of different products. In 2002, the Shiga Plant was the first plant to win the Monozukuri Gran Prix Award from the Japan Society of Plant Engineers. Daikin learned from Toyota Motor Corporation, however, that production system reforms are a never-ending process, and to this day the company continues to meet kaizen challenges in its production system.



Worker's Passport

Transfer of Skills, and Development of New Products

From the end of the 1990s, in response to the rapid globalization of production, support by domestic plants for overseas production bases became a more urgent task than previously. This was mainly because production capacity was greatly increased at overseas locations, including DENV in Belgium and DIT in Thailand. Daikin also built air conditioning plants in China and the Czech Republic. One result was that the number of employees in Daikin-related overseas operations increased rapidly almost 6-fold from 1,700 persons at the end of 1994 to 9,800 persons at the end of 2004. In order to support start-up operations at the several new plants being built overseas, many DIL workers with knowledge and experience in production operations were sent there from Japan. It was natural, therefore, for Daikin to send mostly veteran employees overseas to train the non-Japanese employees and assist them

in starting up local operations. Since the employees who gave guidance at overseas plants needed to know all production processes, those with the most on-site experience were selected.

In that context, education related to technical skills became more important at DIL's domestic plants, especially emphasizing the training of new employees to be full-fledged workers as quickly as possible, and to provide them with multi-skills. Daikin opened an education and training center to provide new employees with basic education prior to working inside the company. The company also developed widely varied and improved in-house education programs, and designed a special course to develop technicians who could work in cell assembly sections to evaluate the capabilities and technical/non-technical inclinations of new employees.

Three main factors comprised the approach to in-house education. First, the *monozukuri* skills that supported product performance, product quality, and manufacturing costs were not systematized. That meant if skilled workers retired there was concern that the workplace would lose those skills. Second was that as more parts were made outside and the production lines became more automated, the skills available in-house were "hollowed out," causing the loss of an important venue for developing human resources with superior technical skills for providing guidance to workers in overseas plants. The third factor concerned product development. Fewer skilled workers on assembly lines meant a proportional decrease in meaningful product evaluations and proposals from the workplace, leading to concern about a decrease in the ability to develop attractive products.

Daikin thus felt great concern about a decrease in the number of skilled workers in its domestic plants. To quickly create a system for promoting such transfer of skills, the company established



Scenes of Company-wide Technical Skills Olympics; Clockwise from upper left, Sheet metal processing, Lathe operation, Brazing, Electric welding

a Superior Skills Succession Committee in April 2001. In particular, it selected strategically important skills and established a system of accredited meisters (master craftsmen). The role of the meisters was to develop workers to carry on skills, provide guidance for raising the level of production line skills, make *monozukuri* proposals on safety, product quality, and manufacturing costs, and prepare manuals about their personal skills. In a word, the *meister* system was established to have skilled workers convey their skills to the next generation of workers. In order to promote raising technical skills throughout the company, meanwhile, in 2003 Daikin sponsored a company-wide technical skills competition. It changed the name of the competition the following year to the Daikin Technical Skill Olympics. Daikin also invited highly skilled employees from overseas plants to participate, and they all competed at the same product quality level. The Superior Skills

Succession Committee later improved and strengthened the system for supporting the development of skilled workers in the overseas plants, and for its part the Chemicals Division moved forward with preparations to promote activities for enabling the transfer of skills to next-generation workers.

After Daikin announced its Daikin Technology Statement, the air conditioning division dramatically increased the pace of its new product development activities. The Group Philosophy clearly stated how the company must move in advance of other companies to appreciate market needs, and to create new value in the process. That same philosophy was at the core of the Fusion Strategic Management Plan introduced earlier, and was a main pillar supporting the Daikin Technology Statement. In the air conditioning division, from as early as 1996 it was believed that next-generation room air conditioners would require the all-out pursuit of energy conservation, and Daikin developed reluctance DC technology for that purpose. When room air conditioners and packaged air conditioners fitted with reluctance DC motors were first marketed, they were praised as game-changing low energy consumption models. The same technology was used in the ultra-energy conscious “Super Inverter 60” Series that Daikin marketed in 1998. Sales of that series contributed greatly to a large increase in the company’s market share.

The next issue Daikin tackled was helping convenience stores make themselves more energy efficient. During the 1990s, the number of convenience stores in Japan increased remarkably, and the market situation turned excessively competitive at the end of the 1990s. In that context, the parent company of one of the major convenience store chains approached Daikin to inquire about making their stores more energy efficient. The results of a survey showed that the stores were buying equipment such as air condi-

tioning equipment, freezers and showcase refrigerators directly from specialist manufacturers, and the outdoor units of each piece of equipment were lined up against the outside walls of the stores. Zero attention was being paid to the overall energy efficiency of the stores. In order to improve that situation, Daikin developed the innovative “Convini-Pack ZEAS” that combined energy-efficient and low-temperature technology it had cultivated up to then.

The “Convini-Pack ZEAS” Exhibition held in Tokyo generated much attention. One of the product’s first installations was in a major convenience store chain; not long afterward it was also sold to a chain of drugstores. As a reflection of the product’s outstanding energy-conservation performance, in 2003 it won three major awards: the Energy Conservation Award of the Minister of Economy, Trade and Industry, the Minister of the Environment Award for Contributing to Prevention of Global Warming and the First Award for Promoting Development of New Machinery. It sold particularly well from 2009 to factories and warehouses after changing its name for marketing reasons to the System for Recovering Heat from Freezing, Cooling, and Air Conditioning Systems.

Although Daikin initially used reluctance DC technology in an energy-efficient motor fitted to the “Convini-Pack ZEAS”, it also found other applications outside the air conditioning division. In the oil hydraulics business, for example, the same technology was used in a power motion control unit and in semiconductor chillers in the semiconductor business. Using the same motor, Daikin expanded its outside sales of compressors, thus contributing substantially to strengthening the competitiveness of other divisions in the company. Eventually, the company came to hold 26 patents related to the DC motor, including two basic patents, and it licensed the technology to other companies. The DC motor won

the All Japan Outstanding Invention Award for 2003.

The home-use water heater “EcoCute” was not developed using solely Daikin technology, and it used a natural refrigerant (CO₂) heat pump. The name “EcoCute” came to be used popularly by electric power companies and water heater manufacturers in Japan for all heat-pump type water heaters using CO₂. Daikin originally conducted joint research with Kansai Electric Power and Chubu Electric Power to develop the product. Since the refrigerant did not harm the ozone layer it was in accord with ecology, and it was economical because it used late-night electric power. Daikin later developed unique energy-efficient technology that achieved a high heat efficiency percentage and emitted CO₂ at a level only 50 percent that of ordinary gas water heaters. That technology contributed toward preventing global warming. Residences accounted for some 14 percent of Japan’s total energy consumption at the time, and water heating accounted for 28 percent of the total energy consumed in residences. In order to achieve the Kyoto Protocol targets for reducing greenhouse gasses, therefore, it was important to lower the volume of CO₂ emitted by water heaters in residences. In that sense, Daikin’s “EcoCute” water heater became a focus of attention in the Japanese market.

Toward Building Eight-Polar Markets for Global Air Conditioning

The global air conditioning and related markets in 2004 were estimated to be worth 41 billion dollars for air conditioners (a/c) and 40 billion dollars for freezers, servicing, and other areas. Ductless-type a/c equipment held about half of the overall market, and the Japanese market at 15 billion dollars (at the rate of one dollar = 110 yen) accounted for an overwhelming share of the total global market. In the U.S., meanwhile, sales of central a/c equipment held

an overwhelming share of the total a/c market, estimated at over 23 billion dollars. Both the U.S. and Japanese a/c markets can be said to have reached levels of almost total maturity. In expanding markets such as China and the countries of Europe, meanwhile, companies producing ductless-type air conditioners began aggressive sales offensives in the central a/c market. Once into the twenty-first century, besides manufacturers from Japan, Europe, and the U.S., manufacturers from South Korea and China also competed in the Chinese market, intensifying the competition. Japanese electric home appliance manufacturers, meanwhile, began expanding their production activities globally from the 1980s. From the early 2000s, however, they watched as their foreign markets were being slowly eroded, especially due to South Korea and China exporting inexpensive products, forcing them to fight difficult battles to retain market share.

