

Shimadzu Integrated Report 2018

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Contributing to Society through Science and Technology

It all started with an insatiable thirst for science and technology and a strong resolve about what was necessary for the future of Japan.

Around 1875, about 140 years ago, founder Genzo Shimadzu Sr. was involved in manufacturing physics and chemistry instruments needed during that era, while also learning about the latest technologies.

That marks the beginning of our history as the Shimadzu Corporation.

The resolve of our predecessors, in the early period after Shimadzu was founded, to supply what customers needed is still carried on to this day in our current resolve to use science and technology to meet the needs of society and customers and contribute to a more prosperous, safer, and more secure society. Therefore, it can be said that our history is a history of contributing to society.

Today, science and technology is increasingly important for solving the increasingly complex and diversified challenges of society.

Consequently, we will continue to work tirelessly to acquire new knowledge and skills and contribute to society by providing solutions for creating new things and achieving things no one has ever accomplished before.



Founder
Genzo Shimadzu Sr.



Successor
Genzo Shimadzu Jr.

Advancements Based on Creating Shared Value

Shimadzu has continued to grow and develop by constantly satisfying requests received from customers and by providing solutions for challenges in society that underlie those requests.

Societal Challenges

Widespread Use and Advancement in Physics and Chemistry Instruments

During the Meiji Period (1868-1912), as the country was promoting the development of science, technology, and education necessary for establishing a modern industry, there was demand for repairing and maintaining imported educational physics and chemistry instruments and demand for technologies that could be used to manufacture such instruments independently based on local needs.

Value Supplied by Shimadzu

1882
Supplied state-of-the-art educational equipment



Number of physics and other products listed in the catalog:

110

Founder Genzo Shimadzu Sr. established a business repairing and manufacturing physics and chemistry equipment. Business expanded to the point that Shimadzu's product catalog published in 1882 (entitled "Science Equipment Catalog List") listed 110 physics and other products.

Societal Challenges

Serious Environmental Pollution in China

In China, the rapid economic growth in recent years has resulted in increasingly serious environmental pollution. Consequently, stronger environmental regulations have been established in regions with especially significant water pollution, such as establishment of factory wastewater standards and installation of monitoring equipment and data transmission from that equipment.

Value Supplied by Shimadzu

2003
Started production of online TOC analyzers in China



Total unit sales of online TOC analyzers (China)

5,700

In response to wastewater standards and other environmental regulations, Shimadzu developed a TOC analyzer that can accurately detect and transmit data about organic matter concentrations in effluent water, which is used as an indicator of environmental pollution. Shimadzu instruments continue to monitor wastewater quality throughout China today.

Need for a Reliable Power Supply

After Japan opened its borders, it actively adopted new culture from the West, including electric street lights in cities. Once electric power was widely used to power elevators, trains, and ships, a more reliable power supply became necessary.

1897
Started manufacturing storage batteries



Industrial application of storage batteries

First in Japan

In 1897, successor Genzo Shimadzu Jr. created a prototype storage battery commissioned by the College of Science and Engineering at the Kyoto Imperial University, which had been dependent on imported batteries. Later, after continuing research toward developing the first storage battery manufactured in Japan, Shimadzu successfully created a stationary storage battery in 1904. GS Yuasa Corporation continues to operate that business today.

Improving Quality of Life (QOL)

Newborn mass screening, which involves screening for the presence of congenital metabolic disorders using tiny amounts of blood acquired, has been effective in preventing disabilities, but there had been various problems with the Guthrie method that was used for many years, such as with accuracy and examination time.

2011
Contribution to newborn screening by using LCMS



Number of examinations possible with one tandem mass spectrometer system:

60,000

 per year

In partnership with Shimane University, Shimadzu jointly developed the tandem mass spectrometry method, which uses LCMS, two mass spectrometer units connected in series. The system is capable of examining 60,000 patients per year, which helps improve the quality of life of patient families.

Radiation Exposure to Radiological Technologists

X-rays and other radiation became an essential means of examining and treating various diseases. However, because X-rays can cause various radiation-related disorders, the exposure risk to radiological technologists directly involved in examining or treating patients was becoming an issue.

1961
Developed the world's first remote-controlled X-ray fluoroscopy system



Radiation exposure to radiological technologists

Zero

In 1961, Shimadzu jointly developed the world's first remote-controlled X-ray fluoroscopy system, in partnership with Matsushita Electric Industrial Co., Ltd. (Panasonic Corporation today). The ability to perform all operations from a separate room meant that radiation exposure to radiological technologists could be avoided.

Early Detection of Cancers

Breast cancer is the most common form of cancer diagnosed in Japanese women. However, because the five-year survival rate for breast cancer can exceed 90% if the cancer is detected and treated early, during stage I or II, there is a need for supporting the early diagnosis and rapid treatment of diseases.

2014
Developed dedicated breast PET systems



Performance compared to conventional PET systems:

More than double

The Elmammo, Japan's first dedicated breast PET system developed by Shimadzu, offers about two times the resolution and about ten times the sensitivity of whole body PET systems and is capable of visualizing cancers as small as about 5 mm. It causes no pain and contributes to early diagnosis through breast examinations.

Formation of limited company
Established

(FY) 1875 1917 1945 1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2017

Net Sales Note: Values are indicated on an unconsolidated basis until FY 1999 and on a consolidated basis from FY 2000.

(Billion yen)
- 400

- 350

- 300

- 250

- 200

- 150

- 100

- 50

Committed to Creating Shared Value for Both Shimadzu and Society by Using Innovative and Advanced Science and Technology to Solve Challenges of Society



Teruhisa Ueda
Representative Director,
President & CEO

Goals of Shimadzu Corporation

Throughout our long 140 year history since Shimadzu was founded in 1875, we have remained committed to "helping create a better international society by identifying core characteristics of societal challenges, confronting those challenges head-on from a scientific perspective, and then using scientific and technical improvements to create a better society," based on Shimadzu's corporate philosophy "Contributing to Society through Science and Technology" and management principle "Realizing Our Wishes for the Well-being of Mankind and the Earth."

Our goal is to utilize science and technology in our particular areas of business, which are human health, safety and security of society, and industrial development, to help build a more affluent society. By doing so, we intend to achieve ongoing growth and increase corporate value.

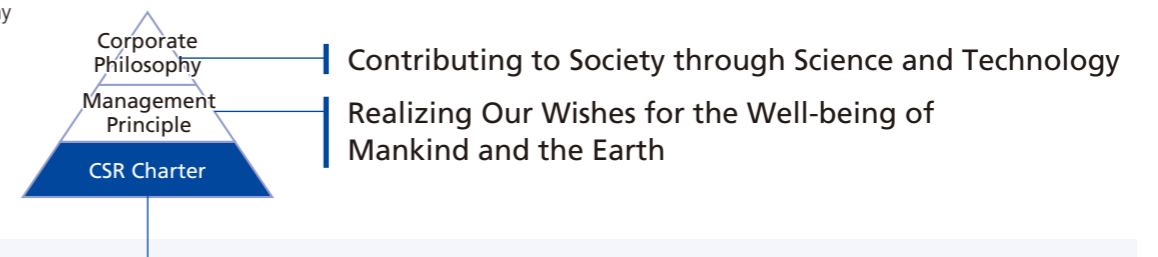
Sharing a Sense of Value

Measures aimed at solving global challenges of society have been accelerating in recent years. For example, the United Nations "sustainable development goals

(SDGs)", which were prepared as a globally shared action plan, and the Paris Agreement on climate change have been enacted and there is increasingly broad adoption of United Nations Global Compact, which is a universal rule for human rights, labor, the environment, and corruption. Given these circumstances, there are major changes occurring in terms of what society expects from companies.

Today, science and technology is becoming more important for solving the increasingly complex and diversified challenges of society. Accordingly, in addition to our corporate philosophy and management principle, we also established a CSR Charter for the Shimadzu Group in 2017. With a particular focus on how Shimadzu business activities relate to solving societal challenges, the charter is intended to promote business activities that are consistent with both solving the challenges of society through business operations (i.e. CSV, which is strategic CSR) and engaging in activities as a responsible member of society (fundamental CSR). Therefore, in the future, more than ever before, we intend to increase our medium and long-term corporate value by managing the company in a manner that contributes to achieving sustained growth for society, based not only on our corporate philosophy and management principle, but also our CSR charter.

