
• The Economic Climate and New Leadership
In the 1990s, two events in Asia had an enormous impact worldwide. One was the financial crisis that began in 1997, starting in Thailand. The other event was the sudden rise of China as a major producing nation, the “factory of the world,” where labor costs were cheap. Around this period, in April 1997, Japan lifted the consumption tax, introduced in 1989, from three to five percent. One of the city banks collapsed and a leading securities firm was forced into voluntary closure. The following year witnessed the failure and nationalization of major banks. The Japanese economy, which had enjoyed a bubble period from the late 1980s to the early 1990s, began to lose momentum. Later, the 1990s came to be known as the Lost Decade.

It was in this economic climate that Toray overhauled the AP-G2000 long-term corporate vision it had announced in April 1991, releasing a new vision, New AP-G2000, in April 1997. In June, having spent a full
decade at the helm of the company as president, Katsunosuke Maeda stepped aside to become chairman, with Senior Managing Director Katsuhiko Hirai appointed to president and chief executive officer. Hirai sought employees’ understanding and cooperation on a course of action that included six basic measures retained from Maeda’s time as president—(1) innovate attitudes and strengthen corporate structure; (2) expand business; (3) globalize and pursue global operations; (4) pursue group management; (5) develop human resources; and (6) strengthen basic research and fundamental technologies—as well as five other key points—(1) think as individuals and exercise wisdom; (2) act with speed; (3) conform to global standards; (4) uphold corporate ethics; and (5) be positive and cheerful. Alongside these business management issues, Hirai recognized the importance of cultivating ethical values, setting up the Corporate Ethics Committee, which he chaired, in August 1997.

**Earnings Transition and Steps toward Management Reform**
In Toray’s consolidated financial results for fiscal 1997, net sales were an all-time high 1.088 trillion yen, and operating income came to 71.9 billion yen. Due to the effects of the Asian financial crisis, however, sales and profit declined over the two consecutive fiscal terms, 1998 and 1999. In fiscal 1999, net sales fell below the trillion-yen mark and operating income dropped to 32.3 billion yen. In net terms, the result was a net loss of 65.7 billion yen due to the booking of 137.3 billion yen in extraordinary
losses, including a one-time cumulative recognition of retirement benefit liabilities and write-downs of real estate held for sale by subsidiaries. The biggest management problem Toray faced during this period was that 25 strategic, large-scale overseas capital investment projects, in which the company invested a total of around 200 billion yen, did not draw the projected 20 billion yen in annual incremental benefits.

Though Toray’s earnings did pick up in fiscal 2000, stimulated by the dot-com bubble that lasted until November 2000, Japan was hit by a deflationary recession from December 2000. In fiscal 2001, the company’s earnings fell well short of the forecasts it made at the beginning of the year, once again recording sales and profit decreases. There had been an influx of garments imports from China, which had grown into a major producing nation, putting pressure on Japan’s domestic fibers and textiles business, and estimates for the polyester film business had been way off mark because of drastic changes in market structure occurring as disks (DVDs) began to replace video tapes. In addition, the slump in the aircraft market following the September 2001 terrorist attacks on the United States had a direct impact on the carbon fiber composite materials business. As a result, in consolidated results for fiscal 2001, net sales came to 1.016 trillion yen, a 5.5 percent year-on-year decrease. Operating income was 18.8 billion yen, a 63.2 percent decrease. In non-consolidated results, Toray recorded its first operating loss (-5.8 billion yen) outside its founding period.

Toray’s Chairman Maeda, concerned about the direction that earnings were headed, convened a management roundtable of company officers in December 2001 to discuss strategies for rebuilding the Toray Group. Discussions continued in roundtable meetings of Board
members from January 2002, as well as in companywide meetings, such as meetings of the Executive Committee and the Board of Managing Directors. In these efforts geared toward structural reform, outside feedback on Toray, in the form of responses to questionnaires by customers and opinions of analysts and reporters, was carefully analyzed. That analysis contributed to a shared perception by the Board of Directors that (1) factor analysis of the earnings deterioration was insufficient; (2) budget and official figures were not based on norms; (3) accountability and investor relations were insufficient; (4) plans for the future were not presented; and (5) in overseas operations, the vitality of businesses in each nation had to be harnessed. In keeping with these reflections, mid-term management programs, formulated until then on an individual division or department basis, were overhauled so they would be compiled at the group-wide level with plans of heightened precision, achieved through fully attended discussions, publicly disclosed and robustly followed up to fulfill accountability and achieve high transparency. A new mid-term management program, Project New TORAY21 (NT21), was announced on April 1, 2002.