Daikin’s overseas a/c strategy in the 1990s went no further than operating Daikin Europe (DENV) in Belgium and Daikin Industries (Thailand) (DIT) as production centers. Daikin also attempted but failed to enter the U.S. air conditioner market. The total company’s overseas operations, even including the Chemical Division’s successful entry into the U.S. market, was no more than about 30 percent of its entire operations. Once into 2004, however, Daikin established overseas companies one after the other—22 air conditioning sales companies, 13 production centers, 8 chemical sales companies, and 10 chemical production companies—raising its overseas operations to 45 percent of its overall operations. In that way, Daikin finally moved all-out in developing its global business.

Daikin’s first move in expanding its global strategy in the air conditioning business was in March 1972 when it established Daikin Europe N.V. (DENV) in Belgium. After bolstering DENV’s op-



30th Anniversary of DENV's Founding

erations, Daikin then moved to expand its overall operations in Europe. From the 1990s, for example, it expanded DENV's production capacity. In Europe at the time, however, although countries in northern Europe were industrializing themselves, the weather there was generally cool and the interest in a/c equipment was generally subdued. Although there was a need for a/c equipment in the more southern European countries, the purchasing power there was not developed, making the market size small, which placed limits on how far production could be expanded. That situation changed from around the year 2000.

A major factor affecting a/c sales was global warming. In northern Europe, neither traditional building architecture nor more recent structures were fitted with sufficient window space to offset hot weather, and the year 2003 was particularly hot, leading to a sharp rise in the demand for a/c equipment. In southern Europe, meanwhile, introduction of the euro as the area's common currency led to increased industrialization, and to notably greater purchasing power. Along with the rapid spread of IT, the demand for office-use a/c equipment increased rapidly. In the backdrop of



Daikin Airconditioning Italy (DACI)

the increased market size, a/c manufacturers in China and South Korea also entered the market. One reason for this was the strong euro, coupled with severe price cutting by South Korean and Chinese companies. In that situation, DENV introduced a new market development strategy.

The first step in its market strategy was putting its sales network into order. Although it could be said that some progress was already being realized to unify the markets in European countries by using the euro, major differences remained in matters such as daily life patterns and business practices. DENV appointed distributors in each country and paid them sales commissions. From the early 1990s into the early 2000s, however, DENV gradually reorganized those distributors and made them subsidiaries directly under its control. The first of those distributors to become a DENV subsidiary was Megatherm, Daikin's distributor in France. Daikin bought out Megatherm in 1993 and renamed it Daikin Airconditioning France S.A.S. (DAF). Next, in June 1998, Daikin established Daikin Airconditioning Germany (DAG) in Munich, and in April 2000 bought out its sole distributor in Spain, afterward establishing Daikin Airconditioning Spain S.A. (DAS) in Madrid. Then, one after the other, it established Daikin Airconditioning Poland (DAPO) in Warsaw in 2001, Daikin Airconditioning Italy (DACI) in Milan in 2002, and Daikin Airconditioning UK (DAUK) in London



Daikin Airconditioning U.K. (DAUK)

in 2003. Daikin's strategy of working through these sales companies allowed a quicker penetration of European markets. One of its sales strategies was so-called "route sales," and it emphasized education related to installation, maintenance, service, and sales know-how for turning salespersons into a/c professionals. Another strategy was to provide back up support for retailers selling only a/c equipment. In those retailers, a/c experts concentrated their sales activities on design offices, in order to have the specifications for Daikin equipment built into design blueprints. Around that same time, Daikin introduced the "VRV", a Japanese-style ductless multi-type a/c, to the commercial use a/c market, and eventually made it standard equipment for use in the European market.

Through these sales companies, Daikin strategically introduced the most recent equipment to European countries, including an air conditioner equipped with an inverter and a new refrigerant. This led to the company's rapid growth in the European market. Also, its agents in Portugal (2004), South Africa (2005), and Greece (2006) became Daikin-owned sales companies. Eventually, Daikin boasted of eleven a/c sales companies in Europe. From 2005, moreover, with the aim of expanding sales to countries bordering on Europe, Daikin moved to put its a/c sales companies into order. In May 2005, for instance, it opened an office in Moscow, and after closing TEVA, its agent in Turkey, it established a

sales office in Istanbul. Daikin also began a detailed study of its operations in South Africa and in Dubai in the UAE.

The second move in Daikin's market development strategy was to introduce more order into its production system. The period from 2000 to 2003, in particular, a period during which Daikin's operations in Europe began expanding rapidly, in line with a gradual appreciation of the euro. Manufacturers in South Korea and China, meanwhile, expanded their market shares rapidly in Europe in the context of their weakened currencies. Although DENV, meanwhile, with its head office in Ostend, Belgium, bolstered its production capabilities and made efforts to reduce its costs, it did not have sufficient production capacity to respond to the expanding European market. Even to European standards, labor costs in Belgium were high, and thus there were limits to how far companies in Belgium could reduce their production costs. In a room air conditioning market where price competition was intense, Daikin began moving total production of a/c equipment using the new refrigerant HFC410, first marketed in 2004, to DIT in Thailand.

Not long after the Soviet Union began opening its markets in the 1990s, the countries of central Europe entered a decade-long take off period. Central Europe then developed into a hub of industrial production and entered a period of economic growth. The market for a/c equipment, meanwhile, began expanding to include Russia, Poland, the Czech Republic, and other countries. Analyzing market trends, Daikin realized that labor was abundant and relatively inexpensive in Central European nations, and the countries there had extensive experience with industrial production. Daikin thus planned to build a new plant there. Another point was that shipping from Thailand to Europe took almost a month, making it difficult to respond in a timely manner to the

rapidly changing European a/c market. The summer of 2003 was particularly hot in Europe, making Daikin's concerns a reality: the company met the shortage of products to satisfy that year's market demand. In the end, Daikin transported room air conditioners from Thailand via air delivery services. For several years the company had been considering the possibility of expanding its market in Europe and was aware of the problems it faced. It had already surveyed potential locations for a production site, and early in 2003 it purchased land for building a plant in Pilsen, located in the western part of the Czech Republic, not far from the border with Germany. Skoda Auto a.s., manufacturer of the famous Skoda automobile, was founded in Pilsen, and the city had the basic utilities to support industries such as automakers, automobile-parts and other machine makers. Daikin's plan was to build an all-out a/c plant in Pilsen and move production of commercial-use duct-type and cassette-type indoor units there from the Ostende Plant and to move the production of medium and large-size room air conditioners, multi-room air conditioners ("VRV"), and other products to Pilsen from its plant in Thailand.

With the extremely hot summer in 2003, the European market expanded much faster than Daikin expected. Viewing the market changes as structural, Daikin began a new study in October for expanding sales in Europe, and confirmed a clear policy of producing products in Europe for local markets. The company established a project team comprised of members from the DENV Manufacturing and Sales Divisions, the DIL Manufacturing Division, the DENV Supply Center, and for two weeks the team held concentrated studies and discussions. After considering the team's results, in November 2003 Daikin decided to change the product lineup for the new plant in Pilsen from commercial-use indoor units to indoor and outdoor units for small-size room air condi-



*Daikin Industries Czech Republic
(DICZ) (top)
Production Line of DICZ (right)*

tioners. The new plan also called for a production capacity increase for start-up in 2004 of 300,000 units a year, double the initial plan, and eventual local production of medium- to large-size room air conditioners. Those decisions were a major change in the direction of the company's strategy for increasing sales in Europe, and the speed of those decisions was truly the result of putting into practice the company's "fast and flat" management principle. The new strategy required major additional investments in plant and equipment, including more buildings in the new plant, more equipment for processing and assembling heat exchangers, and the installation of product testing equipment. The company also decided to establish new plant for producing compressors.

In May 2003, Daikin and DENV established Daikin Industries Czech Republic s.r.o. (DICZ), capitalized at 10 million euros, as a 50-50 joint venture. For several months the two groups discussed policy and other changes, and at the same time, began plant con-



*Daikin Device
Czech Republic (DDCZ)*

struction in October. As a result of their discussions, they had to revise the plant layout and a final review of the equipment to be installed. Regarding the number of employees, initial plans called for 500 employees but the revised plan increased the number to 1,200 employees by 2005. Although various complexities emerged in the process of establishing the company and hiring the first employees, they were resolved one after the other, and DICZ began operations in September 2004. A new plant was also built in Bruno, an industrial city in the eastern part of the Czech Republic, with an annual production target of 600,000 swing-type compressors. The infrastructure in the new industrial complex where the plant was located was completely dependable. An industrial college was also located in Bruno, making the location attractive as well for acquiring outstanding personnel as well. In October 2004, Daikin established Daikin Device Czech Republic (DDC) as a wholly owned subsidiary. Operations began there in 2006.