■ Ideal Hierarchy



Full CSR Charter

Create a Brighter Future

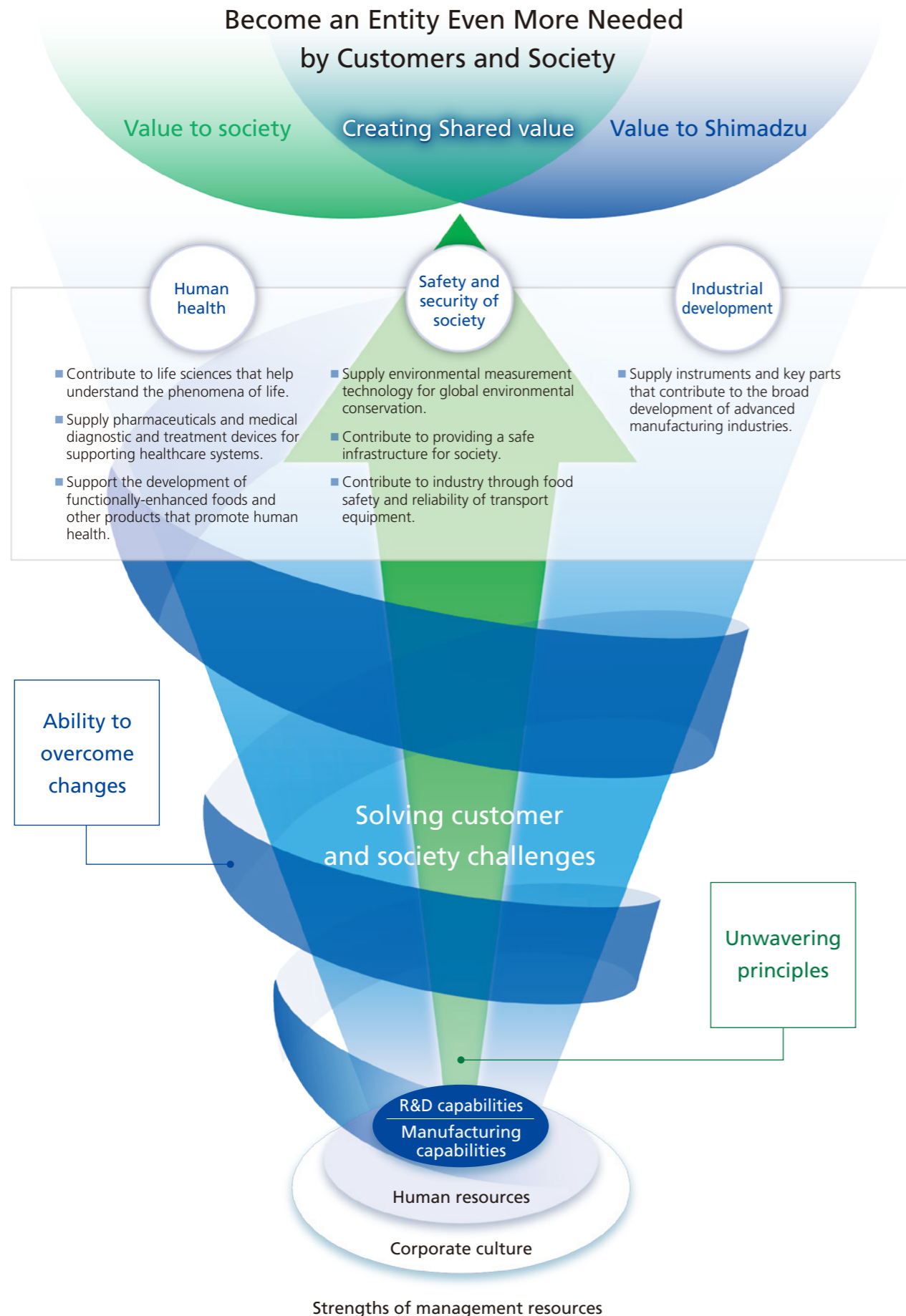
—Solve societal challenges while working towards harmony between the earth, society, and people.—

Based on Shimadzu's corporate philosophy "Contributing to Society through Science and Technology" and management principle "Realizing Our Wishes for the Well-being of Mankind and the Earth," Shimadzu is committed to supplying products and services that meet the requirements and solve the challenges of an increasingly complex and diversified society and to achieving harmony with the global society, by utilizing the extensive wealth of technologies and expertise cultivated over many years of conducting business.

To earn the trust of customers, shareholders, business partners, employees, local communities, and other stakeholders and achieve sustainable growth and development for Shimadzu businesses and society, Shimadzu will engage in company activities and fulfill social responsibilities based on two principles—solve the challenges of society through business operations and engage in activities as a responsible member of society.

- Corporate Governance** To achieve sustainable growth and increase the corporate value in the medium and long-term, we shall establish and improve corporate management systems that ensure management transparency and fairness, and that enable quick and bold decision-making and implementation of measures.
- Practicing Corporate Social Responsibility** Shimadzu shall practice the following: 1. contribute to society, 2. ensure actions are fair and transparent, 3. respect human rights, 4. protect the global environment, and 5. maintain and build relationships with stakeholders (customers, shareholders, business partners, employees, and local communities).
- Accountability** Shimadzu shall disclose information about company activities in a timely, appropriate, and fair manner and cultivate a deeper mutual understanding through dialogue with stakeholders.

Model for Creating Value



Achieving a Sustainable Society and Growth by Creating Shared Value Through Solving Societal Challenges

To achieve a sustainable society and growth, Shimadzu collaborates with various stakeholders throughout the world toward using science, technology, and expanded networks within and outside the Group for not only by solving apparent challenges of customers, but also for actively solving society's increasingly complex and diversified challenges (latent customer challenges). As a result, we intend to continuously create value and become an entity even more needed by customers and society.

Specifically, we will promote creating shared value (value for both society and Shimadzu) through solving societal challenges by selectively prioritizing those targets, from the 169 targets identified for the 17 SDGs created by the United Nations, that are consistent with Shimadzu business activities. In other words, we will implement the Shimadzu Group strategic CSR policy.

Innovation will be very important for that process. Furthermore, generating market results from non-continuous innovations as quickly as possible is a key factor for generating business value that can be offered to global markets. Therefore, we intend to create new value by actively promoting joint research and open innovation work with universities, research institutions, companies, and other external entities. Working together in partnerships with external entities also serves to build mutually beneficial relationships by generating new realizations or additional new joint research projects.

Strengthening Important Shimadzu Management Resources Not Indicated in Financial Statements

Combining diverse types of knowledge, experience, and senses of value provide the source or the new science and technology required by Shimadzu. Therefore, we believe that providing a workplace environment where employees are free to fully utilize their strengths is a necessity for continuing to be a company that attracts talented human resources and that is admired by society. That means the capabilities of human resources are essential for increasing our corporate value based on our corporate philosophy and management principle. Accordingly, the company is engaged in working practice reforms aimed at generating new ideas and managing health, further increasing both organizational and individual productivity, and promoting a goal-oriented approach to achieving sustained growth.

For such outstanding human resources to be able to supply revolutionary products and services, we need to take on the challenge of conducting R&D aimed at acquiring advanced technologies. Furthermore, in addition to a three-pronged strategy approach, consisting of an R&D strategy, business strategy, and intellectual property strategy, we are also deploying a standardization strategy in an effort to lay the foundation for long-term sustained growth.

To ensure we can sensitively identify market trends throughout the world and supply competitive products in a timely manner, we are also building a network of marketing, R&D, and production capabilities closely tied to respective local regions. To ensure customer satisfaction throughout the world, we will use that network to improve quality at all product life cycle stages, including marketing, market surveying, product design, development, production, and aftermarket services.

