

Results by Segment for Fiscal 2020

事業概況
Segment Information

Segments

Summary of Financial Results

Fibers & Textiles

The segment was affected by the stagnation in production activities and consumption behavior caused by the COVID-19 in Japan and overseas. In the apparel applications, demand declined due to lockdown and excessive channel inventory in various countries, while in industrial applications, general purpose materials remained weak and sales volume declined. Demand for nonwoven fabrics increased for the applications of medical gowns and masks and there have been signs of recovery in the automotive applications from the third quarter, but these factors fell short of offsetting the decline in the overall sales volume in the segment.

Performance Chemicals

The resins business was affected by the stagnation in production activities caused by the COVID-19, but demand has been strong since the third quarter with automobile manufacturers operating and the recovery of the Chinese economy. The chemicals business saw a recovery trend in the basic chemicals market. In the films business, battery separator films for lithium-ion secondary batteries were affected by lower market prices, while polyester films for optical applications and electronic components performed strongly. In the electronic & information materials business, OLED-related demand increased.

Carbon Fiber Composite Materials

While the sales of wind turbine blade applications remained strong in industrial applications, aerospace application was affected by the decline in the production rate of commercial aircraft.

Environment & Engineering

In the water treatment business, demand for reverse osmosis membranes and other products grew strongly on the whole, while shipment to some regions were affected by the COVID-19. In the environment and amenity business, demand for air filters was strong.

Among domestic subsidiaries in the segment, an engineering subsidiary experienced decreases in the shipment of some electronics related equipment. A construction subsidiary posted profits from completion of a real estate project.

Life Science

In the pharmaceutical business, sales of pruritus treatment REMITCH™* were affected by the introduction of its generic versions as well as by a major NHI drug price revision in April 2020.

In the medical devices business, shipment of dialyzers grew strongly in Japan and overseas, despite the impact of medical institutions postponing non-urgent operations due to the spread of the COVID-19.

*REMITCH™ is a registered trademark of Torii Pharmaceutical Co., Ltd.

Performance (Billion yen)

* The figures in parentheses of each segment are composition ratios by segment.

Main Products



Core Operating
Income
36.6

- Filament yarns, staple fibers, spun yarns, woven and knitted fabrics of nylon, polyester, acrylic, and others
- Nonwoven fabrics
- Nonwoven material created using ultra-fine fibers in an "Island in the Sea" configuration
- Apparel products, etc.



Core Operating
Income
67.0

- Nylon, ABS, PBT, PPS, and other resins and molded products
- Polyolefin foam
- Polyester, polyethylene, polypropylene, and other films and processed film products
- Raw materials for synthetic fibers, and other plastics
- Fine chemicals
- Electronic and information materials, and graphic materials, etc.



Core Operating
Income
▲7.5

- Carbon fibers, carbon fiber composite materials, and molded products from those materials, etc.



Core Operating
Income
14.5

- Comprehensive engineering
- Condominiums
- Industrial equipment and machinery
- IT-related equipment
- Water treatment membranes and related equipment
- Materials for housing, building, and civil engineering applications, etc.



Core Operating
Income
1.3

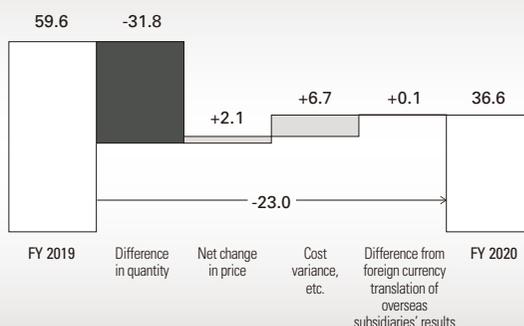
- Pharmaceuticals
- Medical devices, etc.

* Excludes other businesses, equivalent to ¥14.6 billion (1%) in revenue and ¥2.9 billion in core operating income, and adjustment of core operating income of -¥24.6 billion. The composition ratio by segment of core operating income is calculated excluding the adjustment amount.