The size of the European air conditioning market expanded rapidly from 3,108 million euros in 1997 to 5,310 million euros in 2002. Then, following a blistering summer in 2004, the market for air conditioning jumped to 6,900 million euros, and in 2006 jumped again to 7,538 million euros. Daikin sales in Europe in-

creased from 628 million euros in 2000 to 724 million euros in 2002, to 1,134 million euros in 2004, and to 1,515 million euros in 2006. In the process, Daikin's market share increased from 14 percent in 2002 to 19 percent in 2006, a higher growth rate than that of the overall European market. During that same period, starting in 2004, Daikin passed Carrier Corporation to hold the largest air conditioning market share in Europe. That success was the result of Daikin quickly introducing various new policies, including a more orderly production system and a speedy expansion of its sales system.

The second part of Daikin's air conditioning global market expansion strategy was entry into the U.S. market. Daikin had previously entered the North American market in 1998 through joint development of air conditioning equipment with Modine, Inc. The joint venture, however, was unable to develop new products, and Daikin pulled out of the project in early 2000. The company next entered into business ties with Trane Company in November 2001 for all-out entry into the ductless-type air conditioning market in Canada and the U.S. and held great expectations for development of that business. Trane was especially competitive in the North America central air conditioning market, and Daikin had particular strengths in the ductless-type air conditioning markets in Japan and China. The aims of the ties between Daikin and Trane were to build mutually strong business ties by manufacturing and supplying products to eight polar markets for air conditioning, covering the Asia-Pacific region, China, Europe, Japan, North America, Latin America, the Mideast/Africa, and South Korea. For its part, Daikin established a separate "North America Task Force" in May 2004, thus initiating its third attempt to enter the U.S. market. Its plan included stationing about 40 employees in New York, including engineers, strategy planners, and



*Agreement Signing
Ceremony for Purchasing
OYL Industries*

personnel from sales and other divisions. Besides test marketing of ductless-type air conditioners, Daikin also considered possible M&A or expanding its business in the duct-type air conditioning market in the U.S., by buying out or forming new ties with some other company. Research conducted at the time indicated it was possible to buy McQuay International Corporation (MIC), which had a share of the applied market in the U.S., from OYL Industries Bhd. As events evolved, however, Daikin changed its global business strategy substantially by buying out OYL and began promoting the expansion of its worldwide business on its own. That purchase marked an end to Daikin's business ties with Trane.

The third part of Daikin's market expansion strategy was emphasis on further development of the ASEAN and Australian markets: Thailand had recovered from the Asian currency crisis; Australia was showing stable economic growth; and Daikin already enjoyed a major share of the local market in Singapore. In general, Daikin moved forcefully in the ASEAN countries where it already had encouraging sales, aiming to expand its market shares further. The markets in those countries were exclusively for non-inverter type cooling equipment that used the refrigerant R22. Daikin utilized DIT in Thailand as a production hub for products aimed at the ASEAN countries. Besides efforts to bolster

its cost competitiveness, Daikin led other companies by introducing inverters in its air conditioners using R22. In that situation, Daikin shifted all production of packaged air conditioner "VRV" to DIT in 2005. Then, as DIT came to produce a full range of RA, PA, small-duct, and other equipment, it began supplying large volumes of products not only to the ASEAN countries but also to countries in Europe. The functions for producing volume items and exclusive cooling equipment were also shifted exclusively to DIT, strengthening the move to turn DIT into a business hub in the ASEAN region. Australia, meanwhile, had previously been a market for duct-type air conditioners, but in the background of a housing boom there, Daikin expanded its market share to become number one in Australia by emphasizing sales of "VRV" and "SkyAir" products. To expand its market position further, Daikin bolstered the sales and service structures of Daikin Australia.

Development of Strategy for Chinese Market

Daikin's air conditioning business in China started in 1997 with production operations by Shanghai Daikin Airconditioning Co., Ltd., Xi-an Daikin Co., Ltd., and Huizhou Daikin Co., Ltd. The company simultaneously introduced a system of 24-hour service. Competition in the Chinese market was more intense than in the European markets, with many local Chinese companies setting up operations randomly, resulting in fierce price competition. Daikin, however, introduced advanced, high value-added products that created their own high-end market. In the context of a sales campaign that called Daikin products the "Benz among air conditioners," Daikin won customers using a sales approach emphasizing the high quality of its products and its application of leading-edge technology. Sales, meanwhile, were mainly through Daikin exclusive dealers that dealt only in cash transactions, and



*Beijing Headquarters
of Daikin Investment
(China) Co.*

Daikin rapidly expanded its market share. Operations turned profitable in the third year after beginning local production. In its fourth year in China, Daikin cleared its accumulated loss and by its fifth year the company earned a return on its investment thus quickly succeeding in achieving its initial objectives. At the end of 2000, Daikin had four production centers and 18 sales centers in China, and in 2002 it expanded that organization to six production centers and 29 sales centers, plus three service companies and one research center. The overall Chinese market for air conditioning was valued at 530 billion yen, and Daikin's share was 7 percent, worth 34.6 billion yen.

Once into the twenty-first century, Daikin reviewed its organization and strategy in order to expand its markets in China. In September 2001, it established Daikin (China) Investment Co., Ltd. (DCI), capitalized at US\$30 million. DCI oversaw all Daikin operations in China to make its investments more efficient. At the time, business-related regulations in China differed depending on the particular region. Foreign affiliates were also required to have joint ventures with Chinese companies. Those restrictions negatively affected the success of foreign affiliates. Following the Asian currency crisis from mid-1997 to early 1998, however, China's economy developed rapidly and the WTO began considering Chi-

na's request for membership. Paralleling those developments, the Chinese government gradually relaxed its domestic business restrictions. In 1999, for example, the government approved an expansion of the functions of foreign headquartered companies, thus increasing the benefits to foreign companies when they established investment companies in China. In that context, Daikin in January 2003 bolstered the control function over its operations in China by establishing a Corporate Division inside DCI and appointing Ken Tayano, formerly with Shanghai Daikin Airconditioning (SDAC), in charge of accounting. Daikin also established capital ties between DCI and both SDAC and Huizhou Daikin, thus clearly placing all the Daikin companies in China under DCI. Besides its function as a holding company that controlled the local joint ventures in Beijing, Shanghai, and Guangzhou, DCI also collected information on local markets, prepared strategies for business ties, had research functions, and unified the company's sales functions. Air Conditioning Headquarters was inside SDAC, and a branch company was established inside Daikin in Guangzhou. The person assigned to the manager of the Guangzhou Branch was Fang Yuan of Daikin Investment Co. in Beijing. A native Chinese being appointed to head a foreign company was an exceptional promotion at the time, highly welcomed in Chinese business circles. Daikin was moving aggressively in China to assign even high-level managerial duties to local personnel. The company adopted a policy of having local employees deeply appreciate its management principles, and have them reflect those principles in their everyday duties. The Chinese employees warmly welcomed Daikin's corporate stance, an attitude that contributed much toward strengthening in-house morale.

In 2002, Daikin established a new strategy for its operations in China, and began a forceful expansion of its diverse business

divisions there. Besides increasing sales in the air conditioning division, Daikin also expanded its chemical business by building a new plant. It also began moving aggressively to develop its oil hydraulics business. In effect, all the company's business divisions moved forward in a comprehensive expansion strategy. To support that strategy, Daikin established air conditioning service companies and the Suzhou Chemical Plant one after the other. At the time, China was realizing high-level economic growth of about 10-20 percent/year, and redevelopment projects were being carried out simultaneously in about 40 Chinese cities with populations of five million persons or more, an unprecedented construction boom. In response to rapidly expanding needs, Daikin established two new companies in 2003 in China: Daikin Airconditioning Systems (Shanghai) Co., Ltd., (DASS; capitalized at \$18.7 million) for producing commercial-use packaged air conditioners, "VRV" systems, and medium- and large-size room air conditioners; and Daikin Central Airconditioning (Shanghai) Co., Ltd. (DCAS; capitalized at \$18.4 million) for producing fan coil units and water- and air-cooled chillers. Both companies were located within the precincts of SDAC, and both began production activities from July 2004. In November 2003, meanwhile, Daikin established Daikin Device (Suzhou) Co., Ltd., (DDS; capitalized at 2,320 million yen) inside the Suzhou Industrial Zone to manufacture compressors for use in room air conditioners, packaged air conditioners, and chillers. DDS began operations from September 2004. Also in September 2004, Daikin established Daikin Motor (Suzhou) Co., Ltd. (DMS; capitalized at \$20.8 million) to manufacture motors; production began there in December 2004. Matsushita participated in DDS with 40 percent equity. Daikin and Matsushita combined their technology in this venture and began manufacturing motors for compressors.