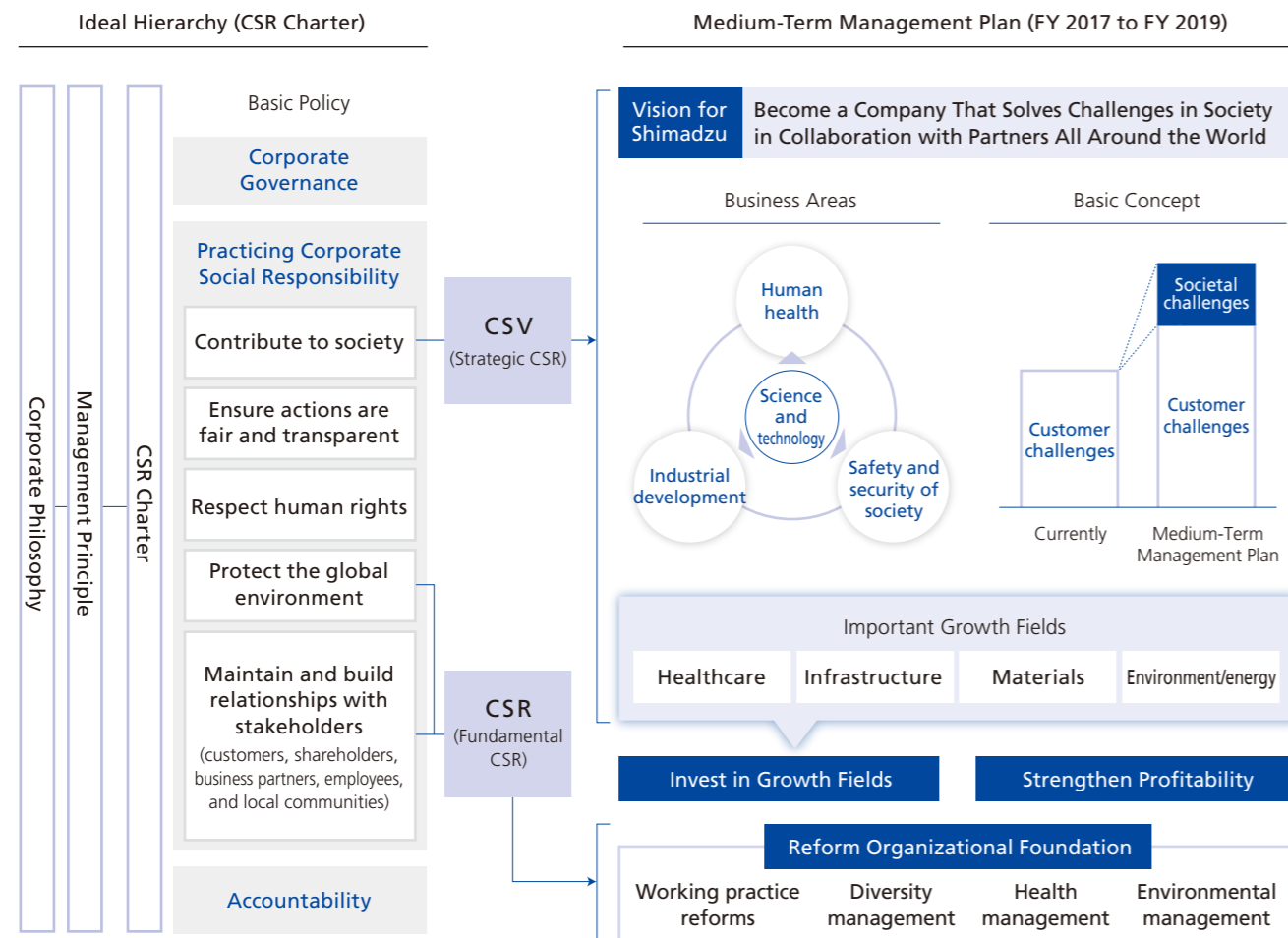
Achieving Sustained Growth for Society and Increasing Medium and Long-Term Corporate Value by Comparing Business Activities to Sustainable Development Goals (SDGs)



▶ For more details, see Contribution to SDGs Through Business Activities on pages 11 to 14.

Introduction from the President

■ How the Medium-Term Management Plan Relates to the Ideal Hierarchy



Medium-Term Management Plan and Corresponding Progress

The medium-term management plan specifies a slogan "Become a Company That Solves Challenges in Society in Collaboration with Partners All Around the World." In that effort, we have identified four growth fields, healthcare, infrastructure, materials, and environmental/energy fields, where we are actively making investments and implementing measures.

For example, in the healthcare field, in addition to individual challenges of healthcare and pharmaceuticals, for example, the field also involves the societal challenges of globally skyrocketing medical costs and aging societies. For such challenges, we intend to use advanced science and technology to offer ultra early diagnosis that can prevent the increasing severity of diseases, provide an opportunity for early treatment, reduce healthcare costs, and extend the healthy life expectancy. In the infrastructure field, we are developing solutions for the ongoing challenge of structural deterioration as infrastructure ages because the considerable time has

passed since it was constructed. In the energy field, which is facing a critical point in discussing energy mix levels, we intend to help solve the challenge of climate change by offering support for research of new environmentally-friendly materials, which also involves the materials field, and support for renewable energy development, for example. When Shimadzu's business opportunities are viewed in light of the United Nations SDGs, opportunities can be narrowed down to a few based on the content of the 17 UN goals. Those serve as our strategic CSR activities.

To improve profitability, Shimadzu also acquired French reagent manufacturer Alsachim SAS to expand the aftermarket business, consolidated Group subsidiaries to strengthen the Industrial Machinery business, and so on. Additionally, we accelerated measures to expand business in the important China market, such as by using the Shimadzu China R&D Division (Shanghai), the Shimadzu China Mass Spectrometry Center (Beijing), the Shimadzu Research Laboratory (Shanghai), which are important development centers for the Analytical & Measuring Instruments segment, to research and develop products tailored to the unique local needs of China.

Optimizing the Capitalization Structure

Our basic capitalization policy involves striving to achieve the optimal capitalization structure for our needs, in terms of financial health, capital efficiency, and so on, while also balancing that with investment in growth for the company's future and returning profits to shareholders. Within that process, one of the key quantitative management targets is maintaining an ROE of ten percent or more.

Investment in growth means investment in R&D intended for expanding market share in growth fields, entering new markets, or for cultivating/acquiring new technologies, ongoing investment in capital equipment for further strengthening technical capabilities that provide the source of competitiveness, and M&A or other investments intended to expand/improve our business portfolio.

Returning profits to shareholders is considered one of our important management policies, with dividend amounts determined based on an overall assessment of profits and cash flow and a basic policy of maintaining stable dividends. We believe that the best method for returning profits to shareholders is maintaining stable dividends by increasing dividends in a stable and sustainable manner without being affected by the results of every year. If the given business conditions are appropriate, we also intend to buy back shares. Through such means, we are targeting a total return ratio of 30 %.

Key Themes in FY 2018

For FY 2018, the second year of the medium-term management plan, the plan emphasizes the following three themes for generating new synergies in various situations by combining resources from within and outside the company and creating new value aimed at achieving additional growth.

Reforms

Incorporate IoT, AI, robotics, and other new technologies, not only in Shimadzu products and services, but also in our routine business processes, to reform the overall Shimadzu Group and continue achieving sustained growth. Shimadzu's history is evidence that protecting traditions requires continuously implementing cumulative reforms according to each era, rather than repeating the same things over and over.

Originality

We now live in an age when companies are expected to not only engage in measures to improve company performance, but also measures to preserve the

environment, solve societal challenges, and strengthen corporate governance. In such an age, it will be difficult to achieve additional growth by simply implementing measures that are comparable to other companies. Therefore, pursuing uniqueness will help achieve Shimadzu's strategy of differentiation from competitors and eventually result in increasing corporate value. One such measure for creating uniqueness to increase corporate value is integrating analytical and medical technologies for healthcare applications, as specified in the current medium-term management plan.

Synergies

With the increasing diversity of customer needs, increasingly serious societal challenges, and rapid advancements in science and technology, it has become important to generate new synergies from researching technologies and businesses within and outside Shimadzu. For example, meeting new needs emerging from the development of automobiles equipped with new technologies, such as self-driving capabilities, will require cooperation between more than one Shimadzu business segment, such as between the Analytical & Measuring Instruments and Industrial Machinery segments. Consequently, in pursuit of creating unprecedented value, we will extend measures beyond our conventional business segment, Group, sector, or other boundaries.

With strategic CSR and fundamental CSR at the core of our management practices, we will face the challenges of society head-on using our strength in science and technology, while also ensuring the health and transparency of management practices. We are committed to applying our full effort toward satisfying the expectations of stakeholders through active dialog and strengthening partnerships and by achieving sustained growth and increasing corporate value in the medium and long-term.



Contribution to SDGs Through Business Activities

SUSTAINABLE DEVELOPMENT GOALS

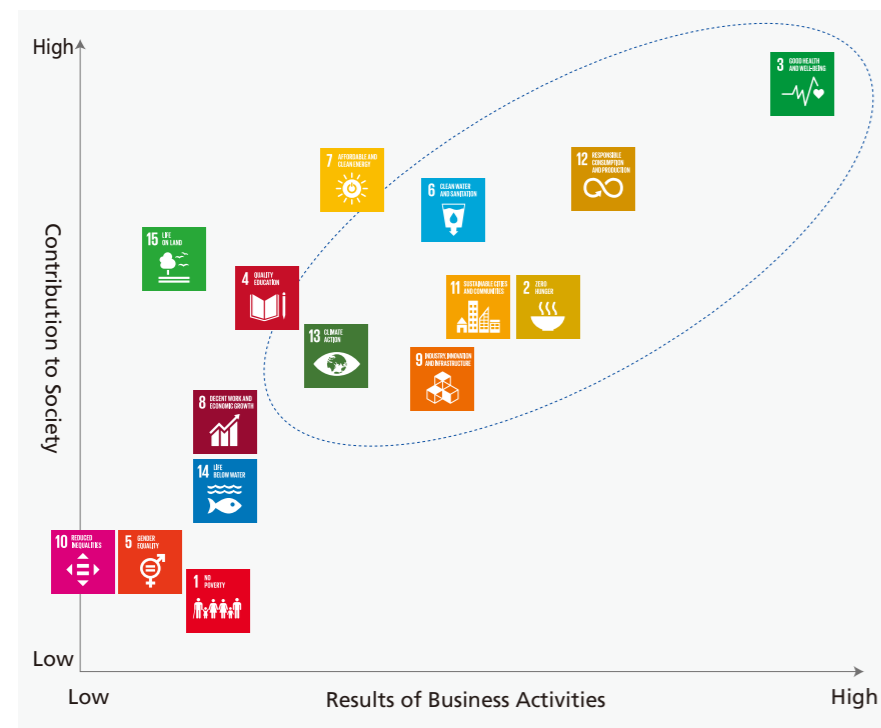


Shimadzu Contribution Thus Far and SDGs

Even before the SDGs were adopted, Shimadzu has been facing societal challenges head-on and has been directly and indirectly involved in solving those challenges through our business activities, based on our corporate philosophy "Contributing to Society through Science and Technology." However, given that the SDGs specify goals and targets in specific terms, we have been making the relationship

between our measures thus far and solving societal challenges more apparent. Doing so has revealed just how many of our businesses are related to societal challenges and involved in solving them, which reconfirms that the direction of our businesses thus far has been consistent with society.