- New Leadership for Escaping Management Crisis and NT21 Implementation

In April 2002, Toray’s Chairman Maeda returned to the seat of CEO. In the meeting of the Board of Directors following the general meeting of shareholders at the end of June, President Hirai was appointed vice chairman, and Executive Vice President Sadayuki Sakakibara became
president and chief operating officer. This lineup remained until June 2004. Later, Sakakibara became president and CEO, with Maeda stepping down as a Board member to become honorary chairman. In June 2007, Executive Vice President Akikazu Shimomura was promoted to the vacant chairman post.

On April 1, 2002, after a press briefing announcing his preliminary appointment to president, Sakakibara held a meeting to announce a new mid-term management program and a long-term corporate vision, which he explained himself. The pamphlet distributed to all management personnel that same day, “Transforming into New Toray for the 21st Century—Project New TORAY21 (NT21),” contained a preamble entitled, “Transformation of the Management Idea that underlies NT21.” The eight-point transformation of management ideas presented here is a response to changes in society’s structure, with Toray revealing both internally and externally a direction to transform the company and to change.

And in his message to employees distributed at time he was appointed president, Sakakibara analyzed the factors behind the rapid deterioration
of earnings and stated that it was his job “to return to observing actual realities directly, analyzing situations thoroughly, and acting with speed, and to lead the entire group in seeing to it that management reforms prescribed by NT21 are properly implemented,” before getting stuck into the reforms.

The NT21 mid-term management program was made up of three parts—(1) issues and reforms for the immediate future (pressing issues and reforms requiring implementation immediately or within two years); (2) issues and reforms for the near future (issues and reforms that need to be worked on immediately and implemented in three to five years); and (3) a long-term vision (looking five to ten years into the future). As the long-term vision, Toray simultaneously released the AP-New TORAY21 long-term corporate vision. The aim of AP-New TORAY21, while seeking growth expansion through global group management generally along the lines of the New AP-G2000, was to transform Toray from monozukuri (manufacturing-centric business) into a “New Value Creator” for the 21st century, a new business format that would involve creation of new value to deliver new solutions to customers. This would be achieved by incorporating expertise and know-how, for example from new services and new production and distribution systems. This was an attempt to build on and give concrete form to the corporate philosophy: “Contributing to society through the creation of new value with innovative ideas, technologies and products.” Those ideas would later be applied to management of Toray.
• **NT21 Achievements Reflected as NT-II Advances**

Through NT21, Toray advanced five projects for reinforcing corporate structure with numerous achievements. (1) Marketing innovation involved efforts to implement the New Value Creator idea. (2) The project to strengthen total cost competitiveness reduced total costs by a total 26.3 billion yen over the two fiscal years 2002 and 2003. (3) In the project to rationalize global production, Okazaki Plant nylon tire cord filament facilities were converted to make products for airbags, and new facilities to produce filament yarn for nylon airbags were installed at Thai Toray Synthetics Co., Ltd. (TTS) in Thailand, while film facilities at Toray Plastics (America), Inc. (TPA) in the U.S. and Toray Plastics Europe S.A.S. (TPEU; facilities later transferred to Toray Films Europe S.A.S. (TFE)) in France were converted for packaging and industrial materials. (4) The project for business structure reform (a) made losing businesses and losing subsidiaries and affiliates profitable (reducing losses by around 30 billion yen between fiscal years 2001 and 2003); (b) strategically reorganized and integrated, or consolidated, subsidiaries and affiliates (measures were decided for 23 companies by the end of fiscal 2003); and (c)
undertook strategic M&A and business alliances, including the acquisition of DuPont’s U.S. fluorofiber business, taking a stake in Suido Kiko Kaisha, Ltd., and the establishment of a PBT resin manufacturing joint venture, Toray BASF PBT Resin Sdn. Berhad (TBPR), in Malaysia with BASF SE of Germany. (5) The financial structure reform project sought to improve the efficiency of capital investments and curtail inventories, among other activities, and managed to achieve the target of reducing consolidated interest-bearing liabilities to around 500 billion yen by the end of fiscal 2004, one year early.