*Daikin Device (Suzhou), (top)
Chairman Inoue and
Sr. Executive Advisor
Yamada Tour Plant at
Opening(right)*

For its air conditioning business, for fiscal year 2005 Daikin set a domestic sales goal in China of 80 billion yen and an export goal of 20 billion yen. Those were enterprising goals, equal to a three-fold total increase in three years from actual sales of 34.6 billion yen in 2002. Daikin bolstered its sales system in China through the consolidation and unification of operations, and set high sales goals of 170 percent for the second half of 2003 versus the previous year and 160 percent versus the previous year for 2004. Daikin also brought into China outstanding Japanese sales managers to train local managers and to provide hands-on guidance to Chinese sales managers at the front line of sales. In turn, those Chinese sales managers trained large numbers of newly hired local sales personnel, half of whom were sales engineers. By conducting comprehensive Daikin-style onsite sales training, project sales were strengthened, including holding technical sem-

inars for key persons in promising markets such as architectural offices, schools, and hospitals. Sales engineers responded to individual customer needs by proposing the air conditioning system most fitting for each situation. Daikin sales methods practiced by Chinese sales personnel bolstered the sales activities of retailers selling only Daikin's a/c equipment. In 2003, the Chinese government approved Daikin's application for establishing wholly owned service companies—the first such companies in the air conditioning industry in China—in north, east, and south China. Besides transferring Japanese know-how to those service companies it also became possible through them to move all-out in developing the solutions business.

Daikin moved forcefully in promoting the localization of its air conditioning business in China. It did so not only by increasing the number of production bases but also by simultaneously promoting the localization of product and technology development. Around that same time, as Daikin was building new production bases in China, roughly one hundred air conditioner models were transferred from Japan and produced in China. Including new models developed in China, they manufactured 300 different models in 2003. In 2004, the number of models transferred from Japan was about equal to the number of new models developed in China. In 2005, however, new models developed in China increased to account for 60 percent of the total number of models manufactured. In October 2003, meanwhile, as part of its moves to accelerate technological developments in the air conditioning field, Daikin established the Tsinghua-Daikin R&D Center inside Tsinghua University in Beijing, the company's first overseas R&D center. The University boasted of the world's top level of R&D capabilities in the air conditioning and energy fields, and Daikin aimed to fuse those capabilities with its own ability to

commercialize technology. The company held great expectations for the university to serve as a base, helping establish the lead in the air conditioning culture in China related to research for improving energy performance and responding to next-generation energy requirements.

Daikin announced comprehensive business ties with Matsushita in 1999, and specific results from that relationship began appearing from 2000. In China, the two companies built a system of cooperation and specialization. SDAC produced and sold packaged air conditioners while Matsushita Guangzhou produced and sold room air conditioners. From 2001, the two companies agreed to supply the resultant products to each other with their own brands and sell them through their own sales routes. The moderate results of the partnership consequently gave rise in 2003 to Daikin in Thailand and Matsushita in Malaysia also entering into a partnership, likewise based on mutual cooperation and specialization. Matsushita Malaysia also supplied Daikin Europe (DENV) with room air conditioners. In order to strengthen its position in the cost-competitiveness of large-scale a/c units, Daikin established Daikin Central Airconditioning (Shanghai) Co., Ltd. (DCAS), and halted production of those units in Japan, realizing a start to its full-scale transfer of the packaged air conditioning business to China.

Daikin rapidly expanded its air conditioning business in China. As of 2005, it had five production bases, 29 sales outlets, three service bases, one R&D site, and 6,000 employees. Including service-related income, total sales in 2005 were 74.4 billion yen, an 11 percent share of the overall air conditioning market. Air conditioners for commercial use were the main market for Daikin's products, reaching a 37 percent market share in the high-end zone with products such as cassette-type conditioners, "VRVs", and



*Chairman Inoue tours
Solution Plaza Shanghai*

others. Total sales in the entire domestic Chinese market in 2005 were 52 billion yen and Daikin stood out as the top company among the foreign air conditioning manufacturers. If the domestic Chinese manufacturers Midea, Gree and Haier are included, Daikin ranked fourth in the overall Chinese air conditioning industry. Operating profit on sales of the top three local manufacturers, however, were low at 2-4 percent. Daikin's ratio was 19 percent, far higher than U.S. companies, such as Carrier, McQuay, and others.

The year 2005 marked the tenth anniversary of the founding of SDAC and in early May Daikin held ceremonies to celebrate ten years of business operations in China. One link in the celebrations was the opening of Solution Plaza Shanghai in the shopping district along Huaihai Road. It was the first large permanent showroom of air conditioning equipment that Daikin established in China, with 1,800 m² of floor space. The Daikin China Group displayed all its air conditioning equipment there, and opened a special area for visitors to experience what an advanced air conditioning system feels like.

Daikin also tackled all-out social contribution activities in China, and in the area of social welfare it began employing physically challenged persons. For education and fresh ideas related to



Jiangsu Plant of Daikin Fluorochemicals (China)

air conditioning technology, Daikin established the "Daikin Future Air Conditioning Prize." Related to the environment, Daikin announced that it would participate actively toward establishing environmental and energy conservation standards.

Aiming for World No. 2 Position in Fluorochemicals

Since China was achieving noteworthy industrial development in the early 2000s, it was expected that its fluorochemicals market would expand substantially in the near future. Because China produced fluorine, a basic material for the fluorochemical industry, Daikin's Chemicals Division viewed China as a strongly competitive location for establishing a global base for producing PTFE. In that context, in April 2001 Daikin established Daikin Fluorochemicals (China) Co., Ltd., (DFC) outside Shanghai in Changshu, Jiangsu Province. Initially, the new company was discussed as a joint venture with China Chemicals Engineering Corporation but after the Chinese government changed its policy regarding such joint ventures Daikin decided to establish a wholly owned subsidiary. That same September, DFC completed construction of

the Changshu Plant inside the Advanced Materials Industrial Park. Prior to the start of operations there, Daikin developed the market using imports from Japan. Because foreign-related users and some Chinese users preferred high-quality products, and because motor vehicle manufacturers, semiconductor manufacturers, companies in IT-related industries, and companies in other advanced technology industries had expanded their businesses quickly, the timing was favorable and demand began increasing steadily.

The Changshu Plant began operations with 250 employees. While the global market remained stagnant, the Chinese market saw an expanded demand for fluororesins. With that favorable background, as early as 2002 Daikin adjusted its business plans in China upward. Worded differently, Daikin came to view China as its third most important production base, after Japan and the U.S., and the company moved to strengthen its international competitiveness there. Besides aggressively introducing new technology and new products, Daikin upgraded its capacity for producing PTFE. The company also decided it needed a new global strategy. With the second investment in the Changshu Plant, DFC expanded the plan, constructed a new plant and began operations there in November 2003. Afterward, DFC moved to improve its production capacity and in September 2005 the plant reached full-capacity operations. In parallel with those moves, Daikin expanded its business of developing new refrigerants for air conditioners, increased sales to fluororesin processing companies, and expanded the business for exterior coatings of buildings. Overall, the company energetically developed its sales activities. In September 2004, Daikin also established the joint venture Ningbo Dongfang Daikin Scientific and Technical Communications Company with a local electric wire manufacturer. Also, in order to promote in a

single leap the expanded use of FEP-LAN cabling, Daikin began lobbying efforts with the government and pushed toward promoting legal regulations and expanding the company's business.