Map of Contribution to SDGs by Businesses



Main SDG Goals to Which Businesses Contribute



Note: SDGs 16 and 17 are excluded because they apply to overall sustainable development.

Results from SDG Target-Level Measures

Target	Targets	Shimadzu Measures Thus Far (Examples)
3 GOOD HEALTH AND WELL-BEING	3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births	<ul style="list-style-type: none"> Contribute to early diagnosis of congenital abnormalities and disease in newborns. Supply diagnostic equipment for newborns.
	3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	<ul style="list-style-type: none"> Improve the accuracy of diagnosing cancer, cardiovascular diseases, and so on and provide treatment support. Provide support for therapeutic drug development. Metabolite analysis for preventive medicine Support the development of functionally-enhanced foods.
	3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	<ul style="list-style-type: none"> Provide support for drug abuse prevention and treatment.
	3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents	<ul style="list-style-type: none"> Provide support for developing self-driving vehicles (millimeter-wave radar film deposition systems used in automotive frontal impact avoidance systems).
	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	<ul style="list-style-type: none"> Detect hazardous chemicals in food and the environment.
6 CLEAN WATER AND SANITATION	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	<ul style="list-style-type: none"> Measure and monitor environmental pollutants and endocrine disruptors in water, air, and soil. Manage wastewater (devices to monitor metal impurities in cleaning processes, such as during semiconductor manufacturing).
7 AFFORDABLE AND CLEAN ENERGY	7.3 By 2030, double the global rate of improvement in energy efficiency	<ul style="list-style-type: none"> Support development of efficient power generation using renewable energies. Support developing new materials for weight reduction of transport equipment. Support activities to reduce energy usage (engine monitor used for developing improved fuels and lower emissions).
11 SUSTAINABLE CITIES AND COMMUNITIES	11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	<ul style="list-style-type: none"> Analyze chemical components and observe the interior of objects to preserve cultural assets.
	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	<ul style="list-style-type: none"> Measure and monitor for environmental conservation and regulatory compliance. Supply systems for measuring substances subject to RoHS Directive. Support development of new environmentally-friendly materials. Support new energy development. (Support development, quality control, and evaluation of lithium-ion rechargeable batteries, fuel cells, etc.) Support development of new materials.
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	<ul style="list-style-type: none"> Measure and monitor environmental pollutants and endocrine disruptors in water, air, and soil. Comply with RoHS regulations for all parts and materials used in products. Develop Eco-Products Plus. (Reduce consumables, reduce size, exclude hazardous substances, etc.)
8 DECENT WORK AND ECONOMIC GROWTH	8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	<ul style="list-style-type: none"> Statement on the UK Modern Slavery Act Measures against conflict minerals Practice CSR activities throughout supply chain.



Overview of Shimadzu Corporation

The following describes the business segments and global business organization through which Shimadzu uses science and technology to contribute to society.

- 16 Current Status of Shimadzu Businesses
- 17 Financial Highlights
- 19 Non-Financial Highlights



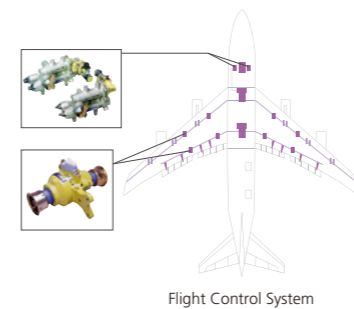
Current Status of Shimadzu Businesses

Sales Ratio by Business Segment (FY 2017)

Aircraft Equipment

We provide cutting-edge aircraft equipment to help ensure safety, improve comfort, and reduce stress.

7%



Flight Control System

Industrial Machinery

We support advanced manufacturing with high-performance key components to help promote industrial development.

12%

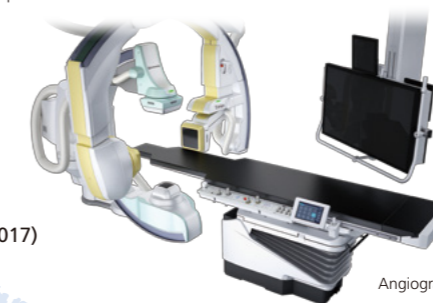


Turbomolecular Pump

Medical Systems

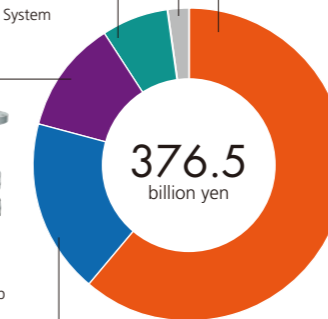
We provide medical systems for supporting accurate diagnoses to help maintain and improve health.

17%



Angiography System

Other
2%



376.5 billion yen

Analytical & Measuring Instruments

We provide high-performance analytical instruments to support research, technology development, and quality control in medical, food, materials, and a variety of other fields.

62%



High-Performance Liquid Chromatograph Mass Spectrometer



Gas Chromatograph

Precision Universal Testing Machine

Sales Ratio by Region (FY 2017)

Other Asian Countries

9%

China

18%

Europe

7%

Americas

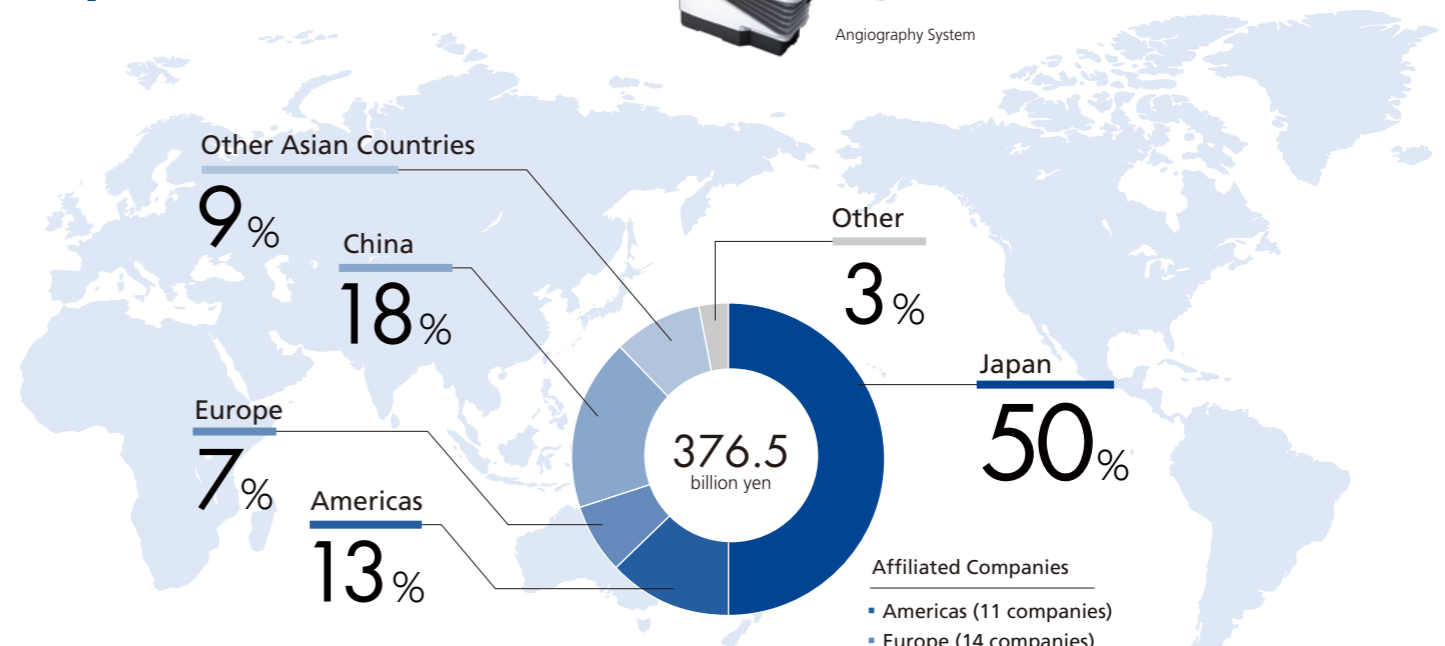
13%

Other

3%

Japan

50%



376.5 billion yen

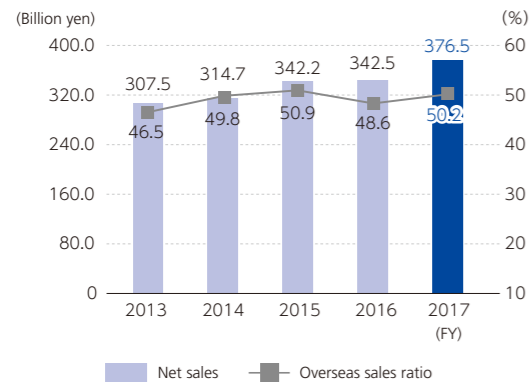
Affiliated Companies

- Americas (11 companies)
- Europe (14 companies)
- China (9 companies)
- Other Asian Countries (13 companies)
- Other (4 companies)