Fibers & Textiles

Fiscal year	2019	2020	Changes	2021 (Forecast)
Revenue (Billion yen)	831.0	719.2	-13.4%	842.0
Core Operating Income (Billion yen)	59.6	36.6	-38.6%	49.0
Core Operating Margin	7.2%	5.1%		

Changes in Core Operating Income (Billion yen)



Revenue (Billion yen)

719.2

Core Operating Income (Billion yen)

36.6

Core Operating Margin

5.1%

ROA (Core Operating Income/Assets)

4.5%

TOPICS

Effectiveness of MAKSPEC™ V in Combating COVID-19 Confirmed

Toray has developed the MAKSPEC™ V antiviral textile which delivers exceptional durability when washed and comfort when worn. Having succeeded in absorbing the agent within the polyester fibers by means of our unique immobilization technology, MAKSPEC™ V received antiviral certification for enveloped viruses from the Japan Textile Evaluation Technology Council. It also offers excellent commercial laundry washability. Furthermore, in a test conducted in accordance with the JIS standard antiviral test for textile products, for which COVID-19 (SARS-CoV-2) was used, the virus was attached to the surface. When, after two hours, the concentration of remaining virus was measured, it was confirmed that this had decreased by 99.9% or more, similar to the test results using other enveloped viruses. Taking advantage of these features, we are expanding into a wide range of fields which have high needs for this effect, from uniform applications, such as customer service clothing, nursing, and school uniforms, to sports, casual apparel, fashionwear, and children's clothing.

Fibers & Textiles Business



General Manager,
Fibers & Textiles Division

Kenichiro Miki

As for the business environment, there is a continued recovery trend in the market, mainly in Europe, U.S.A., and China, where progress has been made with anti-COVID-19 measures. In contrast, the demand structure in some fields, for example fibers and textiles for apparel use, has changed significantly compared with prior to COVID-19 due to changes in lifestyles and consumption brought about by the pandemic.

In fiscal 2020, the fibers & textiles business in general had struggled due to the stagnation of the global economy. However, under the Medium-Term Management Program, Project AP-G 2022 (AP-G 2022) basic policies of the Fibers & Textiles Division—continuously strengthen the business structure; expand in growth regions and growth business fields; and enhance profitability by promoting a differentiation strategy and addressing sustainability—in the nonwoven fabric business, we responded to growing demand in the field of masks and protective clothing and also commenced operations at new PP spunbond bases in China and India. Also, we steadily addressed sustainability issues, such as our efforts with the &+™ brand that makes use of recycled polyester (PET) bottles.

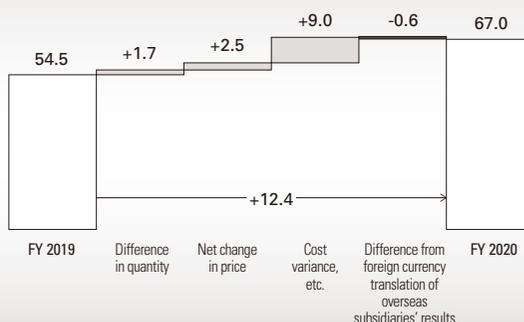
In fiscal 2021, the challenges of the Fibers & Textiles Division are to capture demand that is recovering on a global basis and to return to the growth trajectory that the Division was aiming for under the medium-term management program, by accurately responding to new market needs in an era in which the Company coexists with COVID-19. We will continue to promote AP-G 2022 initiatives such as business expansion in growth business fields and regions and enhancement of profitability by promoting a differentiation strategy, driven by airbags, nonwoven fabrics, nonwoven material created using ultra-fine fibers, and integrated business from fiber to textiles and further to garments. Also, we will promote business expansion by addressing sustainability, by the expansion of the GR businesses, which are centered on energy saving materials, biomass, and recycling, to help address global environmental problems, and the LI businesses centered on the medical and healthcare fields.

To all shareholders and investors: Going forward, by freely utilizing and combining the strengths of Toray's fibers & textiles business of (1) technological development capabilities and variety of products; (2) customer responsiveness in supply chains comprising of fibers, textiles, and garments; and (3) global business network, we will provide solutions to our customers and aim for sustainable growth that adapts to changes in the world through the world's only "three-dimensional business development."

