

Chapter 7

Arrival of Network Society,
and Global Competition
(1993-1998)

1. *Efforts toward Corporate Restructuring*

President Jun Jinguji assumes office, and new management policy

By early 1992, it was clear that the bubble economy had collapsed. Although Japan's economic growth in the fiscal year ending in March 1993 had grown 0.4 percent, during the next three years, through to March 1995, the economy experienced zero growth in real terms. This marked the start of the "Heisei recession." Oki Electric's financial results for the interim period ended September 30, 1992, recorded a huge operating loss of 19.3 billion yen, forcing the company to halt dividend payments for the first time in 14 years.

The Electronic Devices Division, hit directly by a slump in demand for memory, recorded a substantial loss in the interim financial results. Sales of information processing systems to financial institutions also floundered, negatively affecting the Information Systems Division. In the backdrop of the decline in revenue and profit, the fixed cost from large capital investments, mainly in semiconductors, became a heavy burden. The deficit from net interest expenses also increased, while the latent loss from declining stock prices exceeded 10 billion yen.

Amidst a worsening of the business slump caused by the bubble economy's collapse, the board of directors of Oki Electric voted on October 30, 1992, to have President Kosugi become chairman and Senior Managing Director Jun Jinguji become president. At the same time, Chairman Hashimoto was appointed senior advisor. A new management structure thus began, with President Jinguji and Senior Managing Director Shiko Sawamura both holding representation rights.

With Oki Electric facing its most difficult situation since the economic crisis of 1978, President Jinguji turned all his efforts toward restructuring the company. An engineer by profession, President Jinguji joined Oki Electric in 1978, coming over from NTT. Even after joining Oki Electric he remained involved in technical areas. As presi-



Jun Jinguji

dent, his most pressing challenge was to continue promoting the Restructure 1992 plan he inherited from former President Kosugi.

Restructure 1992 contained four specific measures: the first was to review each business domain from the viewpoint of profitability and to formulate separate action plans for them; the second was to reduce fixed costs, such as those for personnel and depreciation expenses; the third was to bolster the company's sales capabilities by shifting from a market-response type of sales organization to one that integrated sales and technology in order to make sales more efficient; and the fourth was to review the efficiency of the production plants and sales offices.

A new management plan was prepared between late 1992 and March 1993. Introduced in April, it comprised short-term management reform measures to replace Restructure 1992, plus a business-restructuring plan containing medium-term strategic goals.

Three of the main reform measures were as follows. First was reorganization of the production departments, including moving the operations of the Tokyo Plant, an aging facility whose production efficiency was decreasing, to the Numazu Plant, and canceling the start of construction work on a plant in Shimizu. The relocation of production from the Takasaki Plant to the Tomioka Plant would be carried out as planned, and a section of the Hachioji Plant would be closed. Second was a reduction in personnel expenses. Restructure 1992 had aimed at reducing the workforce by 2,000 persons by March 1995, but the new plan pushed that date ahead. Also, a preferential plan for early retirement applicable to employees 50 years old or older was revised to include employees 40 years old or older. The

third measure was to spin off the printer and facsimile department as an independent company. That department had 2,000 employees and sales of 100 billion yen.

President Jinguji's principal aim in this management plan was not merely a short-term business restructuring. He wanted to introduce new management guidelines, a point he clarified in an interview in early 1993. He said he wanted to change the way the company developed products, moving away from development based on the receipt of orders from customers to innovative development focused on offering product solutions. Years later, under presidents Sawamura and Shinozuka, changes in the company's management practices would become more thoroughgoing, but it was around this time that the need for change was first realized. Behind that realization was the recognition that Restructure 1992 was not a sufficient response to the serious situation the company faced. President Jinguji explained to the employees that he had a clear vision for the company's future, and he proceeded to define the objectives and guidelines for realizing speedier decision-making and action.

As a guiding philosophy, President Jinguji said Oki Electric would aim to become a leading company in the age of multimedia communications by emphasizing information and communications systems, human interface systems, and the devices that support those systems. Three business objectives included doing everything possible to meet the figures in the budget for the fiscal year starting in April 1993, earning a profit in the following year, and resuming dividend payments in the fiscal year ending in March 1996. In addition, three goals were defined that incorporated the concept of focusing on customer satisfaction: (1) to discuss matters freely and be creative; (2) to take action with the emphasis on speed; and (3) to rotate the Plan-Do-Check-Action (PDCA) cycle precisely.

The business-restructuring plan was comprised of an active strategy that focused on avoiding the decentralization and wasting of resources. In order to win out in the intensely competitive market, the plan clearly defined priority businesses as follows.

1. Information and communications (I/C) systems

Public switching systems business—while keeping in mind the

approaching age of gigabit communications, pay close attention to the increasing sophistication of networks, the diversification, increasing multifunctional nature, and personalization of I/C devices, and develop original products while expanding the business.

High value-added systems integration business—as the trend toward greater openness in business accelerates, focus on client-server systems and multimedia communications systems that respond to computer networking, increase value added through software, support, mechatronics, character recognition, and human interface technology.

2. Human interface systems

Business for differentiated systems—while fully utilizing the company's strongest area, mechatronics technology, such as that used in ATMs for financial institutions, ticket-issuing terminals, and printers, and while responding to multimedia demands, create products readily differentiated from the products of other companies.

3. Device products

Electronic devices business—emphasize the sale of devices important to in-house strategies, and stabilize profits by promoting this business, such as by bolstering product development capabilities with a focus on products aimed at specific customers or markets (product lineups specifying particular markets or customers).

Because it was necessary to review the allocation of resources in order to effectively improve profitability in the above priority businesses, it was made clear that if a particular business was not expected to be profitable within a set period it would be terminated.

With implementation of the business-restructuring plan, the private-sector-oriented Marketing and Sales Division was reorganized in March 1993 to transform it from an organization separated by market into one separated by product. The reorganization was aimed at creating a system for grasping market needs quickly and tying those needs to product development and production. At the same time, steps were taken to reduce the number of organizations at the department level by 20 percent. These steps were intended to simplify the organization, speed-up the decision-making process, and realize a more efficient use of human resources.

Sharp jolt by slump in memory industry

In 1992, the domestic semiconductor market reversed itself from growth to slump, due mainly to a large decrease in demand for PCs of over 10 percent, a main user of memory. An oversupply of 4M DRAMs, the mainstream memory for PCs, brought market prices down by about 50 percent between the spring of 1991 and the fall of 1992. The slump continued even afterward.