Financial Highlights

Net Sales/Overseas Sales Ratio

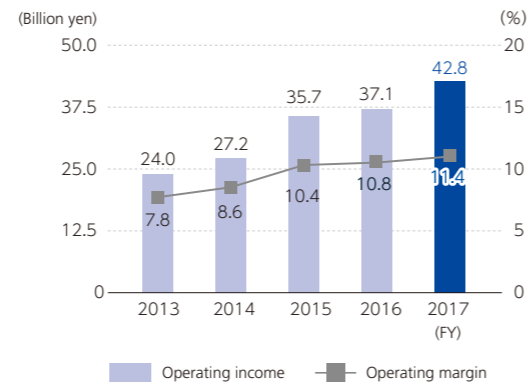
376.5 billion yen / **50.2** %



Net sales increased by 9.9 % (year-on-year) to a record 376.5 billion yen. Growth was well balanced between growth within and outside Japan. Sales increased in all regions outside Japan. Growth was especially high in China.

Operating Income/Operating Margin

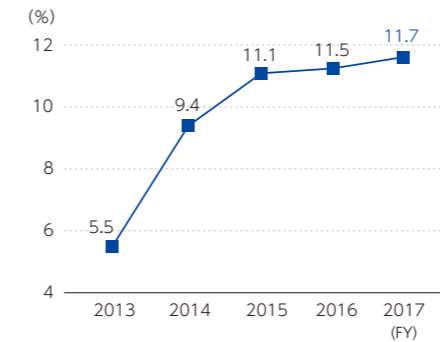
42.8 billion yen / **11.4** %



Operating income increased significantly by 15.5 % (year-on-year) to a record 42.8 billion yen. The operating margin improved by 0.6 points (year-on-year) to 11.4 %, due to further improvements in profitability. It is the fifth consecutive year of achieving a record operating margin.

Return on Equity (ROE)

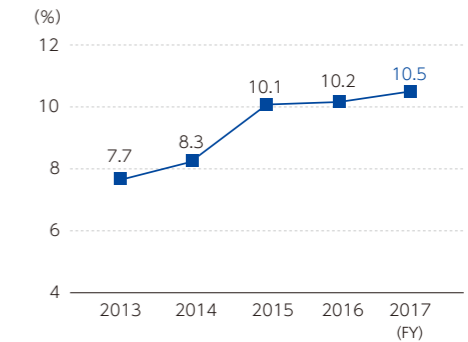
11.7 %



The target ROE of 10 % or more, specified in the medium-term management plan, was achieved. We will continue aiming to ensure the target level.

Ratio of Ordinary Income to Total Assets (ROA)

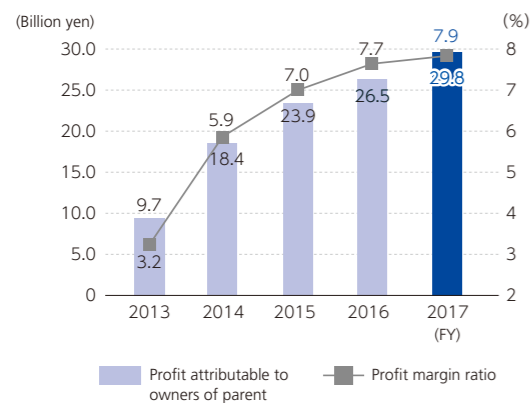
10.5 %



ROA improved 0.3 % (year-on-year). We will continue working to improve the efficiency and profitability of businesses.

Profit Attributable to Owners of Parent/Profit Margin Ratio

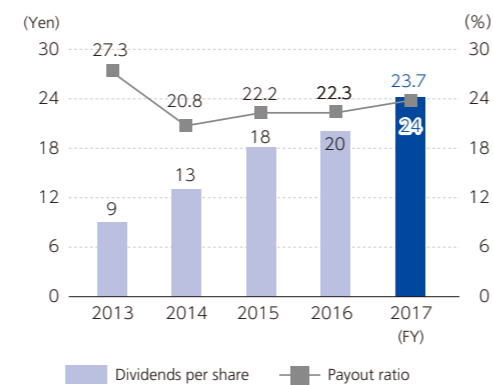
29.8 billion yen / **7.9** %



Profit attributable to owners of parent increased by 12.7 % (year-on-year) to a record 29.8 billion yen. This is the third consecutive year that all performance indicators, from net sales to net income, achieved record levels.

Dividends per Share/Payout Ratio

24 yen / **23.7** %

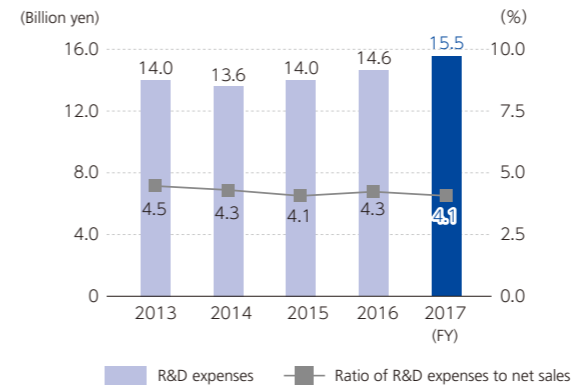


The annual dividend increased 4 yen (year-on-year) to 24 yen per share, which is a combination of the 11 yen interim dividend and the 13 yen year-end dividend. We intend to keep dividends stable while also comprehensively taking into account earnings performance and cash flows when determining shareholder returns.

R&D Expenses (Testing and Research Expenses + Industrial Application Research Expenses) /Ratio of R&D Expenses to Net Sales

15.5 billion yen / **4.1** %

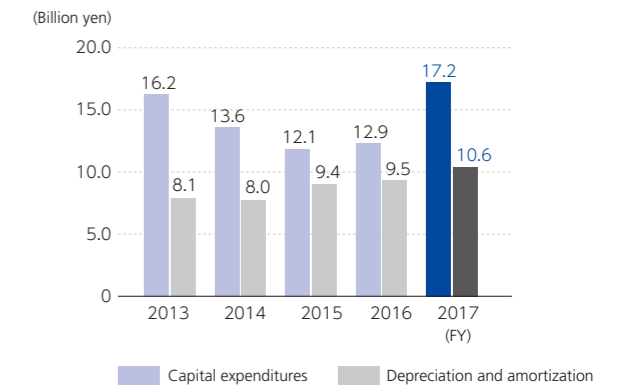
Note: R&D expenses are the total expenses for testing and research expenses (selling, general and administrative expenses) and industrial application research expenses.



R&D expenses increased by 0.9 billion yen (year-on-year), due to active investment in research and development. However, the ratio of R&D expenses to net sales decrease by 0.2 points, because net sales increased. We will continue actively investing in research and development.

Capital Expenditures/Depreciation and Amortization

17.2 billion yen / **10.6** billion yen

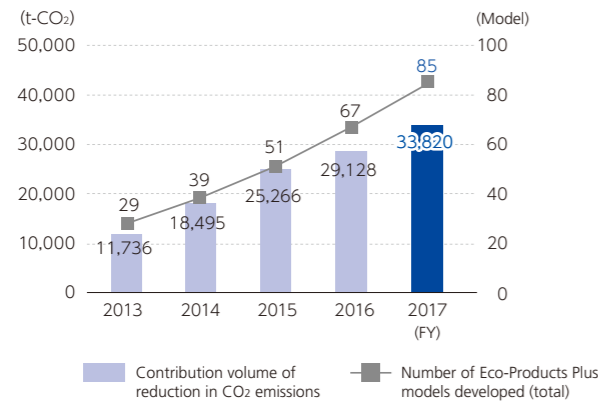


Shimadzu actively invested in capital equipment necessary for achieving the targets specified in the medium-term management plan, including the Healthcare R&D Center currently under construction. As a result, capital expenditures increased by 4.3 billion yen and depreciation and amortization expenses increased by 1.1 billion yen (year-on-year).