In fiscal 2003, signs of economic recovery began to appear in Japan and overseas, and Toray’s net sales reached a new all-time high of 1.089 trillion yen, while operating income came to 56.8 billion yen, surpassing the NT21 target for fiscal 2004 (50 billion yen or higher) a year early. With foundations in place for Toray to take on challenges and reforms that would propel it to even greater heights, the company embarked on a new mid-term management program, Project NT-II (NT-II), from fiscal 2004 as the second stage of reforms. Under NT-II, efforts to reinforce corporate structure were to continue, yet with an additional offensive (proactive) element. It was to be a major drive to become a highly profitable corporate group through reform of the business structure. The operating income target was 100 billion yen.

Achievements of the eight projects implemented under NT-II are summarized as follows.

(1) The activation of corporate culture project made efforts to strengthen communication both inside and outside the organization, horizontally and vertically, through the Multi-Communication (MC) campaign. (2) The project to strengthen total cost competitiveness made
continual progress on eliminating losses and wastefulness and raising cost and operational efficiency, realizing total cost reductions of 35.3 billion yen between fiscal years 2002 and 2004. (3) The financial structure strengthening project worked to reduce interest-bearing liabilities, which fell to 484.4 billion yen by the end of fiscal 2005. The NT-II debt-to-equity ratio target of 1.0 or lower was reached at the end of September 2005. (4) In the area of marketing reform, steps were taken to reform attitudes and ideas of marketing staff, promote the New Value Creator concept, build up IT, expand one-stop, full service functions (establishing the Automotive Material Strategic Planning Department), and halve inventories. (5) The project relating to strengthening of profit control according to individual products, with some success, improved the profit margin by eliminating products reporting a gross loss. (6) The project to expand advanced materials business increased sales of related products 40 percent from 305.4 billion yen in fiscal 2002 to 429.8 billion yen in fiscal 2005. Meanwhile, in the carbon fiber composite materials business, Toray was chosen as exclusive supplier of prepreg for primary structural material applications in the Boeing 787, the new aircraft Boeing was planning. (7) For expansion of No. 1 businesses, Toray increased No. 1 businesses such as carbon fiber, polyester film, and polyester/cotton blended textiles. Sales rose 25 percent from 265.9 billion yen to 330.5 billion yen between fiscal years 2002 and 2005. Taking the polyester film business, for example, Toray lifted earnings by consolidating production of polyester film for video tape destined for Japan, the U.S., and Europe at Toray
Saehan Inc. (TSI, now Toray Advanced Materials Korea Inc. (TAK)), established in Korea in 1999, in order to take advantage of the company’s cost competitiveness. (8) For strategic expansion of businesses outside Japan, steps taken include the establishment in China of Toray Jifa (Qingdao) Textile Co., Ltd. (TJQ), a joint venture with the Jifa Group.

- **NT-II Achievements Reflected as IT-2010 Formulated**
  While the global economy held firm, the effects of these reforms, as well as the inclusion of Chori Co., Ltd. and Suido Kiko Kaisha, Ltd. as consolidated subsidiaries, contributed to a near 20 percent increase in revenue in fiscal 2004, with net sales rising to 1.299 trillion yen. Operating income was 81.1 billion yen, surpassing the 81.0 billion yen recorded in fiscal 1990 at the height of Japan’s economic bubble period. Both net sales and operating income were new all-time highs. Those records were broken again in fiscal 2005 as sales climbed to 1.427 trillion yen and operating income to 93 billion yen. Net income was 47.4 billion yen, hitting a new high after 16 years. By the end of the first half of fiscal 2006, Toray could see that it was going to achieve the 100 billion yen operating income target set under NT-II over the full year and therefore terminated the NT reform program at the end of September 2006. Over the full 12 months of fiscal 2006, net sales came to 1.546 trillion yen, operating income was 102.4 billion yen, and net income was 58.6 billion yen, meaning sales and profit had increased in five consecutive terms since the launch of the NT reforms in fiscal 2002, and earnings had exceeded the must-meet target under NT-II, consolidated operating income of 100 billion yen.