Performance Chemicals

Fiscal year	2019	2020	Changes	2021 (Forecast)
Revenue (Billion yen)	761.2	720.4	-5.4%	890.0
Core Operating Income (Billion yen)	54.5	67.0	+22.8%	89.0
Core Operating Margin	7.2%	9.3%		

Changes in Core Operating Income (Billion yen)



Revenue

(Billion yen)

720.4

Core Operating Income

(Billion yen)

67.0

Core Operating Margin

9.3%

ROA

(Core Operating Income/Assets)

6.6%

TOPICS

Sales of Environmentally-Friendly Ecouse™ Series PET Films Launched

Toray has started sales of the Ecouse™ series of environmentally-friendly films, for which polyester (PET) films from electronic component applications are collected and reused. Previously, the films from electronic components had been mainly treated as waste or used in thermal recycling. Now, by combining mechanical recycling* process technology, which removes a wide variety of coating materials and resins from film surfaces, with foreign matter removal technology for each manufacturing process, Toray is able to reuse the material in films without impairing its mechanical characteristics or reliability. Toray then collaborated with supply chain companies, built a system to collect and reuse used PET film from electronic component applications and commenced operations. This series of environmentally-friendly PET films could help to lower the consumption of raw materials derived from fossil fuels and waste plastics while reducing CO₂ emissions by up to 50% compared with conventional Toray products.

* A physical recycling method for recycling after crushing and cleaning plastic.

Resins & Chemicals Business



General Manager,
Resins & Chemicals
Division

Nobuyuki Inohara

Business environment: In addition to changes in social systems and industrial structure due to trends such as moves toward a sustainable society, the promotion of ICT applications, the ever-increasing global population, and aging populations, the prolonged COVID-19 pandemic has caused dramatic changes in people's lifestyles. Major countries have declared that they will become carbon neutral by 2050, and moves toward that end are taking shape. These moves include examining the full-scale introduction of carbon taxes, accelerating the shift to electric vehicles (xEVs) by regulations covering the decarbonizing of automobiles, and installing environmentally-friendly materials in automobiles.

Main initiatives: Our key initiatives concern the global expansion of high-performance products in growth areas (for example, next-generation mobility, 5G communications infrastructure, and the medical field), and our aim is to remain a true solutions provider that maintains an awareness that the success of our customers is of paramount importance. I think that the amount by which the Company contributes to the realization of a sustainable society will be the most important yardstick as an added value from now on.

Medium-term management program: With regard to the progress we have made, in the field of resins, demand for electric vehicles and autonomous driving support systems is rapidly increasing in the burgeoning next-generation mobility industry, and new applications for high-performance resins such as PPS are expanding globally. To strengthen product development tailored to local needs, we opened our fifth overseas resin technical center in Germany. In the case of transparent ABS resins, demand for which continues to grow, we expanded the facilities at Toray Plastics Malaysia Sdn. Berhad (TPM) and started operation in May. Demand for transparent ABS resins is also expanding for medical device applications. In the chemicals business, we are expanding the fine chemicals business and expanding the veterinary medicines business outside of Japan. As for measures to solve global environment issues, we are promoting further expansion of our resin recycling business, the reduction of GHG emissions at our plants, and giving consideration to CO₂ reduction with an eye on the entire supply chain, including raw materials.

To all shareholders and investors: We would like to contribute to the realization of a prosperous and sustainable future for all people through our businesses.

Films Business



General Manager,
Films Division

Satoru Hagiwara

Business environment: The key points of the business environment surrounding the films business are sustainability represented by carbon neutrality, which is a major trend of social change, and digital innovation in information and communication are the key points. In terms of sustainability, there are increasing demands for expanding the use of electric vehicles (xEVs), reducing waste plastics, and recycling. In digitalization, electronic circuit components have become more sophisticated and are of higher density due to the expansion of data communication capacity and the advancement of 5G, and demand for MLCC release films, film capacitors, and battery separator films is expanding also for automobiles, which represents a huge market. Toray's strengths lie in our films, which have continued to hold the top share in the value-added field, and demand in fields where they can be utilized will continue to grow.