Non-Financial Highlights

Number of Eco-Products Plus Models Developed/
Contribution Volume of Reduction in CO₂ Emissions

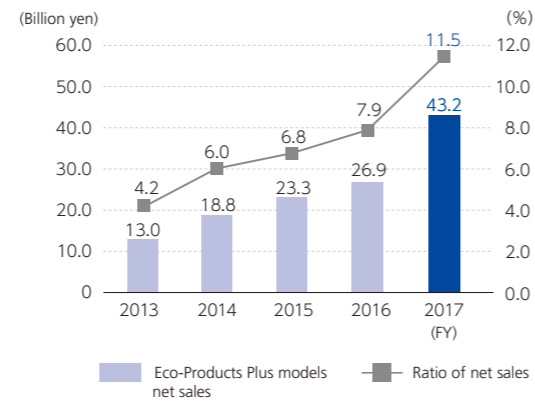
85 models / **33,820** t-CO₂



Product development is based on Shimadzu's own product design guidelines for reducing environmental impact. Products that achieve especially outstanding environmental performance, in terms of lower energy use, smaller size, and/or reduced consumables usage, are certified Eco-Products Plus models. Thus far, 85 models have earned that certification. During 2017, these models reduced CO₂ emissions generated from customer usage by 33,820 tons.

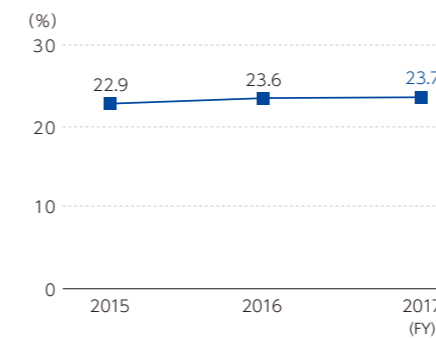
Eco-Products Plus Models Net Sales/
Ratio of Net Sales

43.2 billion yen / **11.5** %



Ratio of Women Full Employees

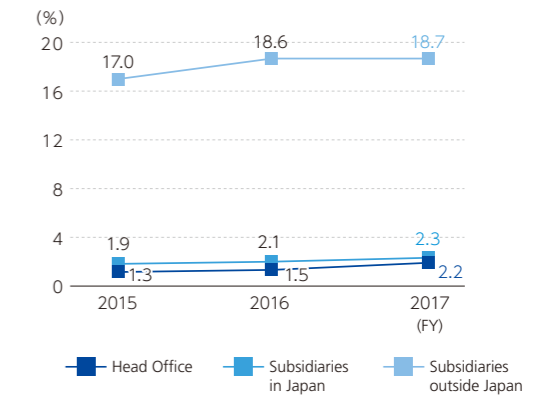
23.7 %



The ratio of women employees in the Shimadzu Group is increasing yearly. We actively promote hiring women full employees and are committed to providing a workplace environment where women employees can fully utilize their abilities.

Ratio of Women in Management Positions
(Head Office/Subsidiaries in Japan/
Subsidiaries Outside Japan)

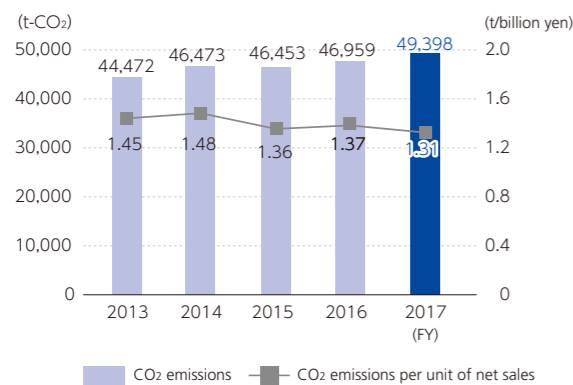
2.2 % / **2.3** % / **18.7** %



Based on our belief that combining diverse types of knowledge or senses of value will provide a valuable source of new science and technology, Shimadzu practices diversity management. Consequently, we plan to increase the number of women in management positions to 5 % (40 managers) by 2020.

CO₂ Emissions/Emissions per Unit of Net Sales

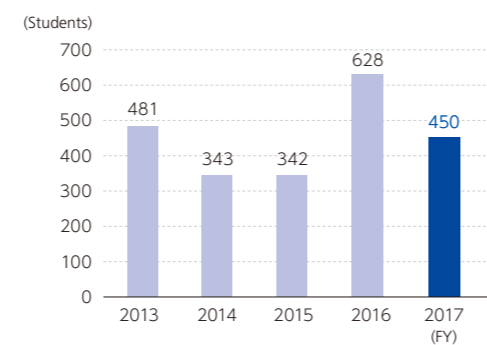
49,398 t-CO₂ / **1.31** t/billion yen



CO₂ emissions from business activities are currently increasing, due to the increase in sales volumes and number of business locations during the last several years, for example, but we are determined to reduce emissions in the future by improving the visibility of environmental management information and proposing and implementing measures consistent with given business conditions.

Number of Students Attending Environmental
Education Classes Offered Outside Shimadzu
(Total from FY 2000 to FY 2017)

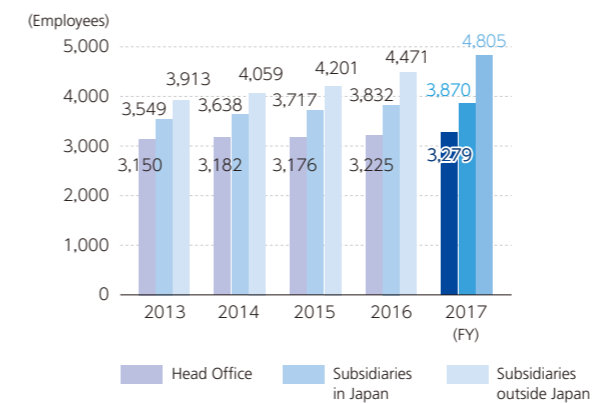
8,344



Environmental education classes are conducted at elementary and junior high schools to increase the awareness of environmental conservation among children. The classes have been especially praised for the unique environmental and social contribution activities conducted using unique environmental education tools that were conceived and created by Shimadzu.

Number of Employees by Region
(Head Office/Subsidiaries in Japan/
Subsidiaries Outside Japan)

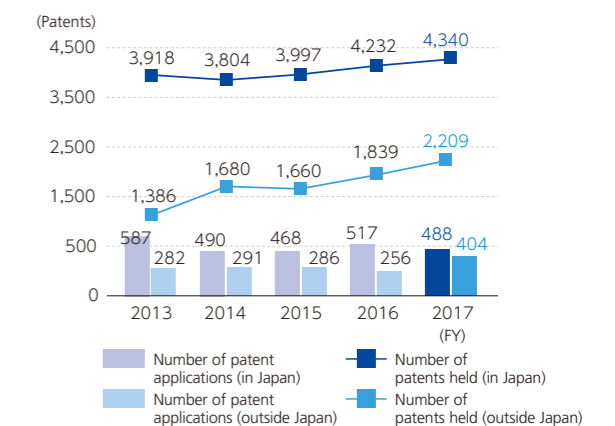
3,279 / **3,870** / **4,805**



Due to our expanding businesses, the number of employees is increasing. In particular, the number of employees is especially increasing at subsidiaries outside Japan, due to increasing sales in markets outside Japan in recent years.

Number of Patent Applications/
Number of Patents Held

488 / **4,340** in Japan
404 / **2,209** outside Japan



Based on our basic policy of creating new value using intellectual property generated from research and development, each year we apply for about 500 patents within Japan and 300 outside Japan. However, the number of patent applications has been increasing annually, with patent acquisition increasing outside Japan as well.



Business Model for Creating Shared Value

To increase corporate value, Shimadzu strives to create shared value that provides value for both society and Shimadzu by engaging in business activities based on our medium-term management plan.

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Business Model for Creating Shared Value

Medium-Term Management Plan (FY 2017 to FY 2019)

As globalization progresses and society challenges become increasingly complex, solutions will require collaborations that extend across a broader range of conventional industrial, administrative, and academic boundaries. Thus far, Shimadzu has offered high quality products based on science and technology and worked in cooperation with customers to develop businesses for solving such challenges. By further expanding that