The marked decline in memory sales had a major influence on Oki Electric's business. In fact, losses in the semiconductor division were the main reason for the operating loss of 19.3 billion yen posted in the company's financial results for the interim period ending in September 1992. As well, the burden of depreciation expenses from capital investments of nearly 160 billion yen made between April 1988 and March 1992 weighed heavily on the business results. Corporate restructuring, therefore, needed to include a close review of the semiconductor division. In speaking about the company's basic policy toward the memory business, President Jinguji said, "While striking a balance between application specific memory (ASM) and other memory products, the basic emphasis will be on logic ICs."

Even in 1993, the domestic semiconductor market continued to be sluggish. This was partly because companies in the electronics industry were holding down their capital investments during the business recession. In particular, slow sales of home appliances and AV equipment caused sluggish demand in the private sector. Business in the semiconductor market in the U.S., meanwhile, was robust, and shipments of 4M DRAMs were brisk, supported by a strong demand for PCs. The demand for 16M DRAMs also began to increase, bringing about expanded sales of memory products in the semiconductor market; the demand for logic products, however, grew at a slower rate. Right from the start, the percentage of memory sales was always higher than logic sales among Japanese corporations, and the dependence on sales of memory products thus increased.

In Oki Electric's medium-term business plan for electronic devices announced in December 1993, the company introduced measures to bolster its line of application-specific standard memory and

application-specific logic products, and clarified the policy of entering new markets such as multimedia and LSIs used for telecommunications. As a percentage of the sales target for electronic devices set for the fiscal year starting in April 1997, general-purpose memory and logic were expected to account for 30 percent of the total, application-specific standard memory and logic for 50 percent, and custom logic for 20 percent. Also, memory's percentage of total sales for the fiscal year starting in April 1997 was targeted at 55 percent, down from the 63 percent in the fiscal year ending in March 1994. In the backdrop of sluggish growth in the demand for logic, however, the goal of shifting to logic could not be easily achieved.

Changes in telecommunications carrier business

As mentioned, Oki Electric took as a guiding philosophy around this time the aim to become a leading company in the age of multimedia communications. This new business philosophy was contained in President Jinguji's Restructuring 1992 plan and in later business-restructuring plans. It referred to the digitization and convergence of media, such as voice and video, for enabling the transmission of information by telecommunications and computer networks.

Of these two, special emphasis was placed on telecommunications networks. A task was set for securing a profit in the existing market, centered on NTT as the main source of the company's profits, and expanding the company's market share in the coming age of multimedia and personal communications. From the viewpoint of the company's business portfolio, the telecommunications network business was given the role of a "cash cow," and the profits realized in that business would allow the company to enter the multimedia business.

The relationship between telecommunications carriers and telecommunications manufacturers, however, was changing. In April 1990, NTT purchased tandem switches from Northern Telecom, Inc., marking the first time for NTT to purchase a large-scale exchange, the nucleus of telecommunications networks, from an overseas manu-

facturer. For central office switching systems, moreover, NTT requested Oki Electric, Hitachi, NEC, and Fujitsu to lower their prices about 12 percent for products paid for in the fiscal year ending in March 1994. Compared to NTT's former payment system for procuring materials, where it was normal for prices to be adjusted by several percent every two years, this change was radical. The market for large exchanges, therefore, considered "sacred" until then, became price competitive because of changes in NTT's procurement policies.

The demand for PBXs, meanwhile, strongly affected by the capital investment policies of corporations, expanded only slowly during the recession following the collapse of the bubble economy. In the fiscal year ending in March 1993, total orders in the PBX market were down 8 percent year-on-year. The two largest PBX manufacturers, NEC and Fujitsu, followed by Oki Electric, Hitachi, and Toshiba, competed fiercely for business from customers who either upgraded or replaced their existing systems.

Oki Electric launched sales of the iOX 1150E, an intermediate capacity PBX, in February 1993. Next, in March 1994, it put on sale the iOX 1600 series with a built-in multiplexer for use with multimedia. The iOX 1600 was designed for cost savings and less installation space.

Oki Electric's iOX 200 series, put on sale in April 1996 as the successor to the iOX 100 series, was capable of using PHS (Personal Handy-Phone System) terminals for offices. Deregulation, moreover, allowed a built-in function for public-line-to-public-line connections via leased lines. It also had a computer telephony integration (CTI) function that integrated telephone and computer functions.

Toward open systems standards for information networks

In the early 1990s, an invisible wave of "global standards" swept across the worldwide information processing industry. During the 1980s, computers were gradually made smaller and a shift from batch processing centered on general-purpose computers to distributed processing using client-server systems was promoted. UNIX or PC serv-

ers were at the core of the client-server systems, and workstations or PCs were connected in LANs. UNIX servers were loaded with RISC and CISC chips, and Windows NT was used as the operating system (OS) in PC servers. “Wintel” products, combining Microsoft Windows and Intel MPUs, became the global standard for PCs.

These changes in systems configurations and progress in the adoption of global standards substantially affected Oki Electric’s information processing business. Up to this point, the information processing business had maintained its strong competitiveness in terminal systems connected to general-purpose computers mainly by handling distinctive hardware for specific customers and providing unique OS and applications software. Once into the 1990s, however, as the move toward global standards progressed further, a scheme emerged where platforms of hardware based on global standards and fitted with operating systems were loaded with off-the-shelf software available for each purpose. Customers could choose the hardware and software that suited their purposes best and construct a system inexpensively. In this situation, Oki Electric was forced to change its style of doing business.

In 1990, a group of young engineers in Oki Electric, based on technical ties with Intel Corporation, developed a new, high-performance workstation, the OKITAC 7300, that adopted an i860 RISC CPU and the UNIX SVR4 OS. Alliant, Intel, IBM, Oki, Olivetti, and Samsung—the members of the MASS860 consortium formed to make the i860 the de facto standard for RISC CPUs—evaluated Oki Electric’s workstation highly. To penetrate the workstation business in the U.S., Oki Electric established Oki Microsystems Division (OMS) in Framingham, Massachusetts, outside Boston, in January 1991, and in January 1992 established Oki Advanced Products Division (OAPD) in Marlborough, also outside Boston, as an R&D division for graphics accelerator products.