  Earlier, in April 2006, a new long-term corporate vision, AP-Innovation TORAY 21, was announced. At the same time, partial
revisions were made to the management philosophy and the Guiding Principles that were established in April 1995 as a reflection of the changing times. Toray also settled on a corporate slogan: “Innovation by Chemistry.” A campaign badge featuring both the corporate symbol and the new slogan was produced.

Six months later, in October, a new mid-term management program was introduced as Project Innovation TORAY 2010 (IT-2010). The economic environment was changing quickly due to factors including the rapid development of the industry encompassing information and telecommunications, the rise of China and other emerging nations, intensifying competition on the international stage, high oil prices, and heightened awareness of corporate social responsibility (CSR). To be able to adapt to these changes and achieve ongoing growth, the Toray Group, now with management infrastructure rebuilt through the NT reforms, had to work on technological innovation, while persisting with efforts to strengthen corporate structure. Toray sought to advance IT-2010 through such management reform, aiming for consolidated net sales of 1.8 trillion yen and consolidated operating income of 150 billion yen. Innovation was to be the key concept of IT-2010, with five kinds of innovation pursued—innovation of business structure, innovation of technologies, innovation of competitiveness, innovation of business awareness, and CSR innovation. At the same time, group-wide focal subjects were specified, along with key group-wide follow-up items. Group-wide focal subjects were (a) realignment of subsidiaries and affiliates in Japan; (b) study of
corporate organizations; (c) reformation of management accounting; and (d) improvement of personnel systems. Key group-wide follow-up items were (a) profitability of the advanced materials businesses; (b) profitability of strategic No. 1 businesses; (c) profitability of large-scale investments; and (d) financial strength. In addition, eight group-wide projects were formed, covering (1) business structure innovation; (2) overseas business strengthening; (3) advanced materials businesses expansion; (4) R&D capabilities innovation; (5) manufacturing technology innovation; (6) cost innovation; (7) marketing and sales innovation; and (8) corporate brand strengthening.

**Aiming to Be Socially Responsible Toray**

From the 1990s, the number of corporate scandals both in Japan and abroad jumped. That was the background to Toray’s moves to completely eradicate misconduct, such as setting up the Corporate Ethics Committee in 1997 and establishing the Corporate Ethics and Legal Compliance Code of Conduct (eight rules) in 2003, then compiling them into a *Corporate Ethics and Legal Compliance Handbook* for distribution. It was also around this time that corporations were strongly urged to bolster the transparency and accountability of company management through activities relating to compliance, investor relations and CSR, and to put in place governance frameworks.

CSR, the broadest concept, touches on the actual reason corporations exist and entails activity to ensure that a company can achieve sustained growth for the next 100 years while remaining an entity respected by society. Tracing Toray’s roots brings us to the Mitsui family and their
origins in Japan’s former Omi Province (now Shiga Prefecture), which also happens to be where Toray was founded. Omi merchants followed a business code referred to as sanpo yoshi (lit. good three ways), signifying that business would begin to thrive only when it benefited the seller, the buyer, and all of society. It is a philosophy consistent with CSR today. With roots embedded in such a philosophy, Toray has attached importance to contributing to economic development and giving back to society—in other words, to the company’s position as a public institution and its role in society—ever since its founding. The company principles, established in 1955, declared, “Toyo Rayon contributes to communities,” a statement clearly expressing this managerial principle. It is a principle that lives on within Toray to this day, as incorporated into the Corporate Philosophy defined in 1986: “Contributing to society through the creation of new value with innovative ideas, technologies and products.”

Toray first expressly addressed the CSR concept in 2003 with the formation of the group-wide CSR Committee. In January the following year, Toray established and released its Information Disclosure Principles, followed by a set of CSR Guidelines and associated action programs in December. Also that year, the company expanded the scope of reporting of its Environmental Report, which was first issued in 1999, and started publishing a CSR Annual Report.