Main initiatives: The key initiatives concern the realization of global expansion and the promotion of high added-value in growth business fields. To that end, we will enhance quality and strengthen development in anticipation of market demand, and strengthen our efforts and initiatives in collaboration with our customers with the aim of creating a sustainable society.

Medium-term management program: As part of our capital investment to meet growing demand in growth business fields, we have increased the capacity of our polypropylene (OPP) film manufacturing equipment for automotive capacitors at our Tsuchiura Plant, lithium-ion battery separator manufacturing equipment in Hungary, and OPP film manufacturing equipment for food packaging in the U.S.A., and expanding our market share. On the development side, we installed a dedicated film development machine at the Mishima Plant to strengthen our ability to develop high-performance films. In order to realize a sustainable society, we are also building a recycling system with customers who collect and reuse used PET film, and developing the Ecouse™ series of environmentally-friendly PET films.

To all shareholders and investors: The Films Division will continue to contribute to the sustainability of society and innovation in digitalization by implementing in society in the form of products with the No. 1 technological and development capabilities that have been cultivated over its 60-year history.

Electronic & Information Materials Business



General Manager,
Electronic & Information
Materials Division

Hiroshi Enomoto

Business environment: Against the backdrop of the spread of the COVID-19 infections and the prolonged trade friction between the U.S.A. and China, insufficient supplies of semiconductors and peripheral parts became apparent in some areas. However, due to the increase in global demand for electronic products brought about by factors that include the deployment of remote working methods as well as developments in IoT and DX, Toray recorded steady increases in sales of its advanced electronic materials, which support the fields of information, communication, and electronics, including semiconductors, electronic components, and displays.

Main initiatives: In addition to further sales expansion of products that are performing strongly, such as materials for OLED displays and materials for semiconductors and electronic components, one key initiative is to steadily introduce high value-added applications and enter new growth fields. Other key initiatives are the promotion of drastic cost reductions by innovating production processes and the utilization of DX, and rapid and timely new product development that anticipates needs by the putting in place of flexible technological development capabilities.

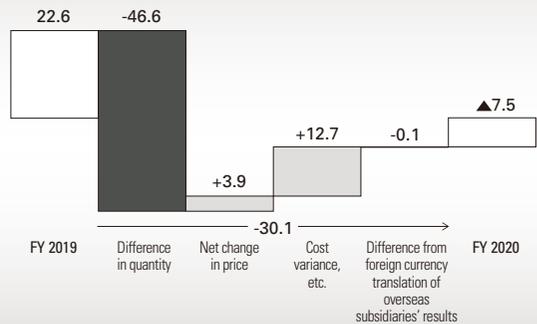
Medium-term management program: With regard to the progress we have made, in addition to materials related to OLED displays, which is a growth business field, sales of semiconductor and electronic component materials centered on the new 5G communications standard are steadily expanding. Also, we are focusing on expansion into the energy-related materials, environmentally-friendly products, and life innovation fields, and will further accelerate these efforts.

To all shareholders and investors: The Electronic & Information Materials Division will utilize Toray Group's advanced core technologies in the creation of high value-added electronic materials that meet new customer requests. Through the supply of these materials, we will strengthen the partnerships with its customers while realizing business expansion that is both sustainable and environmentally friendly.

Carbon Fiber Composite Materials

Fiscal year	2019	2020	Changes	2021 (Forecast)
Revenue (Billion yen)	236.9	182.9	-22.8%	213.0
Core Operating Income (Billion yen)	22.6	▲7.5	—	▲2.0
Core Operating Margin	9.5%	—		

Changes in Core Operating Income (Billion yen)



Revenue (Billion yen)

182.9

Core Operating Income (Billion yen)

▲7.5

Core Operating Margin

—

ROA (Core Operating Income/Assets)

—

TOPICS

Concluded Agreements to Supply Carbon Fiber Composite Materials for “Flying Cars”