Oki Electric’s penetration of the North American market with its OKITAC-7300 workstation was not successful because Intel was forced to dissolve MASS860 following a shift in its policy concerning the i860. The workstation project, however, accelerated the company’s shift toward an open systems policy and stimulated system engineers

to move toward the open system integration business.

Urged by changes in the external environment, Oki Electric adopted a policy of multi-culture support—aggressively supporting plural software cultures—in its information processing business, and in May 1992 offered OKI Framework as its systems concept. A month earlier, it signed a contract with Hewlett-Packard (HP) of the U.S. for comprehensive business ties. The aim of the partnership was to make maximum use of HP's outstanding computer technology and Oki Electric's communications technology, for mutually complementary growth. Oki Electric introduced the HP9000 on an OEM basis as hardware, and in December 1992 began supplying the OKITAC-9000 series as a response to the demand in Japan for client-server systems.

Oki Electric's information processing business, however, was affected substantially by the collapse of the bubble economy. Sales by the information processing systems group between April 1991 and March 1996 decreased from 278.9 billion yen to 178.5 billion yen, partly influenced by the spin-off of Oki Data Corporation. From their peak, sales dropped by 64 percent. At any rate, profits in that group always depended heavily on sales of banking information systems to financial institutions, including automated terminals, and the electro-acoustic business. Because of the collapse of the bubble economy, however, the business of financial institutions had worsened and their capital investments in information systems had decreased. Sales of banking information systems, other than automated terminals, thus turned sluggish, and profits worsened. The weakening of one of the main sources of profit for the company had a major negative influence on its overall business.

Deregulation and dawning of borderless age

The year 1993 brought with it continuing sluggishness in Japan's economy. It was also a year in which the transformations Japanese society underwent during the postwar period became clearly visible. In the general elections held on July 18, for example, the Liberal Democratic Party failed to retain a majority and the Socialist Party suffered

a crushing defeat. The “1955 system” of two main parties controlling politics thus came to an end. In its place, a tripartite coalition was formed that elected Morihiro Hosokawa as Prime Minister on August 5. That marked the first time in 38 years for a non-Liberal Democratic Party administration to be in power, a truly epoch-making event in Japanese politics. Also in 1993, “deregulation” became a buzzword. The Hosokawa Cabinet favored a thoroughgoing easing of regulations, hoping that doing so would revitalize the private sector and contribute to economic recovery. After the Hosokawa Cabinet collapsed, the coalition cabinet of Prime Minister Murayama continued the policy of deregulation, introducing a measure in March 1995, for example, that removed the ban on establishing holding companies.

In the midst of the recession that continued after the bubble economy collapsed, the yen tended to continue to appreciate versus the U.S. dollar. In the five years between April 1990 and April 1995, the yen appreciated approximately double versus the dollar. Companies that until then had taken every step possible to reduce costs found that they could not endure this steep appreciation. Many began relocating production facilities overseas. Also, as the yen continued its rapid appreciation, attention came to be paid to the disparity between prices of goods and services in Japan and those overseas. In a survey conducted in June 1995, prices in Tokyo were found to be higher than those in New York, London, and Paris. The figures for Tokyo were 1.59 times those in New York, 1.52 times those in London, and 1.34 times those in Paris. From about 1994, meanwhile, the phrase “price collapse” came into vogue, as the price disparity between Japan and overseas countries was substantially reduced. As the import of low-priced overseas goods increased, the former price system in Japan collapsed, and domestic products lost their price competitiveness.

The events behind the three keywords “deregulation,” “appreciating yen,” and “price collapse” all struck a hard blow to Oki Electric’s business. “Deregulation” in the telecommunications industry promoted the entry into the market of domestic electrical manufacturers and various overseas corporations, badly upsetting the advantage

enjoyed by companies in the former “NTT Family.” In effect, the market entry of those companies marked the arrival of the “borderless” age. Because of the appreciating yen, meanwhile, Oki Electric came to feel more strongly the need to procure parts and raw materials abroad and to expand its overseas production of parts and finished goods. And, finally, the collapse of prices dealt a direct blow to Oki Electric’s business, already suffering from a high cost rate, and weighed heavily on profits. Throughout the 1990s, in fact, Oki Electric was destined to continue struggling amidst these changes in the business environment.

One urgent task facing Oki Electric in the context of its worsened business performance after the collapse of the bubble economy was spinning off its printer and facsimile business. This was one of the three main reform measures incorporated in the Restructure 1992 plan that the company had begun considering to boost profitability. The idea was carried over in the subsequent business-restructuring plan and became gradually more concrete. In the process of implementing the business-restructuring plan, however, the idea of spinning off the printer and facsimile business changed from being a restructuring measure to becoming an important part of a more aggressive management policy.

In April 1994, Oki Electric firmed up the final plan for spinning off the printer and facsimile business. At that time, three principal objectives were outlined. First, the business would depend mainly on indirect sales, with the sales channels taking the lead in developing new products. Second, a steady flow of new products would be developed that maintained the advanced nature of the company’s technology and, based on patents, would win out in competition. And third, to enable production at low costs at plants developed globally. At the general shareholders meeting held in June 1994, it was decided to transfer Oki Electric’s printer, facsimile, and related business to Oki Datasystems Co., Ltd., set up as a wholly owned subsidiary.

On October 1, 1994, Oki Datasystems changed its name to Oki Data Corporation (ODC) and the company was expanded. It took over all the management resources of Oki Datasystems as well as those of the Info-Communications Products Group of Oki Electric. It

started its new corporate life with capital of 4 billion yen and about 1,200 employees.

Relocating printer production overseas

In line with Oki Electric's business-restructuring plan, the printer and facsimile production divisions in the Takasaki Plant were transferred to the Fukushima Plant of ODC. The Takasaki Plant then began concentrating on development and design. As the yen appreciated further, however, the shifting of printer and facsimile production overseas became unavoidable.

In July 1993, Oki Electric announced that it would expand its overseas production of the main components for printers. The production of development units for LED printers was moved to Oki (Thailand) Co., Ltd., and the production of toner cartridges was moved partly to the Okidata Group in the U.S. and partly to Oki (U.K.) Ltd. A new production facility was built inside the Oki (Thailand) LSI plant to produce the LED printer development units formerly produced for export at the Takasaki and Tomioka plants.