Transformation into Toray, Leader in Advanced Materials

As a subtitle for NT-II, launched in April 2004, Toray used the expression, “Toray—The Leader in Advanced Materials.” The company initiated a project to expand advanced materials business. Advanced materials
at the time referred to materials supplied to the domains of IT-related products, life sciences, and environment, safety, and amenity that were technologically highly innovative. Consolidated sales for the advanced materials business in fiscal 2003 had come to 344.1 billion yen, accounting for 31.6 percent of total net sales. Consolidated operating income was 32.2 billion, or 56.7 percent, meaning that in profit terms, the business already accounted for more than half. However, Toray wanted to expand the business further and decided to prioritize allocation of resources to advanced materials business, the target being 50 percent of consolidated capital expenditure.

In September 2006, Toray held the Toray Advanced Materials Symposium, inviting a number of notable public figures, including laureates of the Nobel Prize in Chemistry, as lecturers, and the Toray Advanced Materials Exhibition, introducing Toray’s products and activities, at the Tokyo International Forum as part of 80th anniversary commemorations. The drawcard for the exhibition was a life-size (six-meter diameter) model of a fuselage for Boeing’s next-generation airliner, the Boeing 787, which made use of carbon fiber “Torayca” in primary structural materials.

IT-2010, launched in October 2006, also made expansion of the advanced materials business a basic strategy and Toray set out to do
just that. Over the five years from 2006, Toray planned 600 billion yen in capital expenditure, half of which was to be invested in strategically expanding and developing businesses, primarily advanced materials. In R&D, which was to receive 240 billion yen in investment over five years, 80 percent of R&D resources were to be allocated to advanced materials. Toray thus aimed to become a global leader in advanced materials.

The following are some of the achievements of activities in the advanced materials business so far.

In the carbon fiber composite materials business, Toray Carbon Fibers America, Inc. (CFA, now Toray Composite Materials America, Inc. (CMA)) was established in Decatur, Alabama, in the U.S., in May 1997 to produce and sell carbon fiber, Torayca. With that, Toray had in place a three-region global operation spanning Japan, Europe, and the U.S. In May 2004, Toray entered a basic agreement relating to the long-term supply of unidirectional carbon fiber prepreg for primary structural components of the Boeing 787. Then in April 2006, the company signed a comprehensive long-term supply agreement lasting 16 years (with a five-year option) starting in 2006, including an additional order for carbon fiber cloth prepreg for fuselages. The Boeing 787 employed carbon fiber composite materials for almost all its structural materials, which accounted for more than half of the weight of the entire aircraft. Therefore, around 35 tons of
Torayca prepreg was expected to be used per plane. To accommodate the business, a decision was made to expand carbon fiber facilities and establish a new precursor facility at CFA. By 2006, Toray had put in place a system of integrated production in the U.S. covering precursors through to carbonization.

In the electronics and information-related products business, Toray entered the plasma display panel (PDP) business. In 1998, Toray developed a photosensitive paste method for forming barrier ribs on PDP rear panels and established its own unique rear panel manufacturing process in 2000. Matsushita Electric Industrial Co., Ltd. (now Panasonic Corporation) took an interest in Toray’s technology and the two companies agreed in September 2000 to team up in the PDP business. As plasma displays offered a fast response time, wide viewing angles, and excellent color reproduction, facilitating large-screen designs, plasma televisions were viewed as a potentially big business. In October, Toray and Matsushita established joint venture Matsushita Plasma Display Co., Ltd. (investment ratios: Matsushita 75 percent, Toray 25 percent; renamed Panasonic Plasma Display Co., Ltd. (PPD) in October 2008). PPD carried out integrated PDP production through to the finished product, with Toray providing the rear panel manufacturing technology. Despite successive production hikes and growth in plasma televisions’ global market share, that global share was quickly eroded as plasma televisions were pushed out by LCD televisions due to technological innovation that saw the latter become larger, thinner, and more energy-efficient, with higher resolution, and improved cost performance. At the end of 2013, PPD discontinued plasma television production and ceased operations at the end of March 2014.
In the water treatment membrane business, Toray developed a “two-stage RO (reverse osmosis)” seawater desalination system and then commercialized a low-fouling RO membrane, energizing orders of products for wastewater reclamation plants, too. In other activities, Toray commenced R&D related to ultrafiltration (UF) membranes in 1990, as well as microfiltration (MF) membranes and membrane bioreactor (MBR) processes in 1996, and the company’s successful product lineup allowed it to provide integrated membrane systems. Toray established the Water Treatment Division in 1999, and Toray Membrane America, Inc. (TMA) in the U.S. together with U.S. firm Ionics, Inc. and Mitsui & Co. (U.S.A.), Inc. in 2000, while also investing in Ropur AG of Switzerland. In September 2002, Toray entered a capital and business partnership with Suido Kiko Kaisha. The following year, Toray gained the controlling interest of Ropur, renamed it Toray Membrane Europe AG (TMEu) in 2004, and worked to expand the market in Europe, the Middle East, and North Africa. In 2005, the Global Sales Team was formed, and in 2006, Toray Membrane USA, Inc. (TMUS) was established as a wholly owned subsidiary, moving development of the U.S. market into top gear.
Development of New Products and New Supply Chains
—Joint Development with UNIQLO