In the U.S., meanwhile, after the burst of the IT bubble in the early 2000s, the business environment suddenly turned tough for the fluororesin industry and Daikin America Inc. (DAI) came to face a new task. In order to move away from that environment, it was necessary to transform into a business that would create markets. For that purpose, in June 2000 DAI established the Daikin Institute of Advanced Chemical Technology (DAI-ACT) in New York. Daikin's principle aim in establishing that research center was to become number one in the world in developing uses for its technology. Daikin provided researchers in universities and research institutions engaged in advanced research in fluorochemicals with fluorine materials, evaluation technology, and financial support. In return, the researchers provided feedback to Daikin. DAI-ACT was a virtual research center with no research facilities of its own. It developed by working with actual research institutions, and in the process built an outsourcing network.

DAI aimed to establish itself as number two in the U.S. market after DuPont, and exerted great efforts to create markets and expand its market share. That included developing the market for EFEP, a unique Daikin product, and fluorine rubber, and expanding its share of the foaming agent market. In September 2004, Daikin bought out Cri-Tech Technologies, the largest compounder of fluorine rubber in the U.S., making it possible for Daikin to produce fluorine silicon alloy rubber compound at Cri-Tech Daikin was then jointly developing FESiV with Dow Corning Corporation. In the fluorine rubber field, Daikin set a target of moving ahead of DuPont and becoming number two in market share, behind only Dyneon. In response to environmental regulations,

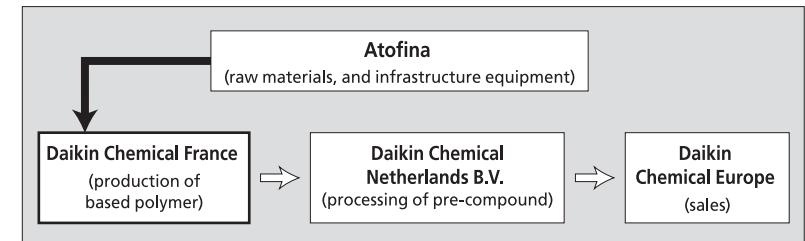


Daikin Chemical France (DCF)

meanwhile, Daikin expanded its sales of fluorine rubber to the companies producing motor vehicle fuel piping, those producing EFEP used in underground piping at gasoline stands, and for use in bug filters. The company moved steadily forward with a strategy that aimed for number two position in the fluorine chemicals industry, behind only DuPont.

In June 2001, Daikin established Daikin Chemical France (DCF) in the outskirts of Lyon, and immediately began preparing for production operations by searching for a site on which to build a fluorochemical plant. Around that time, however, there was an explosion at a chemical plant in Toulouse scheduled to supply DCF with raw materials and equipment for its new plant. Atofina, the chemicals unit of the world's fourth largest oil group, owned that company, and DCF was moving forward with construction of a plant next to it. DCF altered its plans and decided to locate its new plant further away from the Atofina subsidiary company. Operations did not begin at DCF's plant until January 2004, over a year later than originally scheduled. DCF was Daikin's first all-out chemical production facility in Europe and it shipped all its output to Daikin Chemical Netherlands (DCN) B.V. DCN put into order a system that enabled local production of pre-compound processing of fluoroelastomers to meet a wide range of demand in Europe, such as for use in automobile parts and pipe sealing com-

Production and Sales Systems of European Chemicals Business



pound for the semiconductor and chemical industries. Through DCF and DCN, Daikin was capable of responding to local production for covering increased demand in the future.

Semiconductor production in Taiwan, meanwhile, was expanding rapidly. In the context of that expansion, in December 1999 Daikin and Taiwan Plastics Co., Ltd., established the joint venture Formosa Daikin Advanced Chemicals Co., Ltd. (FDAC). From September 2001, FDAC began producing high-purity etchant for use in the semiconductor industry. A month earlier, in August 2001, Daikin established the sales company Taiwan Daikin Advanced Chemicals, Inc. (TDAC). FDAC and TDAC then provided a strong foundation for expanding Daikin's business in Taiwan.

Although Daikin's Chemicals Division steadily established global production and sales bases, the burst of the IT bubble in the world's two most advanced markets—the U.S. and Japan—presented the Division, which had expanded its business considerably based on sales of FEP-LAN and other products aimed at the IT industry, with the new task of responding to sluggish demand. Sales in the Chemicals Division decreased from 96.2 billion yen in 2000 to 81.7 billion yen in 2001, forcing the Division to face a difficult business environment. In order to recover from that situation, from the end of February 2002 the Chemicals Division concentrated on matters related to the Daikin Technology Statement and cre-

ated a new direction in which to head. It pulled its ideas together in May 2003 in a Plan for Reform of the Chemicals Division's Fundamental Structure. The first measure mentioned in the plan was a "Declaration of a Safety Emergency Situation," in the background of a series of serious accidents occurring at Daikin chemical plants at the time. Second, as a reform in the Division's operations, emphasis was placed on making certain the policies of the Division were commonly shared with Daikin's chemical business operations in the U.S., Europe, and China, and that the vectors for operating those businesses were completely in tune with each other. In that context, the Division built a system of responsibility for promoting autonomous decisions by the overseas bases, and established an Overseas Planning Department for assuring a bi-directional exchange of information. The Division also decided to hold a Global Meeting of Top Managers and a Global Conference as venues for discussing global business issues. Third, in order for the Chemicals Division to move forward in specific ways in line with the Daikin Statement of Technology, the company established reform themes in technology, including reforms in the way of moving forward with the development of applications, establishment of basic technology and new technology for developing products for differentiating Daikin from its competitors, clarification of responsibility in the research division, further progress in the stable operation of manufacturing processes; and comprehensive cost cutting. DAI was not the only internal business entity that Daikin was asking to change its business structure into one for creating markets. The same held true for the Chemicals Division itself.

Even as the Chemicals Division introduced reforms into its operations, a series of accidents occurred at the Yodogawa Plant in Japan between 2001 and 2003. In July 2002 and March 2003, in par-

ticular, employees of partner companies died in tragic accidents. In other accidents, gas leakages and a release of resin powder into the air forced local residents to remain indoors on one occasion and to vacate their area on another. Those accidents were not viewed merely as safety management failures but as issues related to the structure of Daikin's chemical business. In that situation, the Declaration of a Safety Emergency Situation signaled Daikin's introduction of basic countermeasures for improving the structure of the Chemicals Division. The company emphasized two main points. First was to correct the thinking and the actions of all employees from the two standpoints of "dislike of accidents" and "dislike of decisions that tie to unsafe behavior." Second was to establish clear rules and follow them closely based on a reflection of past accidents. The company also aimed to establish safe operations by starting with quickly achievable goals. As an overall corporate response, moreover, Daikin established a Zero Accident Promotion Department, and appointed Senior Executive Advisor Yasushi Yamada to head a special committee in charge of safety, thus strongly promoting a system for ensuring workplace safety. About six months later, in January 2004, an explosion occurred in the Kashima Plant's tetrafluoroethylene manufacturing process. No one was injured, fortunately, and the accident resulted in a renewed awareness in the Kashima Plant, and the Yodogawa Plant, of a need to move all-out in bolstering and firmly following in-house safety countermeasures. Daikin assigned directors to the frontlines of operations to ensure that management decisions related to safety—and a strengthening of their execution and supervision functions—reflected the situation at the workplace level. Also, the company moved to improve the structure that caused the accident, and conducted comprehensive safety inspections of all equipment and facilities.

After the introduction of restrictions on fluorocarbons, a great disparity emerged among fluorine manufacturers in global markets depending on their technical development capabilities. Fluorochemical companies either reorganized themselves globally or reorganized their businesses. Daikin's Chemicals Division led the world technically in developing new refrigerants, and the restrictions on fluorocarbon presented the Division with the opportunity to increase its share of the refrigerant business. The Division also had a chance to establish a dominant position in the global market for fluororesins. In order to make the most of those opportunities, however, it was necessary for the Division to strengthen its product and application development capabilities. For responding to the company's expectations, the Division established a global production system and while feeling its way gradually introduced reforms in its business structure.