Even as ODC was being established, the yen continued to appreciate. Since 80 percent of all printer production was destined for overseas markets, it was essential to shift production overseas quickly and smoothly to make the new company profitable as soon as feasible. To reduce production costs, ODC moved to expand its overseas production by shifting 50 percent of the Fukushima Plant's production of printers and facsimiles to Thailand by May 1995. Since labor accounted for less than 10 percent of total printer production costs, however, to reduce production costs further it was necessary to reduce the cost of materials by procuring parts internationally. For printer production in Thailand, the percentage of parts procured overseas was expected to exceed 70 percent. The only item to be supplied from Japan was the LED head. So plans called for the full-scale use of parts procured overseas. For that purpose, a procurement center was set up in Singapore, and procurement specialists were sent there.

A ceremony celebrating completion of the printer plant in Thai-

land was held in July 1994. The plant, built right next to an existing semiconductor plant, was two-storied and had a total area of 11,000 square meters. At first, the plant produced LED printer development units, but soon it was enlarged for the production of printers and facsimiles, scheduled to begin in the fiscal year starting in April 1995.

In early 1995, ODC faced a situation where the yen appreciated to almost 85 yen per dollar while the rate set inside the company was 95 yen per dollar. The company coped with this situation from April 1995 by accelerating its shift of production to overseas plants, raising the efficiency of the system for procuring parts overseas, and bolstering its domestic sales network. As one step, it seconded personnel from the design team in charge of procurement to the Thailand Plant, aiming to speed up procurement activities and make them more efficient. Together with the start of printer and facsimile production at the Thailand Plant from May 1995, production of page printers also began at the Cumbernauld Plant of Oki (UK) in Scotland. Dot matrix printers were already being manufactured there. Because of this increased production in Scotland, the percentage of worldwide printer production accounted for by production in the U.K. increased from about 10 percent to about 20 percent.

A page printer using an LED printer head was one of ODC's mainstay products. Although LED technology was outstanding as a printing system, however, it was still not being used widely and was thus somewhat weak in cost competitiveness. Despite this, ODC dared to adopt a strategy of using the LED printer head in order to differentiate its printers from those of its competitors, and it approached the fiercely competitive printer market with that product.

Innovation in work processes, and improvement of operating performance

The plan to reorganize the production structure of the Takasaki Plant, a link in Oki Electric's overall business-restructuring plan, ended in May 1994 with reorganization of the information/communications (I/C) systems plant in Takasaki and the Tomioka Plant. The I/C

plant in Takasaki made a new start as a plant dedicated to development, experimental production, and production of systems products. The Tomioka Plant, meanwhile, was newly positioned for mass-producing mechatronic products. This included the automated teller machines (ATMs) and cash dispensers (CDs) it was already producing plus products the Takasaki Plant had been producing, such as general-purpose teller machines for financial institutions, ticket-issuing printers, and point-of-sales (POS) terminals. Production of most of the products the Takasaki Plant formerly produced, therefore, came to be concentrated at the Tomioka Plant.

In June 1994, a ceremony was held to mark the completion of a new plant in Numazu. The plant was planned together with efforts to improve the company's overall production efficiency by relocating the Tokyo Plant's operations to Numazu. Production operations began at the Numazu Plant in August 1994. The plant was responsible for manufacturing products related to electro-acoustic systems, automotive electronics systems, and public systems.

Oki Electric's business and its operating performance began recovering earlier and faster than originally expected. In its non-consolidated financial results for the fiscal year ending in March 1994, orders received totaled 571 billion yen, up 2 percent year-on-year, and net sales were 565.5 billion yen, up slightly. The operating income account, meanwhile, recorded a profit of 3.8 billion yen, versus a 38.3 billion yen loss the previous year. Although the company recorded a net loss of 2.9 billion yen for the term, an extraordinary loss of 5.3 billion yen was posted as a special retirement allowance for the company's early retirement plan. Actually, therefore, the company's operating performance had improved substantially. Factors contributing to the favorable performance included the electronic devices group turning profitable because the demand for memory products had improved in the U.S. and profits had increased in the telecommunications systems group. In contrast, the profit picture in the financial systems division worsened, and profits for the overall information processing systems group were sluggish.

Despite the recovery in operating performance, there was no room for complacency concerning the future of the company's core busi-

nesses. In December 1993, during a review of the business-restructuring plan, the policy was added of speeding up business through innovations in processes and operations. Traditional work processes and business structures were hindering a speed-up in business operations. One result was that tardy responses to customers led to inventory increases and an increase in the number of indirect personnel. This created a vicious cycle that made it difficult to improve profitability. In order to halt this cycle and introduce reforms in work processes and business structures, three principal objectives were established: (1) to turn 30 percent of clerical operations into high value-added operations; (2) to reduce inventories by 30 percent; and (3) to raise labor productivity by 30 percent. If these objectives were achieved, the efficiency of the company's overall work operations was expected to double. In order to promote their achievement, in February 1994 the company established a Business Process Reengineering Division.

2. Start of Business Restructuring Plan, Part II

President Shiko Sawamura assumes office

Oki Electric's non-consolidated net sales for the fiscal year ending in March 1995 were 536.3 billion yen, a 5 percent decrease year-on-year. Consolidated net sales, on the other hand, were 656.9 billion yen, up 0.8 percent, a somewhat sluggish performance. Non-consolidated net sales decreased mainly because the printer business had been spun off. Sales increased in both the electronic devices and telecommunications systems groups, meanwhile, and the cost rate improved together with implementation of the business-restructuring plan. The increased sales in the electronic devices group led to expanded profits for the group. Operating income for the year was 41.5 billion yen on a non-consolidated basis and 46.4 billion yen on a consolidated basis, both all-time highs.

Assured that the business-restructuring plan had achieved a mo-

dicum of success, President Jinguji next introduced Part II of the plan. In April 1995, he called on the employees to reform the company's business structure and to modernize its corporate culture.

For reforming the company's business structure, the first step in Part II was to concentrate the company's resources and select the key businesses. In doing this, the business unit (BU) approach was adopted, with the company's businesses classified into five categories—foundation businesses, key businesses, verified performance businesses, businesses requiring improved efficiency, and businesses possibly requiring termination—according to profitability and growth potential. The business performance of each BU would be evaluated basically every three years. By strategically distributing resources among the BUs, these steps were aimed at changing Oki Electric into a company with a solid business structure, high growth, and high earnings.