Toray concluded an agreement to supply carbon fiber composite materials for use in the Lilium Jet, which is under development by Lilium GmbH of Germany. One of the companies spearheading the quest to develop Urban Air Mobility (UAM) vehicles, which are referred to as “flying cars,” Lilium is aiming to start commercial operations in 2025. They are promoting the development of the small, all-electric, five-seat, vertical take-off and landing (VTOL) aircraft Lilium Jet that will fly at speeds of 300 km/h or more. Carbon fiber composite materials will be employed for its fuselage, main wings, rotor vanes, and other structural components. In addition, Toray Advanced Composites, a Toray subsidiary, has signed a long-term supply contract for carbon fiber composite materials for the UAM being developed by Joby Aviation, Inc. in the U.S.A. This is also a small, all-electric, five-seat VTOL aircraft that will fly at speeds of 300 km/h or more. Carbon fiber composites are being used, for example, in its structures, propulsion system, and interior parts, with the goal of starting commercial operations in 2023 at the earliest. UAMs are expected to provide a new transportation system that will help to resolve the problems of traffic congestion, noise, and air pollution in urban areas. Toray is working on the development of innovative composite materials to enhance performance, conserve energy, and lower the cost of these “flying cars” while deepening its collaboration with their manufacturers.

Carbon Fiber Composite Materials Business



General Manager,
Torayca & Advanced
Composites Division

Minoru Yoshinaga

Business environment: Due to a significant decrease in demand for commercial aircraft, the business environment has become severe. However, against the backdrop of increasing awareness of sustainability and environmental needs and the mobility revolution, developments in new growth areas, such as wind turbine blades, fuel cell vehicles and “flying cars” or Urban Air Mobility (UAM), are accelerating, and demand for carbon fiber in these areas is expanding. In addition, with increasing health consciousness, demand for sports applications, such as bicycles, fishing rods, and golf shafts, is steadily increasing.

Main initiatives: As recovery in the aircraft market is expected around 2024, the key initiative for the time being will be to actively invest in applications (including wind turbine blades, fuel cell electrodes, pressure vessels, UAM, rockets, and satellites, etc.) for which demand is expanding even during the COVID-19 pandemic. We will also promote strengthening of our business profitability and meeting market needs, through the development of high value-added products, material proposals that extend as far as the molding process for each application, the strengthening of technical services, and further cost reductions, while continuing R&D focusing on next-generation, large-scale growth applications, including aircrafts.

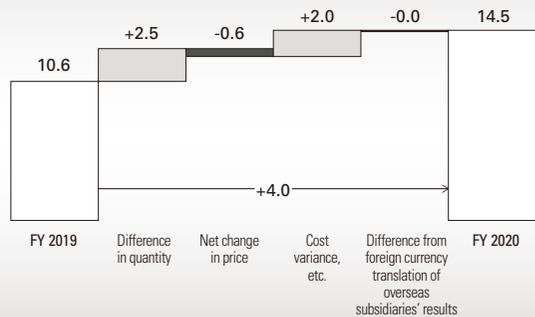
Medium-term management program: Our understanding of the medium- to long-term business environment and the basic strategies have not changed. Having completed facility expansion at the plant in Hungary of Zoltek Companies Inc., the Company is currently promoting the expansion of existing facilities at the company’s Mexico plant and will continue to respond to increasing demand in the years to come. In Japan, the production base of a new plant to manufacture fuel cell electrode substrates (carbon paper, gas diffusion layer) has been established. Progress is also being made with performance improvements and cost reductions in other expanding business fields.

To all shareholders and investors: Toward the realization of a sustainable future society and a mobility revolution, Toray will propose and provide the most suitable materials for problem solving by making full use of the comprehensive strengths the Company possesses in regular and large-tow carbon fibers, thermoset and thermoplastic resins, to our customers worldwide.