Business Results and New Developments in Diversification

Daikin's domestic oil machinery business shrank by about two-thirds because of the burst of the economic bubble. In addition, efficient and easy-to-manage electric servo motors were developed, resulting in lower prices and causing the market for small power shovels and garbage collection vehicles to be taken over by electrically powered machines. As a result, in 1996, in order to rebuild its business foundation, the Oil Hydraulics Division tackled a set of basic reforms. First of all, the Division was divided into the industrial machinery and construction machinery businesses. Each business then began developing strategies for energizing itself, including searching for alliances. From fiscal 1995 to fiscal 2000, however, combined sales for the oil hydraulics and defense systems businesses were less than 40 billion yen, and profits were quite low. In both fiscal 1996 and 2000, in fact, their business re-

sults were in the red.

In order to recover from the long period of business sluggishness, in 1999 the Oil Hydraulics Division created a task force for determining the direction in which to rebuild itself. The task force formulated four key points: (1) to aim for the top share of the domestic industrial machinery and hydraulic transmission markets; (2) to move all out in entering Asian markets; (3) to improve the Division's competitiveness and profitability in order to remain a major player in the parts industry; and (4) to promote strategic ties. The Division confirmed its reconstruction strategies clearly in the Fusion 05 Strategic Management Plan.

The efforts toward reconstruction of the oil machinery business finally bore fruit in 2000. In that same year, the Division reached a joint venture agreement with the construction machinery manufacturer Sauer-Danfoss Inc. (today's Danfoss Power Solutions), and in the industrial machinery business the Division developed and marketed a hybrid hydraulic pump called "Eco-Rich". As a new business, meanwhile, the Division successfully entered the parking system business.

Sauer-Danfoss was the world's top construction machinery manufacturer at the time, with global sales over 20 times greater than those of Daikin. The two companies had technical ties in the transmission field stretching back over 30 years, and enjoyed a relationship of strong mutual trust. They established two joint ventures in October 2001: Daikin Sauer-Danfoss Manufacturing Ltd. (capital 400 million yen; Daikin 55 percent equity) was a manufacturing company; Sauer-Danfoss-Daikin Ltd. (capital 400 million yen; Daikin 35 percent equity) was a sales company. Not only did those ties allow Daikin to take a major step forward in holding the number one share of the Japanese domestic market but they also gave Daikin the chance to acquire IT technical capabilities,



Inverter Hydraulic Pump "EcoRich"

develop an advanced SCM, and acquire expertise in customer-oriented marketing. The ties also enabled Sauer-Danfoss to acquire sales expertise and a customer foundation in Japan and Asia, and provided it the means for establishing a foothold in markets with great future potential. By making the most of the strong points of both companies, the new joint ventures became the leaders in their businesses in Asia.

The Oil Hydraulics Division developed the "EcoRich" hybrid hydraulic pump, equipped with the IPM (Internal Permanent Motor) developed by the Airconditioning Solution Institute for use with the compressor of packaged air conditioners. The Division made use of electric and control technology Daikin had in air conditioning to develop the "EcoRich" as an extremely energy-efficient product that consumed 50 percent less electricity than previous hydraulic equipment. The demand for "EcoRich" as a hydraulic pump for industrial use increased rapidly from its launch in January 2000, and it won a substantial market share. In that backdrop, the Oil Hydraulics Division in 2002 formulated a medium-term reform strategy for the hydraulics business related to industrial machinery, aiming to move from a business that offered simple hydraulic parts to a solutions business for conserving energy.

In the past, the Division targeted the industrial machine manufacturers as customers and now decided to set its sights on end

users as well, and began to develop markets. Based on that policy, Daikin placed "EcoRich" at the center of its systems. It also moved its core technology from hydraulics to motor drive and added equipment for inverter controllers. It started a new business offering packaged products that included an oil pressure pump, a water pressure pump, and a machine drive mechanism such as a decelerator—which users had procured until then by themselves. The hydraulic pump system Super Unit marketed in 2002 achieved substantial energy savings of 60 percent less electricity consumption during operation compared to previous products, making it an innovative product offering high-energy efficiency. For the new technology they used, the "EcoRich" and Super Unit products both won technology development awards from the Japan Fluid Power System Society. Both were game-changing products for conserving energy. "EcoRich" in 2002 and Super Unit in 2003 also won the Technology Development Award of the World Power Systems Society.

Daikin called its new business the Power Motion Control Business, and publicized it energetically among end users. While offering end users energy-saving diagnoses of entire plants, Daikin developed its solutions business by making proposals for overall energy-efficient packages, including air conditioners, air cleaners, and other products from the Air Conditioning Division. Among machine tool manufacturers, meanwhile, Daikin conducted direct sales activities with end-users strongly aware of energy conservation. For the industrial machine market, Daikin developed low-noise, general-use equipment mounted with high-pressure super "EcoRich" pumps. Those pumps became very well known in the market, and Japan's major automobile manufacturers purchased them directly by name.

Daikin entered the parking systems business later than other

companies, but was the first and only company offering hydraulic equipment. Land prices in Japan decreased continuously for ten years after the burst of the bubble economy, and as new condominiums became more affordable people started returning to reside in Tokyo and other urban centers. In addition, a demand increased in Tokyo, Osaka, and other large cities for vertical parking systems. In that context, Daikin entered the vertical parking system business in 1991 and began building a business foundation. Competition was tough, however, and Daikin was forced to reduce the prices of its parking systems. The outlook for further growth worsened, and in 2005 Daikin decided to withdraw from the business.

Daikin established Daikin Hydraulics (Suzhou) Co. Ltd., in 2010, and entered the Chinese market for industrial equipment. It began producing “EcoRich” products and inverter oil hydraulic pump units customized for Chinese customers, and began sales in economically advanced cities such as Beijing, Dalian, Guangzhou, Shanghai, and others.

In the defense business, Daikin moved steadily toward realizing by 2010 its plan to have the private sector account for 50 percent of its overall business. The Defense Division remodeled the former hydraulic factory for the defense-related products, moved aggressively to develop products that put its in-house technology to best use and were destined for consumption by private companies in the domestic market. Through calls for new product ideas, market surveys, and a study of ways to apply existing technology, one of the new products Daikin tackled was a Fiber-Reinforced Plastic (FRP) composite cylinder. It was an ultra-light, high-pressure gas cylinder, strengthened by wrapping glass fiber around an aluminum liner. Although imports controlled the market up to that point, Daikin was able to enter the market by applying tech-

nology it used in metal pressing processes. In 1976, Daikin developed a portable oxygen cylinder called “Lite-TEC” for use by patients suffering from respiratory insufficiency. It entered the business of home oxygen therapy, and began to diversify its product line. In order to apply the same technology to an area other than medical equipment, Daikin developed an FRP composite cylinder for use by firemen as an air cylinder.

In August 2001, Daikin began marketing an ICU apparatus unit called “Dear M10” for use with small animals. This apparatus used high-pressure oxygen, with a temperature/humidity control system, and also fitted with safety functions. It was so compact it was easily attached to the cages used in veterinary hospitals for small animals. It allowed the oxygen concentration in animal cages to be maintained at a maximum of 40 percent. The heating and cooling equipment operated quietly, using the electronic cooling technology of Daikin’s Airconditioning Research Center. That technology prevented a loss of oxygen and sudden temperature increases by opening windows automatically in emergencies or unusual power outages. As an aside, Japan experienced a pet boom from then until now, and owners paid for advanced medical attention from veterinarians for their pets. From that viewpoint, Daikin expected an increase in the demand for such an apparatus.

Daikin established its Electronic Division in 1996 by reorganizing its Electronic Equipment Department. The company had positioned the former department as a Strategic Business Unit (SBU) and had tackled its business aggressively. Among its main businesses was “Interact,” a Graphics Control System for factory automation based on technology developed by Control Technology Corporation (CTC) of the U.S. Daikin imported the Interact software into Japan from CTC in 1994. The software was expensive,

however, because it required a network connection, unlike the previous type that only used a touch panel. It caused numerous technical problems as well and could not compete with the previous model's improved performance. In the context of the product causing so many problems, Daikin quit that business in 1997.

The DVD production system "Scenarist" that Daikin developed in 1994 was the most advanced system of its time, and at one point it had a 90 percent share of the domestic market. Technology development was so rapid, however, that Daikin could not keep pace and in 1998 it had to withdraw from that market in Japan. Two years later, in 2000, it also withdrew from the same market in the U.S.