The second step in Part II was to meet the challenges of the ongoing price revolution and to develop new products. Two objectives were set: (1) to reduce prime cost by 50 percent by the fiscal year starting in April 1997; and (2) to develop twice as many new products during the term of the Part II plan as were developed over the previous three years. The company thus adopted specific quantitative targets and planned reforms in its business structure in order to respond effectively to competition in a borderless market where prices were rapidly softening.

Next, in order to carry out the reform of the company's business structure, it was essential to change its corporate culture. To do this, various measures were introduced, such as clarification of business responsibility, the innovation of business operations via management by objective (MBO) and a "flattening" of the overall organization, smoother internal communications, and reform of the personnel evaluation system. The aims were to aggressively change and revitalize Oki Electric's corporate culture.

Compared to the previous business-restructuring plan, the Part II plan placed clearer emphasis on "Concentrate resources and select the key businesses" in the business structure. One of its main features was the heavy importance it assigned to reform of the corporate culture, a key element in supporting the company's business. The corpo-



Shiko Sawamura

rate culture had not been identified clearly in the previous restructuring plan. As well, Part II marked the first time that the traditional management practices of Oki Electric were made a target of change.

At the board of directors meeting held on August 28, 1995, President Jinguji, who had been undergoing medical treatment, resigned his position as president. The board then voted in Executive Vice President Shiko Sawamura as president. President Sawamura had worked in the sales division ever since he joined Oki Electric in 1953. After heading the sales division of electronic devices for several years, he assisted President Jinguji as senior managing director first and then as executive vice president and manager of the Corporate Planning Office.

President Sawamura lost no time in expressing his determination in succeeding President Jinguji. “I feel somewhat perplexed by this sudden call to head our company,” he said, “but I will do everything in my power to ensure managerial stability and our company’s further growth.” He also said he would continue to promote the Part II plan aimed at reforming the company’s business structure and modernizing its corporate culture.

While steadily carrying out the Part II plan, Oki Electric introduced an MBO system in the fiscal year starting in April 1995 and then used it throughout the company in the following fiscal year. The take-off point for the MBO system was the “Company-wide objectives for the fiscal year starting in April 1996.”

Three principal items comprised the company-wide objectives. First was successful completion of the Part II restructuring plan; second was to concretize the content (business plan; organizational con-

cept) of each of three business frames (systems integration, systems components, and core components) for implementation in the fiscal year ending in March 1998; and third was to achieve the figures set in the budget for the fiscal year beginning in April 1996. President Sawamura hoped to achieve the contents of the Part II plan by promoting these company-wide objectives.

The basic concepts behind the MBO system were “Trust” and “Change”—fundamental elements for conducting business through “true intent” communications at all worksites and levels. Organizational objectives were set based on agreement, with the aim of clarifying the role of individuals concerning the company-wide objectives. Although MBO techniques were not particularly new, substantial differences existed between Company-Wide Quality Control (CWQC) and MBO. Two of them were integration of the objectives for individuals and those of the company, and creation of a worksite environment that would allow ideas rich in creativity to well up from the bottom. Great expectations were held that MBO would help to promote change in Oki Electric’s corporate culture.

Year One of Internet, and recovery in business performance

On January 17, 1995, the Great Hanshin-Awaji Earthquake struck Kobe and the surrounding area, taking 6,308 lives. Although 1995 thus began with terrible news, economic growth for the year was 2.2 percent in real terms. It seemed, therefore, that Japan’s economy, four years after the collapse of the bubble economy, had broken from the long recession and was seeing light at the end of the tunnel.

In the business world, the I/C revolution was progressing at an accelerated rate. On August 24, 1995, Microsoft Corporation launched Windows 95 concurrently in 25 countries. PCs, meanwhile, were finding their way into homes and use of the Internet was spreading at an incredible speed. “Internet,” in fact, became a buzzword in Japan, so much so that 1995 came to be called “Year One of the Internet.”

Oki Electric's business and operating performance recovered from the fiscal year ending in March 1995, with electronic devices providing the motive power. This recovery became more obvious in the fiscal year ending in March 1996, with non-consolidated net sales up 4 percent year-on-year, to 556.3 billion yen, and ordinary income reaching 48.3 billion yen, higher than the previous year and setting a new all-time high.

In the telecommunications systems group, exchanges and transmission equipment also sold well that same fiscal year, with sales up 5 percent year-on-year. In the information processing systems group, meanwhile, although sales of equipment to financial institutions expanded, overall sales were down 6 percent, largely because the printer and facsimile businesses had been transferred to ODC. Continuing its fine contribution to the company's overall profits in the fiscal year ending in March 1995, meanwhile, sales in the electronic devices group were up 14 percent again year-on-year, mainly due to favorable memory sales.

In the early 1990s, information systems for financial institutions came to be built on open networks. The OKITAC-2500 was an example, developed as a full-scale client-server system.

The branch integration system that formed the core of the OKITAC-2500 banking information system was aimed not only at handling account operations but also as a management system for handling all the business operations of a bank's sales branches. Four support systems comprised the overall system: accounting operations, information operations, administrative work, and system operation. Because the OKITAC-2500 was the first banking information system



OKITAC-2500
*general-purpose terminal
for bank tellers*

in Japan to adopt a general-purpose OS for application with core business operations, Oki Electric's system engineers had to overcome diverse difficulties.

With cooperation from the Fuji Bank, the first user of the OKITAC-2500, and Microsoft Japan, the provider of the OS, and due to the tenacious spirit and tremendous efforts of the development personnel in Oki Electric, development of the OKITAC-2500 moved forward steadily, although at a slightly slower pace than originally scheduled. The development staff worked tirelessly on the project.

When trial operation of the OKITAC-2500 system for the Fuji Bank began in July 1996, the occasion attracted the attention of the media. After seeing the successful installation at the Fuji Bank, the Sakura Bank also ordered an OKITAC-2500 system. Trial operation began there in October 1997. That was followed by trial operation of another OKITAC-2500 system from December 1997 at the Akita Bank, the first rural bank to use such a system.