Environment & Engineering

Fiscal year	2019	2020	Changes	2021 (Forecast)
Revenue (Billion yen)	190.8	193.5	+1.4%	208.0
Core Operating Income (Billion yen)	10.6	14.5	+37.5%	17.0
Core Operating Margin	5.6%	7.5%		

Changes in Core Operating Income (Billion yen)



Revenue
(Billion yen)

193.5

Core Operating Income
(Billion yen)

14.5

Core Operating Margin

7.5%

ROA
(Core Operating Income/Assets)

5.2%

TOPICS

Consecutive Orders Received for RO Desalination Plants in the Middle East

Investing extensively in infrastructure against the backdrop of population growth, the Gulf states are in particular moving up their seawater desalination plant construction schedules to secure large amounts of drinking water. When newly constructing a seawater desalination plant, reduction of greenhouse gas emissions is taken into consideration, and there are increasing cases of the reverse osmosis (RO) membrane method being adopted over the distillation method, which consumes large amounts of energy. Under such circumstances, in addition to its track record, Toray was highly evaluated for its technical proposals necessary for stable operation. For the Al Dur 2 Desalination Plant in the Kingdom of Bahrain and the Umm Al Quwain Desalination Plant in the United Arab Emirates, Toray received orders for RO membrane that will generate large-scale water production said to total 911,000 m³/day. Umm Al Quwain is one of the world's largest seawater desalination plants using the RO membrane method. Product supply and technical services will be provided by Toray Membrane Middle East LLC (TMME), the Toray Group's local subsidiary. The plants are scheduled to commence operations in 2022.

Water Treatment Business



General Manager,
Water Treatment &
Environment Division

Hiroshi Otani

Business environment: The global market for water treatment membranes temporarily shrank by about 5% in fiscal 2020 due to the impact of COVID-19. In the early months of fiscal 2021, market conditions gradually recovered, mainly in China, Europe, and the U.S.A. Although risk factors remain, such as the spread of COVID-19 variants and soaring raw material prices, there is no change in the trend of strong demand for water treatment membranes in the medium- to long- term.

Main initiatives: In our main business, reverse osmosis (RO) membrane business, we will increase our RO membrane production capacity by 1.7 times during the course of the medium-term management program. This increase comes against the backdrop of growing demand in China, where environmental regulations are becoming more stringent, and in the Middle East, where large-scale seawater desalination plants continue to be built. Our aim is to significantly increase revenue and profits and secure the No. 1 share of the global market through full production and maximum sales expansion. At the same time, we will thoroughly strengthen our competitiveness by continuously launching new high-performance products, promoting cost reductions, and building a strong supply chain. In both the Ultrafiltration (UF) membrane and Membrane Bio Reactor (MBR) module businesses, we will expand sales of new high-performance products launched in fiscal 2019 and reinforce our business foundation.

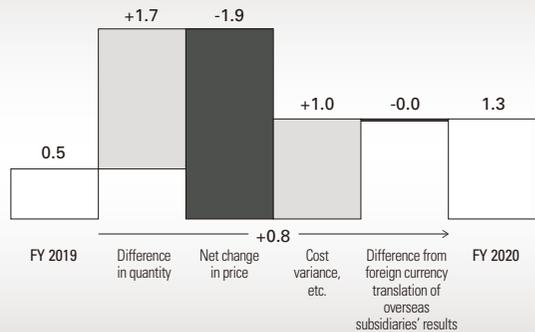
Medium-term management program: We are aggressively operating the business in line with the basic policies and promoting business expansion as planned. In the RO membrane business in fiscal 2020, we achieved significant year-on-year increases in revenue and profits—in an environment in which the global market was shrinking—by making full use of production capacity that had been expanded 1.3 times from the previous fiscal year and by supplying high-performance membranes to large desalination project applications in the Middle East. In the UF and MBR membrane businesses, Toray is further strengthening our global sales structure and promoting sales expansion of new products as planned.

To all shareholders and investors: Toray's water treatment business has been helping to solve water shortages and reduce environmental impact by developing the world's most advanced technologies, which are centered on seawater desalination and wastewater reuse applications. We will continue to expand and meet the diversifying demand for water treatment membranes, while contributing to the realization of a sustainable and prosperous planet Earth by improving water problems.