Afterward, Daikin redesigned its software business in the domestic market into a solutions business that responded more closely to the needs of the times. By 2003, the new business became active in seven areas, including visual R&D support solutions, digital virtual broadcasting solutions, and unified environment solutions for media policies. In particular, an improved version of the R&D support software "Space Finder" marketed in 2011 became popular, and as of this writing the number of users is still increasing. Sales of the "Fielder Rise" software for equipment CAD increased steadily, meanwhile, as Daikin's air conditioning sales companies won sales support from design offices and building contractors. Even as Daikin itself continued to improve the product's quality, the company's service engineers also made increasingly favorable suggestions related to improving quality further, also promoting sales. Even after 2012 the company continued to maintain increased profits.

Corporate Ethics and Environmental Response

Daikin grew and developed as an excellent global corporation

with a strong technological backbone. At the same time, as a company trusted in global markets, Daikin established a strict in-house code of ethical standards, adopted an aggressive external stance in considering the natural environment, promoted social contributions, and conducted its activities with a strong awareness of its corporate social responsibility. While competing in business, Daikin quickly grew to become an excellent company. At the same time, it expended great efforts to establish a strong foundation of corporate ethics. The social background, the strict way that Daikin views its corporate social responsibility, accounts in part for the company being able to conduct its corporate activities speedily.

In the spring of 2003, Daikin established a task force for reviewing its code of ethics. The task force began studying how to establish a "perfect" code of ethics for strict adherence to laws and regulations and total prevention of problematic incidents. Right around the turn of the century, several unethical incidents occurred in succession in large corporations in Japan and the U.S., and the entire matter of corporate social responsibility came into question. In response to public criticism, many corporations reviewed their stance toward social responsibility, and moved to establish internal systems to assure full compliance. In the midst of that social trend, Daikin decided to renew its code of ethics and make certain internally that it was following the code closely. The company made the efforts needed to verify its internal systems and to improve the knowledge and awareness of all employees toward compliance. In June 2003, Daikin established a Corporate Ethics Committee and a Corporate Ethics Department. COO Kitai assumed the position of officer in charge of corporate ethics and the company prepared a list of related laws and regulations; put into order internal regulations and related manuals; and added to

or reviewed those already available. Daikin also prepared a corporate ethics handbook for group companies to use for having their employees practice all-out compliance. The company also established a consultation service at its head office to provide specific advice to employees. In addition, compliance leaders were appointed in the head office, the plants, and in the eight main overseas companies. While promoting the activities directed by the head office, the leaders moved to share information about the unit they represented. As the leaders occasionally handled emergency responses, they confirmed that the code of ethics was being practiced throughout the organization.

Concerning environmental issues, starting in 1998 Daikin began publishing Environmental Report (today's CSR Report) annually to publicly reveal its environmental stance. In 1999, the company announced environmental accounting, and held a group environmental conference in Osaka around the same time as part of efforts to have the company's environmental management principles shared widely throughout the company. In fiscal 2000, based on calculations from guidelines the Ministry of the Environment established, environmental preservation activities cost Daikin a total of 6.7 billion yen. That level of expenditures allowed the company to comply with legal controls, such as environmental standards, and allowed the company's main products to reach levels of energy conservation well above government standards. The company completed its switch to new refrigerants having no adverse effect on the earth's ozone layer. In 2002, in order to promote environmental management still further, Daikin set environmental standards for the Daikin Group in basic policies contained in a report titled "Taking the Environmental Lead in Society," thereby widely promoting environmental standards throughout the group companies. In the following year, Daikin unveiled Environ-



Environmental Reports

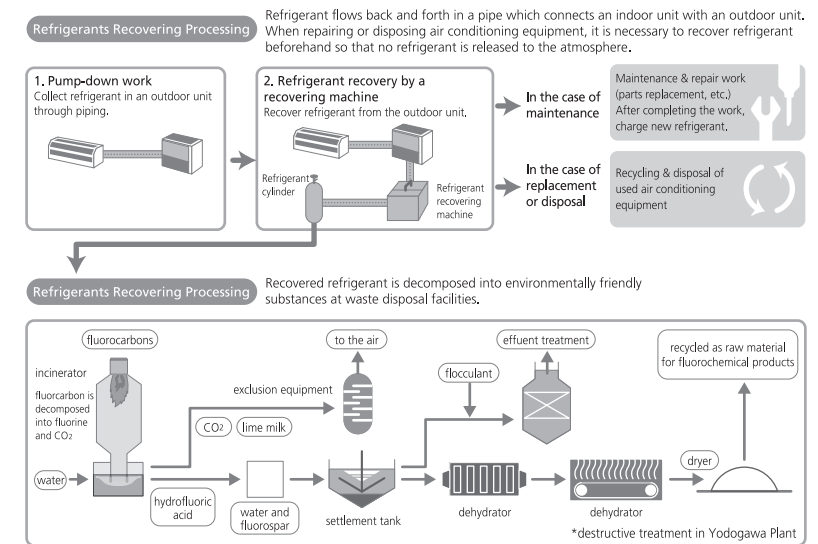
mental Action Plan 2005, a plan for strengthening the company's environmental management on a global scale. During the same year, all the domestic offices of the companies in the Daikin Group obtained consolidated ISO 14001 certification. In order to expand use of the environmental management system to parts and materials suppliers, the company officially decided in 2004 to require its suppliers to obtain ISO 14001 certification, a strengthening of the program of "green" procurements it initiated in 2000. During the same period, the company moved vigorously in disclosing environment-related information in its annual Environmental Report, bolstering its environmental communication and showing its affiliates in Japan and overseas its managerial stance of achieving the greatest positive environmental effects for the least capital expanded.

As a company producing fluorocarbons, Daikin was among the first companies to tackle environment-related problems seriously. It succeeded in the volume-production of the new refrigerant HFC32 in March 1997 as the world's first such refrigerant. It followed that with volume production of HFC125 starting in March 2001, making the company a pioneer in the mass produc-

tion and wide dissemination of new refrigerants with a zero negative effect on the earth's ozone layer. With completion of a plant for mass producing HFC32 in 1999, Daikin began calling itself an advanced company in terms of the global environment, and it produced and introduced an action plan based on four main points: 1. the development of low-impact products for the global environment, including energy-conscious air conditioning equipment, and the total recovery of refrigerants; 2. all-out management of the environment, including reduction of the volume of energy used in production activities, and management of chemical substances; 3. creation at the industry level of a social system tied to the recovery and disposal of refrigerants; and 4. the active disclosure of information such as publishing environmental reports. Next, in 2002, the main Daikin air conditioners made and sold in Japan and the countries of Europe were completely switched to using HFCs. In terms of air conditioners used in homes, meanwhile, it was said at the time that room air conditioners consumed 25 percent of the total electric power used in Japanese homes, and Daikin had already expended great efforts to develop and expand the use of energy-efficient room air conditioners. The summer of 2003 in Japan was extremely hot and Japanese consumers came to show greater interest in more expensive energy-efficient air conditioners. Sales of those models steadily increased and in 2004 came to account for 84 percent of total air conditioner sales.

As another direct response to environmental issues, Daikin began promoting the business of recovering refrigerants. The company put into place a nation-wide system during 2002 in which Daikin Contact Centers remained open 24 hours/day all year round to receive requests for recovering air conditioner refrigerants, regardless of the equipment's manufacturer or model. After a Contact Center received a request it contacted the Daikin

Refrigerants Recovery Business



Service Division and a refrigerant recovery team proceeded to the caller's premises to recover the refrigerant. Refrigerant manufacturers were not legally responsible for recovering and disposing of used or unneeded refrigerants but Daikin, as the leading manufacturer of refrigerants, felt a responsibility to do so. Today it has 14 facilities throughout Japan, including the Kashima and Yodogawa plants, and cooperative business partners, for destroying or otherwise disposing of refrigerants. In 2005, moreover, Daikin also began putting into order a refrigerant recovery system in Europe, in response to new Waste Electrical and Electronic Equipment (WEEE) regulations.