Construction of S2 Plant at Miyagi Oki Electric, and worsening of semiconductor market

Along with the recovery in the semiconductor market, Oki Electric turned aggressive in its capital investments. For example, it revised its investments in semiconductors upward in the financial results for the interim period ended September 1993 to 11.9 billion yen, and also revised upward the original estimate of 21 billion yen to 29 billion yen for semiconductor investments in the fiscal year ending in March 1995. In 1994, supported by a strong demand for PCs in the U.S., the price of 4M DRAMs continued to be stable at a high level. Coupled with increased sales of telecommunications equipment to NTT, the profit picture of the company's semiconductor business turned bright.

In 1995, construction of the S2 Plant at Miyagi Oki Electric was completed and production got underway. This was Miyagi Oki's second plant, built on a 25,000-square-meter site and dedicated to manufacturing 16M and 64M DRAMs. The ceremony marking completion

of construction was held in April and a ceremony celebrating the first shipment of 16M DRAMs was held in December. The budget for construction of the S2 Plant had been increased and the construction schedule had been moved forward to meet the increasing demand for semiconductors.

Oki Electric's semiconductor business in the fiscal year ending in March 1996 recorded sales of 210 billion yen, thus contributing substantially to the all-time highs the company recorded that year in net sales and operating income. Engineers at Oki Electric, meanwhile, continued their development of 4M and 16M DRAMs, and the company shipped the first samples of 64M DRAMs. Among logic products, LSIs for use with PHS and FM multiplex were developed for commercial use and put on sale. Although these logic products were well received in the market, the percentage of Oki Electric's semiconductor sales accounted for by memory products actually ended up higher than originally expected.

The company, however, was affected negatively once again by the vagaries of the semiconductor market. The non-consolidated financial results for the fiscal year ending in March 1997 recorded net sales of 540.6 billion yen, down slightly by 3 percent year-on-year. Operating income, however, was 10.8 billion yen, down a tremendous 78 percent year-on-year. Even on a consolidated basis, sales were down 2.1 percent and operating income was down 84 percent. Viewed by business group, sales in the telecommunications and the information processing businesses were both favorable, the former up 32 percent and the latter up 8 percent. In contrast, sales in the semiconductor business decreased by 39 percent, reflecting the sudden downturn in business.

Prices for DRAMs turned soft from the end of 1995 due to an



Ceremony marking first shipment of 16M DRAMs from Miyagi Oki Electric Plant

oversupply of products. And in early 1996 prices rapidly fell further. As a reflection of this drop in prices, the value of DRAM shipments in 1996 decreased by 40 percent year-on-year. Compared to the company's expected production output of 229.9 billion yen worth of electronic devices in the fiscal year starting in April 1996, actual output was 126.8 billion yen, equivalent to a large 39 percent decrease year-on-year. In sales as well, the percentage of the company's total net sales accounted for by the electronic devices group decreased sharply in the fiscal year ending in March 1996 to 23.4 percent from the 37.2 percent of the previous year. Even in 1997, DRAM prices continued to fall, and profits in the semiconductor division deteriorated further.

Because of the rapid changes in the semiconductor market, President Sawamura quickly set a goal of "halving inventories," and in July 1996 requested the general managers of each business group to make even greater efforts toward improving profitability. The ideas of halving cost and halving inventories were related to the just-in-time (JIT) production system scheduled for full-scale introduction from the fiscal year beginning in April 1997. The company decided to introduce the JIT system with the aims of rebuilding its cost competitiveness and becoming more flexible in responding to market situations, as well as promoting the thoroughgoing elimination of waste at production worksites and in indirect departments.

3. Aiming to Change Oki Electric's Corporate Culture

"Progressive spirit," and in-house venture business system

In April 1996, Oki Electric announced its corporate mission: "The people of Oki Electric, in the company's traditional progressive spirit, are committed to creating superior network solutions and pro-

viding excellent information and communications services nationally and internationally to meet the diversified needs of customers in the digital age.” The mission is based on the “progressive spirit” of Kibataro Oki, the company’s founder. It expresses the company’s willingness to challenge difficult situations, to create new business domains, to develop new, creative products with international competitiveness, and to secure a proper level of profits.

As a link in business reform, the epitome of the new corporate mission put into practice, an in-house venture business system was introduced in May 1996. Recognizing that the progressive spirit of Kibataro Oki is identical to the venture business spirit, this in-house system was aimed at linking original ideas inside Oki Electric to new businesses in the I/C field.

Announcement of “Vision 2000”

President Sawamura announced the “Vision 2000” business plan in April 1997. The plan aimed at specific goals of non-consolidated net sales in the fiscal year ending in March 2001 of 750 billion yen (1 trillion yen on a consolidated basis), and operating income of 45 billion yen (55 billion yen on a consolidated basis).

The concept behind the Vision 2000 plan was to cultivate business domains in which Oki Electric had core competence, with the period April 1998 to March 2001 as a target. Achieving that goal required an appropriate organization, the concentration of resources, the formation of strategic alliances, and a determined group of employees to assume the lead.

The main business domain listed was the I/C business, followed by the pursuit of core competence in the three layers of systems integration, systems components, and core components businesses.

Also, seven important measures were listed for realizing this business vision: (1) concentrating resources and selecting key businesses; (2) strengthening market functions; (3) bolstering capabilities to develop new products; (4) reinforcing cost competitiveness; (5) enhancing strategies concerning intellectual property rights; (6) augmenting

the collective strength of the overall Oki Electric Group; and (7) expanding the development of overseas business.

In order to achieve the aims of the Vision 2000 plan, Oki Electric reorganized itself in July 1997. The reorganization aimed at a more efficient and more flexible management of business operations. As specific measures, the company abolished the business group organization and placed the 16 business divisions under President Sawamura's direct control. It also strengthened the authority and responsibility of the divisions and raised their level of self-sufficiency to allow them to perform all functions from marketing to design, production, quality assurance, distribution, and service. Doing so, it was felt, would make it clear which core competence each business division could acquire among the above three layers of business (systems integration, systems components, and core components), thus making it possible for them to initiate action smoothly, which would lead to the company's overall growth. In addition, members of the strategic staff throughout the company were concentrated in the Corporate Planning Office to bolster the management planning function.

Another important task was a flattening of the hierarchical organization. In general, except for the production departments and some of the indirect departments, all the fixed sections and subsections were abolished and, depending on the particular situation, teams were organized. Flattening the organization through the team system was aimed at speeding up the transmission of information and decision-making.