Life Science

Fiscal year	2019	2020	Changes	2021 (Forecast)
Revenue (Billion yen)	53.0	53.0	-0.1%	52.0
Core Operating Income (Billion yen)	0.5	1.3	+170.9%	1.0
Core Operating Margin	3.8%	2.5%		

Changes in Core Operating Income (Billion yen)



Revenue (Billion yen)

53.0

Core Operating Income (Billion yen)

1.3

Core Operating Margin

2.5%

ROA (Core Operating Income/Assets)

1.8%

TOPICS

VR Platform for Catheter Ablation Procedural Training Developed

Toray jointly developed HotBalloon™ Ablation: A VR Tour with Jolly Good Inc. This visual reality (VR) content is a high-definition version of the SATAKE-HotBalloon™ catheter procedure manufactured and sold by Toray for the treatment of paroxysmal atrial fibrillation. An estimated 720,000 patients are said to undergo atrial fibrillation in Japan. The treatment generally necessitates advanced operative procedures. A physician inserts a catheter treatment device into the body and uses X-ray fluoroscopy to visually guide the instrument to the treatment site in the heart. The COVID-19 pandemic has made it difficult to observe the procedure at facilities that use the HotBalloon™. In the medical field, there was a need for a tour tool that did not involve the movement of physicians and avoided people crowding in a clinical environment. Under such circumstances, the VR content developed on this occasion provides an opportunity for hands-on learning with a sense of realism—as if the participants were watching the actual operating procedure right next to the physician—wherever and whenever they want and as many times as they like. The VR content fulfills the role of complementing the traditional on-site training at facilities where the physician uses the HotBalloon™ procedure.

Messages from the General Managers of the Business Divisions

Pharmaceuticals & Medical Products Business



General Manager,
Pharmaceuticals & Medical
Products Division

Hirofumi Kobayashi

Business environment: Due to the COVID-19 pandemic, responding to new lifestyles and improving infectious disease controls and medical systems have become major social issues. As the highest priority, we prioritize social contribution through the stable supply of products and services mainly in the dialysis and emergency field and through prompt responses to government requests. For the business as a whole, due to NHI drug price revisions and lower insurance reimbursement prices, the market entry and widespread acceptance of generic products, and the emergence of alternative drugs and treatments, the situation, including that of prices, remains severe. Also, we are promoting business structural reforms and medium- to long-term strategies (overseas business development, applications expansion, new businesses).

Main initiatives: Based on the development of products and services with an eye on the end of the COVID-19 pandemic and for the era of co-existing with COVID-19, the key initiatives are: (1) in the pharmaceutical business, business development of existing products and expansion of indications outside Japan; (2) in the medical devices business, expanding and improving the applications of existing products and reducing costs, launching and expanding sales of improved Hotballoon™ Catheter (HBC) products; (3) sophistication and adding high-value to the dialysis business; and (4) in launching the diagnostic drug business as the next mainstay business, we will implement measures to increase the probability of success. At the same time, we are targeting a total solution business that utilizes DX and AI with the aim of improving the QOL of patients and reducing the burden on medical professionals.

Medium-term management program: The development of our pharmaceutical business in China is progressing steadily amid delays in domestic and overseas clinical trials brought about by the COVID-19 pandemic. We have medical products in four areas—acute blood purification, cardiovascular, cancer and interventional radiology, and optical. We made a contribution amidst the COVID-19 pandemic, expanded the applications of emergency and critical care medicine business, and started clinical trials of new products. The dialysis business is driving the entire business through its advanced dialysis performance and high added-value. In the next mainstay business of diagnostics, we are steadily promoting the measurement of cytokines, which has been attracting attention in the COVID-19 pandemic, and preparing approval applications for cancer diagnostics.

To all shareholders and investors: While making social contributions to medical care with high-quality products and services following the end of the COVID-19 pandemic and for the era of co-existing with COVID-19, we will enhance the pharmaceutical, medical devices, and dialysis businesses and develop our business outside Japan. We will work to expand our business and improve profits over the medium- to long- term by launching our next mainstay diagnostic drug business.