In the recycling of industrial waste, the Machinery and Chemicals divisions began tackling zero emissions from 2000. The Machinery Division aimed to achieve that goal by 2003; the Chemicals Division aimed to achieve it by 2010. The definition of "zero emissions" is for a company to reuse or incinerate 99 percent

or more of the unneeded materials generated in its plants. The Machinery Division achieved zero emissions in September 2001 at the Sakai and Shiga plants where its equipment is produced, in January 2002 at all its factories, and in 2004 at all subsidiaries handling machinery. In 2004, the Chemicals Division achieved zero emissions at all its plants. The volume of emissions decreased dramatically during this period, from 2,745 tons to 43 tons. Of the emissions generated, 99 percent was recycled for further use. Overseas, meanwhile, a great disparity emerged between countries concerning recycling systems. In particular, many countries have not established systems for recycling sludge generated at chemical plants for use in construction materials. Despite the efforts made by Daikin's overseas offices to achieve zero emissions, therefore, the recycle rate for 2004 was just slightly over 50 percent. Since the volume of waste increases in proportion to the rapid increase in overseas production, the introduction of measures for recycling waste became an urgent task.

Daikin's positive approach to global environmental issues has won the company high praise both in Japan and overseas. In January 2002, it won the Japan Industrial Journal's Eleventh Global Environment Award, the most prestigious environment-related award in Japan, first presented in 1991. Next, in March 2002, Daikin won the EPA Stratospheric Ozone Protection Award for 2002 presented by the U.S. Environmental Protection Agency. Originally established in 1990, the award is presented to companies that take innovative action and demonstrate exceptional leadership and originality in protecting the ozone layer. The EPA presents the awards to individuals and organizations in 29 countries for 420 or more activities. All the awards reflect a positive evaluation of social systems being built for protecting the environment, such as Japan's first volume production of HFCs, promoting the use of

air conditioners using HFCs, and the recycling of refrigerants.

As globalization and the increasing use of IT progressed, Daikin's sales and production bases rapidly globalized and came to face harsh competition in the areas of sales and the development of technology. Daikin thus took steps to strengthen its R&D system, and patents covering differentiation technology became important company assets. An important matter that emerged was the more effective use of patents. One result was the theme included in Fusion 05: "Thoroughly promote patent strategies to win out in the era of competition through the control of intellectual property." Under that theme, Daikin emphasized the need to move aggressively in protecting its intellectual assets by quickly increasing and bolstering its effective patents, introducing measures to counter the copying of Daikin products in China, and taking steps to reduce risk related to patent infringements. "Effective" patents referred to key patents for strengthening Daikin's competitiveness, such as patents on products that discriminated from others or created markets. In situations of extremely harsh competition, rival companies cannot be allowed to catch up. Also, royalty income from licensing patents can contribute considerably to business performance, making the strengthening of patent-related matters a top priority item.

Daikin had to strengthen its R&D capabilities in order to increase and bolster the number of its effective patents. It thus introduced a system in January 2003 that rewarded employees who discovered patentable advanced technology. In Japan, there was wide newspaper coverage surrounding the lawsuit over compensation paid to an employee for turning over patent rights to the company for a blue-light emitting diode. Consequently, there was a growth in companies that abolished limits on in-house compensation paid for obtaining patents. Daikin framed a new

system for key patents that contributed considerably to sales and compensated their inventors well. Patent value was measured in terms of their contribution to business performance within a year after acquisition and once confirmed, patents with high-performance were either given an early stage bonus or fundamental compensation. No other company had such a unique and generous system.

As seen thus far, Daikin respected “the willingness to work” of its employees, and in order to expand the re-employment of workers who reached retirement age it introduced a system that offered a variety of employment formats. The company also made efforts to create environments in which women could feel comfortable on the job. In 2001, the company discontinued the job classifications “all-around workers” and “general workers,” and moved aggressively to employ women, to expand the range of work available to them, and to open the way for hiring women in managerial positions. From the summer of 2003, Daikin also moved quickly to establish a system for allowing maternity leave, thus enabling female workers to work and raise their children at the same time. As a result, in fiscal 2004 the number of female senior managers increased to eight, and female workers with children came to account for 31 percent of all female employees. The percentage of women in the overall Daikin organization was 8.6 percent, slightly higher than the average for all Japanese companies.

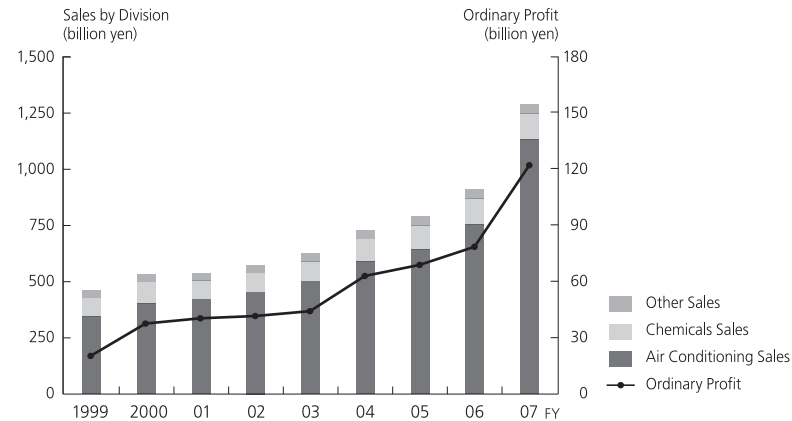
Daikin stands out among Japanese companies for its positive results concerning the employment of disabled persons. Daikin Sunrise Settsu, Ltd., a company Daikin co-established in 1993, participated in the National Exhibition for Promoting the Employment of Disabled Persons held in 2004, and introduced the activities of its disabled employees. Daikin’s approach of “Making people the axis of management” garnered attention from Japanese

companies moving at the time to recover from the generally poor business situation through restructuring. In a special issue, the influential weekly magazine *Nikkei Business* introduced Daikin’s approach to utilizing disabled employees in an article titled “Daikin Industries: Management with Surprising Use of Human Resources.” Daikin succeeded in establishing a personnel system in which each member is determined and enthusiastic.

Daikin also provided support for culture and the arts, and in 1995 established the Daikin Foundation for the Promotion of Modern Art. The company donated 100 million yen to the Foundation in 2004 to commemorate the company’s 80th anniversary, thus allowing the Foundation to conduct wider activities related to art museums. Daikin also supported sports activities, such as the annual women’s professional golf tournament, the “Daikin Orchid” Ladies Golf Tournament, held on Okinawa and which still serves today as the start of the golf season in Japan. Partly because of that tournament, female golfers from Okinawa became more active in professional golf. In those and other ways, Daikin’s support has contributed much toward promoting Okinawa’s industry and economy.

Daikin’s business performance during the ten years after President Inoue assumed office, between fiscal 1994 and fiscal 2004, showed increased revenues and increased profits every year. Consolidated sales for 2004 were 729 billion yen, drawing closer to the goal of becoming a trillion yen company, a main numerical index for Japan’s largest companies. One of the conditions that made that growth possible was the rapid expansion of the company’s overseas business, from 32 percent of total business in 2000 to 45 percent in 2004. Of the 92 companies included in the company’s consolidated financial report, 45 are overseas subsidiaries. Daikin has 92 overseas business bases, and 9,800 of its 19,000 employees

Daikin's Sales by Division, and Ordinary Profits



are overseas employees, thus accounting for over half of the total number.

Viewed by division, the growth and expansion of the air conditioning business has been noteworthy. For many years Daikin maintained the largest share in the commercial-use air conditioner market in Japan, and in 2003 it also became the market leader in room air conditioners. Daikin's major products in the air conditioning business overseas are commercial-use air conditioners. The company succeeded in developing strong international competitiveness in that area and grew rapidly. The company is also highly evaluated for its environmental consciousness and energy saving performance.

The Chemicals Business, meanwhile, was suffering from a sluggish business performance in Japan and in the U.S., but total sales, which decreased following the burst of the worldwide IT bubble in 2001, gradually recovered until in 2004 they surpassed total sales in 2000. Meanwhile, although Daikin's non-consolidated ordinary profits in fiscal 2003 decreased slightly, consolidated ordinary profits increased considerably from 40 billion yen in fis-

cal 2000 to 63.5 billion yen in fiscal 2004. As a result, overall business results showed increased income and increased profits even on a non-consolidated basis.

Daikin began emphasizing "management by ratio" from 1999. In 2004, its ROA was 6.7 percent and its ROE was 15.2 percent, showing that the company was gradually building a highly capital efficient business structure. Daikin's current aggregate value is 712 billion yen, and the series of reforms it introduced over the 11 years since 1994 changed its overall structure. Its growth structure is proof that it also succeeded in becoming an excellent company in terms of management quality. As its next goal, Daikin has begun taking the steps needed toward becoming an excellent world-class company.