Providing new node system, and innovations in in-house networks

Included in the Year 2000 Vision plan was the goal of making the telecommunications network business a 200 billion yen operation in the year 2000. In line with that goal, the content of the telecommunications network business was changed to multimedia communications. The overall theme for the Vision 2000 plan was: "Meet the challenges of global business."

Four large projects were introduced to offset the loss in exchange

business sales: (1) new node system, including asynchronous transfer mode (ATM) switches; (2) optical access system for subscriber lines; (3) PHS systems, from infrastructure to terminals; and (4) enterprise network systems for multimedia communications. An increase in sales was also aimed at by developing the market for multimedia mobile communications systems, computer communications systems compatible with open computer networks (OCN), video communications systems, and microelectronics used in telecommunications.

The telecommunications network business was one of Oki Electric's mainstay businesses. It remained firm even in the fiscal year ending in March 1993 when profits worsened, thus supporting the company's profits. The structure of the telecommunications carrier business, however, centered on Type I telecommunications carriers, such as NTT and New Common Carriers (NCC), the main customers for telecommunications networks, was changing rapidly in the 1990s. Although NTT had for many years accounted for 70 to 80 percent of the capital investments in the telecommunications industry, that figure dropped to 47 percent in the fiscal year ending in March 1997. In that same year, capital investments by the NCCs also reached 47 percent, thus matching NTT's investments. Due to the growth of the NCCs, and the noteworthy progress of the mobile telecommunications business from 1995, the makeup of the telecommunications device market changed substantially.

The basic networks of the multimedia age required conventional telephone (voice) networks and new data communications networks that could handle information in the form of symbols (letters, characters), images, and video. NTT and the telecommunications equipment manufacturers thus jointly promoted the development of ATM technology to allow for broadband high-speed data communications via the Broadband Integrated Services Digital Network (B-ISDN), an all-purpose digital network.

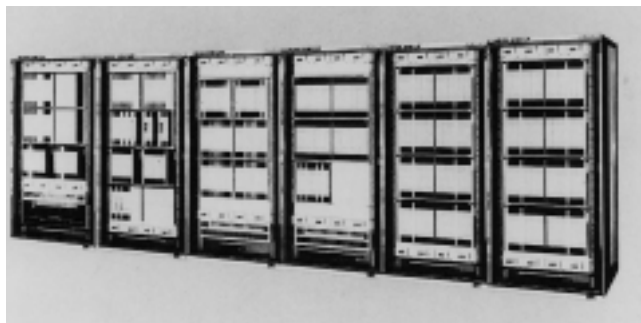
In order to develop a new node system using ATM technology, meanwhile, NTT sponsored a joint development project with six companies—Oki Electric, NEC, Fujitsu, Hitachi, Toshiba, and Northern Telecom. For developing a separate link system, NTT worked jointly with NEC, Fujitsu, Hitachi, Mitsubishi Electric, AT&T of the U.S.,

and Siemens of Germany. From October 1992, experiments began on an ATM system for commercial use. The NS10A type ATM switch (AHM) that emerged from the joint project in which Oki Electric participated was offered for commercial use from September 1995. A new node system from the NTT project was produced from 1996. Oki Electric's node system product was the NS8000 series.

From June 1992, Oki Electric offered corporations in Japan, including the NCCs, the iOX 7000 series of frame relay switching equipment made by StrataCom, Inc., of the U.S., for integrating and transporting a wide variety of information over communications systems. This series responded to emerging needs related to an increase in inter-LAN communications, more active investment in frame relays, and the installation of ATM networks. The iOX 7000 was a low-end machine with a 32 Mbps data exchange capacity. In March 1995, however, the iOX 7500 (20 Gbps) was put on sale, followed in December 1995 by the iOX 7200 (1.2 Gbps), thus offering a product line from low- to high-end switches.

From the mid-1990s, corporations began converting their in-house communications networks from networks connected by PBXs and centered on voice to networks that integrated voice and data by connecting servers and PCs on open intranets.

In September 1996, in order to respond to the rapid changes taking place in corporate intranets, Oki Electric put on sale its Discovery 2000, a multimedia communications service that integrated voice and data communications via ATMs and an Internet protocol (IP). Also in September, the company announced its CTstage Com-



Asynchronous transfer mode switch delivered to NTT

puter Telephony Integration (CTI) system that offered unified messaging with Windows NT as a platform. CTI grew as a new business domain integrating information and communications.

In the mobile telecommunications business, meanwhile, Oki Electric was fighting a tough battle. Early in the 1990s, together with the explosive spread in the use of cellular telephones, remarkable advances were seen in making cell phones smaller, more sophisticated, and less expensive. As digital systems diffused rapidly, Oki Electric began developing a digitalized portable terminal. Although wireless technology licensing was obtained from Qualcomm, Inc., of the U.S., and the company succeeded in the in-house development of a CDMA chip, its digital portable terminal business faced an extremely difficult situation from around 1997 and the company ultimately had to withdraw from it.

Leading company in automated terminals

Automated terminals evolved at a remarkable pace. In the early 1990s, Oki Electric announced a new series of Automated Teller Machines (ATMs), the AT-300V series, equipped with several original functions. The company had earlier marketed its AT-300 series to meet the requirements of non-stop operation; the AT-300V series expanded the “non-stop” and “no wait” functions by utilizing a group turn-around system (GTS). The next series was the AT-400 series offering completely automated operation, put on sale in 1995. The development concept for the AT-400 series was further non-stop performance, high-speed handling to enhance the “no wait” function, sufficient flexibility for future expandability, and “non-touch” features so that personnel in charge did not have to be called so much.

In September 1995, Oki Electric signed an exclusive sales contract with Sensor, Inc., of the U.S. for marketing its iris recognition products for personal identity verification and began applying the technology to ATMs. In December 1996, Oki Electric participated with equity in Sensor and began full-scale development of business utilizing iris recognition technology.

In September 1998, Oki Electric announced the ATM 21 series as the next generation of ATMs. This new series was designed to reduce the operation costs resulting from 24-hour operation and to handle the sale of financial products, such as investment trusts, insurance, and securities. As the co-leader with Fujitsu in the ATM business field, Oki Electric continued to play an important role in pushing the envelope for next-generation automated terminals.