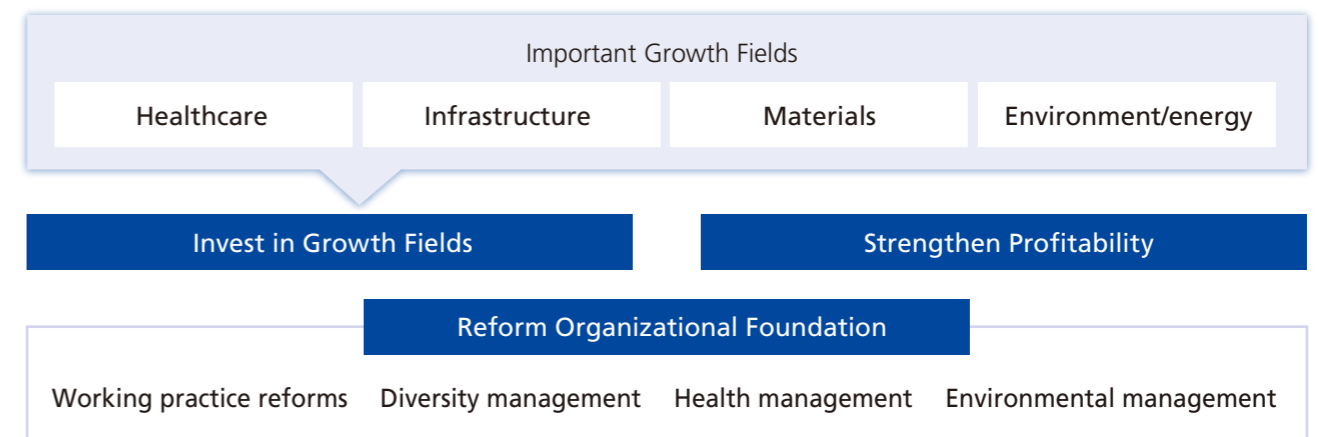
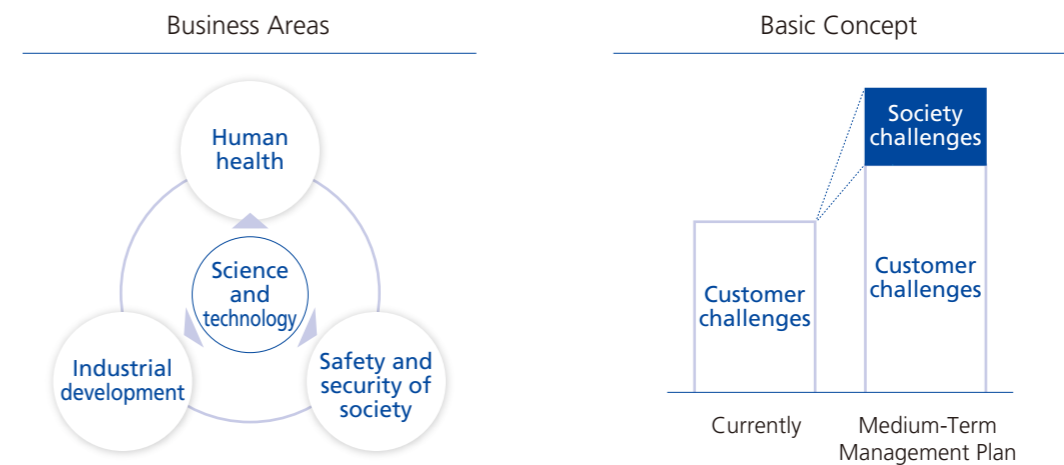
approach to solve not only customer challenges, but also society challenges in our business areas of human health, the safety and security of society, and industrial development in collaboration with various partners, Shimadzu intends to achieve sustainable growth and become an entity even more needed by customers and society.

Performance Targets for FY 2019

Net sales	Operating income	Operating margin	Overseas sales ratio	ROE
400.0 billion yen or more	45.0 billion yen or more	11% or more	50% or more	10% or more

Vision for Shimadzu

Become a Company That Solves Challenges in Society in Collaboration with Partners All Around the World



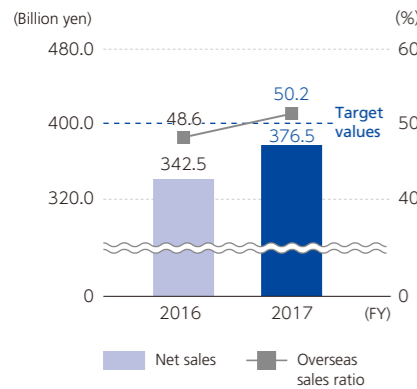
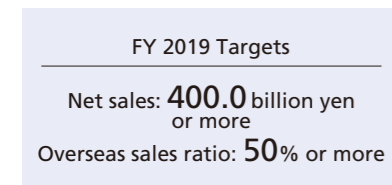
Review of FY 2017 (First Year) in Medium-Term Management Plan

Results with Respect to Management Targets

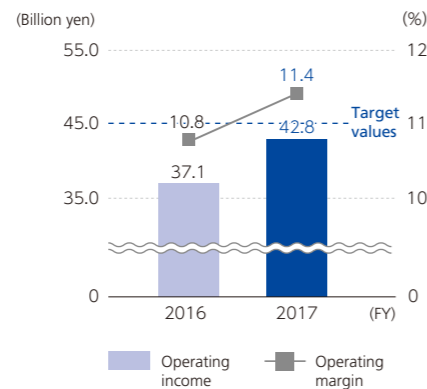
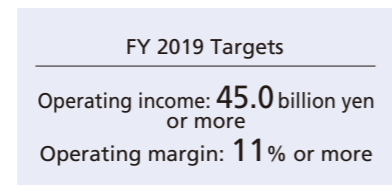
Results remained strong during FY 2017, due to a gradual economic recovery trend within and outside Japan. Net sales increased by 9.9 % (year-on-year) to a record 376.5 billion yen. The overseas sales ratio increased 1.6 points (year-on-year) to 50.2 %. Operating income increased by 15.5 % (year-on-year) to a record 42.8 billion yen. The operating margin also

increased by 0.6 points (year-on-year) to 11.4 %, which achieved the target minimum 11 % specified in the medium-term management plan in the first year. The ROE also increased by 0.2 points (year-on-year) to 11.7 %, which achieved the target minimum 10 % specified in the medium-term management plan.

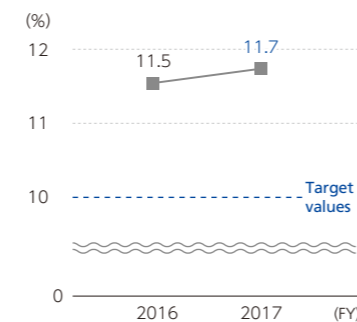
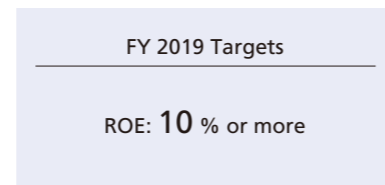
■ Net Sales/Overseas Sales Ratio



■ Operating Income/Operating Margin



■ ROE



Invest in Growth Fields

In January 2018, construction started on the Healthcare R&D Center, which will be used to implement measures in the healthcare field (scheduled for completion in January 2019). Additionally, innovation centers have been established in the United States, Europe, China, and Asia to promote joint research and joint development projects aimed at meeting the needs of customers and society in those regions.

We intend to continue actively investing in growth fields as well, with plans to spend 53.0 billion yen on research and development and 70.0 billion yen on capital expenditures during the three years of the medium-term management plan.

Healthcare

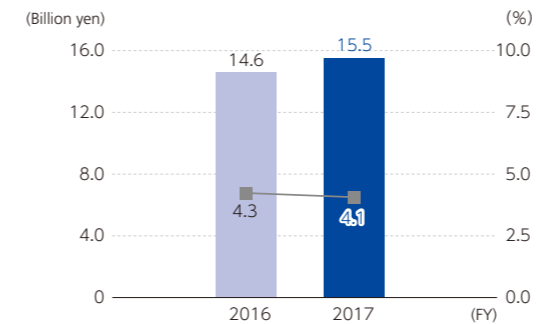
We are developing a health business platform for making contributions in the respective fields of health management, early detection, diagnosis, and treatment of diseases, and prognosis management.

Also, as one of our measures to integrate technologies from our Analytical & Measuring Instruments and Medical Systems segments, we are working with the Tohoku University Hospital to jointly develop a system for diagnosing and treating primary aldosteronism, which is one cause of high blood pressure. The system is scheduled for release during 2018.

Materials

We intend to offer help with development and quality control of new materials, such as composite materials with enhanced functionality. For the automotive field where research and development aimed at reducing weight and increasing safety of automobiles is particularly active in order to prepare for the broad adoption of electric vehicles, we will promote offering solutions that involve cooperation between separate Shimadzu business segments.

■ R&D Expenses/Ratio of R&D Expenses to Net Sales



Note: R&D expenses are the total expenses for testing and research expenses (selling, general and administrative expenses) and industrial application research expenses.

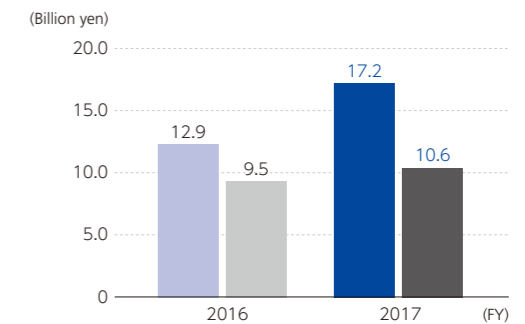
Infrastructure

To help create communities where we can live safely and securely, we have been conducting a preliminary study of establishing a business based on using Shimadzu technologies and products to quickly inspect and diagnose deteriorating public infrastructure and are in the process of selecting partners for commercializing the business.

Environment/Energy

We offer products and services to meet the demand for environmental measurement and regulatory compliance. In FY 2017, measures were especially strengthened in China, where corresponding markets are expanding significantly, and that resulted in expanded business results.