In the 1990s, the import penetration rate for apparel products in Japan was approaching 80 percent. In order to sustain and strengthen the domestic textile industry, urgency was required in accommodating structural change and undertaking structural reform of logistics, which had been an outstanding issue for many years.

The relationship between UNIQLO Co., Ltd. and Toray began in 1999 with sales of apparel; specifically, outerwear made with Toray materials. In early 2000, UNIQLO expressed a wish to “work together with Toray on filament yarn, staple fiber, spun yarn, and textiles, too.” After some deliberation, the Toray Group commenced supply of polyester padding for cold weather outerwear and polyester spun yarn for fleece jackets that same year, including from overseas bases. In May, a new Global Operations Promotion Department (now Global Operations Department) was established as a unit dedicated to providing a comprehensive, one-stop service to UNIQLO. Toray believed that strengthening the partnership between the two companies would bring about fundamental reform of logistics structure through the creation of a total industry unifying retail and manufacturing, thereby enabling UNIQLO and Toray to operate together as a virtual company.

The ultimate accomplishment of UNIQLO and Toray together was ‘Heattech,’ which began with the launch of moisture-absorbing, heat-generating, and heat-retaining innerwear for autumn and winter 2003. Strong requests for a soft texture, however, led to the creation of Heattech, combining four materials—acrylic, polyester, rayon,
and ‘Lycra’—in 2006 after repeated trial and error. Dyeing of the four types of material posed some difficulties, but once the dyeing technology was established, this four-way blend achieved the functionality the customer was looking for and was the originality behind the unassailable Heattech brand. Heattech both opened up the new market of synthetic men’s innerwear and carved out a market around a new concept of heat-generating, heat-retaining innerwear, for women, too. Heattech functionality did not stop at heat generation and retention. Each year, new and improved products were introduced, with new functions, such as moisture retention, stretching, shape retention, and static reduction, and production volume increased. To accommodate this, additional quality assurance and production facility expansions would have to be simultaneously implemented throughout the integrated production system from filament yarn to sewing, which would have been impossible without Toray’s leadership in controlling production teams.

In March 2006, UNIQLO and Toray sought to make their activities more robust by signing a mid- to long-term comprehensive procurement and supply agreement, followed by an implementation plan in June, before announcing the strategic partnership at a joint press briefing. Through this agreement, the two companies bridged the boundary between material manufacturer and specialty store retailer of private label apparel (SPA), and put in place a product development framework encompassing all steps from materials through to sales of the finished product.

Alongside these activities, the Toray Group took steps to establish a global supply framework, including expansion of production centers in ASEAN countries and Bangladesh in addition to China. As a result,
material and product supply to UNIQLO reached 250 billion yen, higher than planned for the five years 2006 to 2010, and measures advanced into a second phase. Total business over the five years of stage two spanning 2011 to 2015 came to 600 billion yen, and in November 2015, UNIQLO and Toray reached agreement on a third stage and expanded their business target to more than one trillion yen over the five years from 2016 to 2020.

Such groundbreaking efforts, supported by a global production structure, resulted in major hit products such as Heattech, ‘Ultra Light Down,’ and ‘Airism’ (all Fast Retailing Co., Ltd. trademarks).