Shift to logic, based on silicon platform architecture

In its Vision 2000 plan, Oki Electric included the basic policy of offering “system-on-silicon” LSIs implementing systems to the multimedia consumer market with a foundation in computers and communication. A target of net sales for the fiscal year starting in April 2000 of 400 billion yen was set for this business, with memory products accounting for 67.5 percent, logic products for 25 percent, and new products for 7.5 percent.

The policy of emphasizing system products as the nucleus of the Vision 2000 plan was picked up and evolved further in the semiconductor business strategy Oki Electric announced for the electronic devices business group in March 1998. The main feature of this new strategy was its full-scale shift to logic, an epoch-making shift for the company.

The new strategy emphasized growth mainly through logic products based on silicon platform architecture (SPA). Its target was to increase the presence of Oki Electric worldwide and to promote a business structure capable of providing a stable level of profits. SPA refers to a platform with a four-layered structure. Device core tech-



CTI system CTstage

nology (processing/packaging/inspection) is the basic SPA technology, on top of which are placed circuit technology such as a library and a development environment. On top of that is a layer of intellectual property (IP) core component technology, including a processor and IP for applied fields. The fourth layer is systems integration technology for integrating the systems on the silicon chip. Developing this business centered on SPA was expected to heighten the reputation of Oki Electric for the work it was doing with silicon platforms. It also included the strategy of turning the company's business style into one where it offered business solutions to customers rather than waiting for customers to order products.

As these moves developed, the company gradually viewed as an important challenge the changing of its business structure in order to aim at earning stable profits from the semiconductor business. To establish the device business in a way characteristic of Oki Electric, it was necessary to shift the business emphasis from quantity to quality. Also, adjusting the ratio of memory and logic products to 1:1 in 2000 would minimize losses if conditions in the semiconductor market worsened.

The new strategy that evolved at this time was to secure stable profits by gradually expanding the semiconductor business toward logic products. In short, the logic business would focus on telecom-related markets and the consumer market for digital equipment, core competences of Oki Electric. The semiconductor business thus began moving in a new direction as the company searched for the path toward regeneration.

Reorganization of Oki Group—Oki Electric's third founding

From the 1980s, a clear tendency emerged in Oki Electric toward evaluating the operating performance not only of the parent company but also of the affiliates reporting in the Oki Group's consolidated report. At the beginning of the 1990s, when business results clearly worsened due to the bubble economy's collapse, it became increasingly necessary to consider consolidating or dissolving some

of the affiliates. It was also essential to promote the growth strategy of the Oki Group by evaluating the business results of the affiliates and providing incentives for them to improve their performance.

A system for evaluating the performance of affiliates was introduced in the fiscal year starting in April 1993. It aimed at overseeing the performance of all the affiliates in the Oki Group and providing the affiliates with incentives to promote increased efforts for improving their individual businesses and energizing the overall group.

To cope with changes in the marketplace, meanwhile, Oki Electric moved forward with consolidating the affiliates. Concerning the Restructure 1992 plan announced in October 1992, a task added to the original plan was consolidation of software-related affiliates. The aim of consolidation was to increase the efficiency and independence of the affiliates working with software and other information services. In August 1993, for example, Oki Systemsoft, a company working with telecommunications software, was merged with Oki Telecommunications Systems Co., Ltd. From the following month, moreover, the merger or integration of regional systems development companies was carried out, reorganizing them into a group operation centered on Oki Software Co., Ltd. Earlier, in August 1992, the service division in Oki Electric responsible for maintenance and after-sales service was spun off to form Oki Customer Adtech Co., Ltd. (OCA). This step was to allow a more flexible response to the increased diversification of market needs. From the mid-1990s, some production subsidiaries, such as Tohoku Oki Electric Co., Ltd., were reorganized to strengthen group management.

From the fiscal year beginning in April 1997, after the government increased the consumption tax to 5 percent, Japan's economy entered another downward phase and consumer spending fell dramatically. Besides sluggish consumer spending, a shaking of the nation's financial system also rocked the economy. In November 1997, the Hokkaido Takushoku Bank declared bankruptcy. Also, Yamaichi Securities, one of Japan's top four securities companies, was forced into voluntary closure. The myth that large financial institutions could not fail was thus easily disproved. Capital investments began to decrease from the fourth quarter of 1997, and the economic growth

rate in real terms for 1997 was minus 0.7 percent.

President Sawamura had viewed 1997 as a year to realize change in Oki Electric. While being convinced that he had correctly outlined in Part II of the original business-restructuring plan the tasks the company had to accomplish, he admitted that the work for accomplishing these tasks had barely begun. In speaking about the future business structure of Oki Electric, President Sawamura said that organizational reforms and other tasks had started in July 1997 with the aim of building a new business structure based on a triple-layered business framework. But the specific businesses to be selected were still undetermined.

Before enough time passed to realize the positive effects of changes in the company's business structure and corporate culture, Oki Electric was shaken by drastic changes in the I/C equipment market, and was affected directly by the recession that accompanied the financial crisis. The company's operating performance in the fiscal year ending in March 1998 was even worse than the previous year. In the backdrop of an obvious business recession, met head-on with strong efforts to increase sales, non-consolidated net sales were 555 billion yen, up a slight 2.6 percent year-on-year, and consolidated net sales were 764.5 billion yen, up 4.4 percent year-on-year. Viewed by business group, sales in the electronic devices group were up slightly and those in the information processing systems group were also up, but the decrease in sales in the telecommunications systems group affected overall sales, and the result was sales about level with the previous year.

Although sales personnel struggled valiantly in the midst of the business recession, net income on both a non-consolidated and consolidated basis fell into the red. The main reasons were that the loss in the electronics devices business was larger than in the previous term and profits in the telecommunications systems group decreased drastically. The fact that changes in the company's business structure had not yet been implemented contributed to the overall downturn in the company's business. One example was that the structure of the electronic devices business still placed undue weight on DRAM products. Another was the heavy dependence of the telecommunications

systems group on business from NTT, thus making it easily subject to negative influences when NTT spent less on capital investments.

While President Sawamura was still senior managing director under President Jinguji, the two men had discussed how the successor to President Sawamura should be from the younger generation of managers with a fresh sense of what Oki Electric must be like in the future. President Sawamura decided it was time, with the move toward open systems advancing much faster than expected, to transfer the company's leadership to a younger person, and to have the company make a fresh start in its "third founding."