■ Capital Expenditures/Depreciation and Amortization



Strengthening Profitability

In addition to the 16.0 % operating margin of the Analytical & Measuring Instruments segment, the operating margin also increased 1.1 points (year-on-year) to 4.1 % for the Medical Systems segment and 1.8 points (year-on-year) to 9.2 % for the

Industrial Machinery segment.

To further expand our aftermarket business, we newly added the French company Alsachim to the Shimadzu Group in July 2017, which mainly supplies reagents for clinical fields.

Reforming Organizational Foundation

In October 2017, we announced our Health Declaration and focused efforts on preparing uniquely Shimadzu health management solutions based on Shimadzu products. We are preparing work environments with


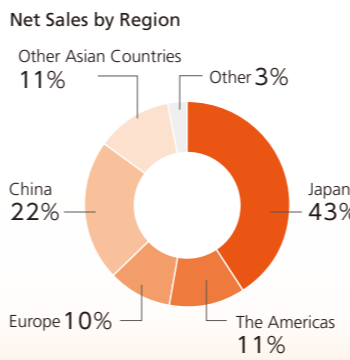
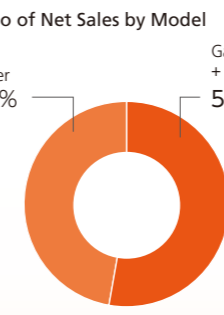
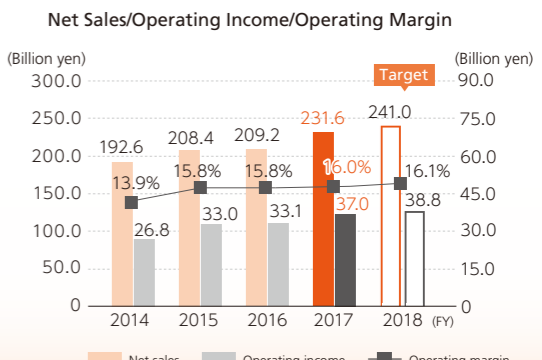

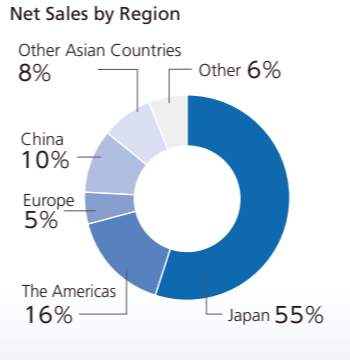
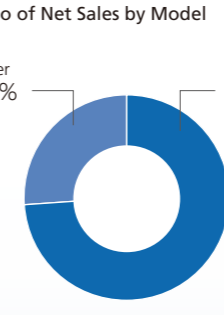
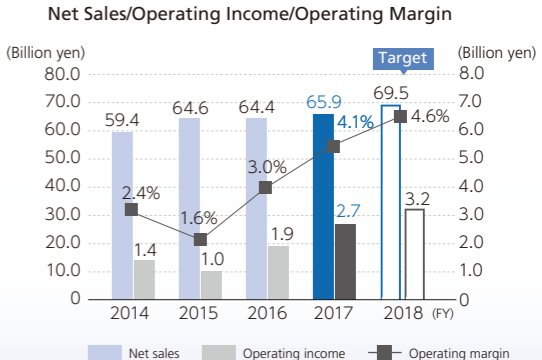
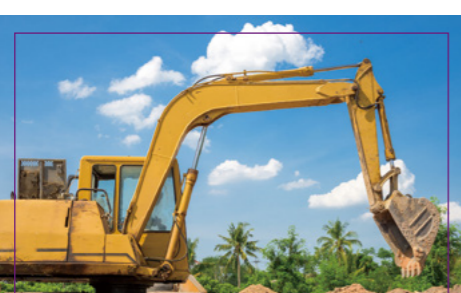
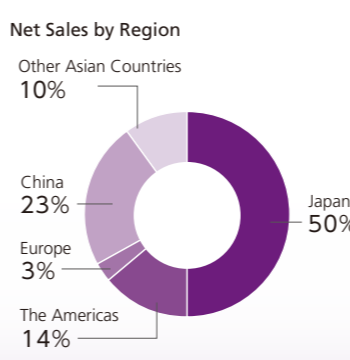
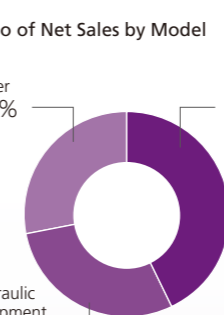
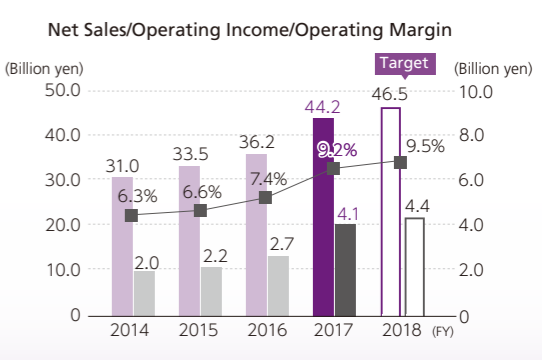

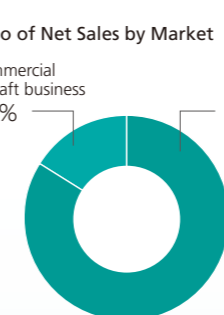
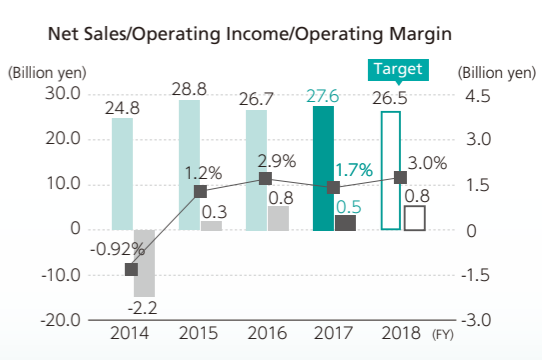
flexible working practices that are more conducive for working women, such as by introducing systems for hourly-based paid vacation days and for working from home to accommodate child care or nursing care needs.

Shimadzu Group Activities During the Past Year

FY 2017 marked the beginning of a new three-year medium-term management plan, which specifies a slogan of "Become a Company That Solves Challenges in Society in Collaboration with Partners All Around the World." In addition to supplying many different products and services that generate new value for society, the Group also implemented measures to establish a stronger and more solid foundation for business, such as establishing the CSR Charter and implementing health and environmental management measures, for example, in an effort to achieve sustained growth and increase corporate value.



Business Segments

	Segment	Strategy Points	Business Results	
Key Business	 <p>Analytical & Measuring Instruments Business</p>	<ul style="list-style-type: none"> Make key investments in mass spectrometers and liquid chromatographs. Expand the aftermarket business. Expand/improve product lines. 	<p>Net Sales by Region</p>  <p>Ratio of Net Sales by Model</p>  <p>Net Sales/Operating Income/Operating Margin</p> 	Analytical & Measuring Instruments Business
	<p>Create new businesses by integrating analytical and medical technologies.</p>			
Businesses for Profitability Reforms	 <p>Medical Systems Business</p>	<ul style="list-style-type: none"> Expand/improve product lines and expand businesses outside Japan. Improve product profit margins and expand profitable service business. 	<p>Net Sales by Region</p>  <p>Ratio of Net Sales by Model</p>  <p>Net Sales/Operating Income/Operating Margin</p> 	Medical Systems Business
	 <p>Industrial Machinery Business</p>	<ul style="list-style-type: none"> Reform profitability by expanding/improving the turbomolecular pump business and expanding the service business. Reform profitability by expanding the hydraulic equipment business outside Japan and strengthening the manufacturing base. 	<p>Net Sales by Region</p>  <p>Ratio of Net Sales by Model</p>  <p>Net Sales/Operating Income/Operating Margin</p> 	Industrial Machinery Business
Businesses for Rebuilding	 <p>Aircraft Equipment Business</p>	<ul style="list-style-type: none"> Build stable profitability by expanding the commercial aircraft equipment business. Review and rebuild the defense business. 	<p>Ratio of Net Sales by Market</p>  <p>Net Sales/Operating Income/Operating Margin</p> 	Aircraft Equipment Business

Analytical & Measuring Instruments Business

We contribute to social innovation by supporting manufacturing in food, pharmaceutical, and industrial fields, supporting environmental analysis of water quality, air pollution, and so on, and supporting cutting-edge research in the life sciences and other fields.



Shuzo Maruyama General Manager, Analytical & Measuring Instruments Division



Society Challenges

Given the rapid changes in our living environment, due to increased economic development and interactions in global society, modernization of lifestyles, technological innovation, and other factors, in order to achieve a sustainable society in the future, we need to generate innovations for building a safe and secure society and reducing our impact on the global environment. In the healthcare field, as people become more conscious of health issues, there are increasing demands for food safety and improved healthcare and pharmaceuticals. Furthermore, given the acceleration in world-wide measures to achieve a carbon-free society, there is demand in the materials field for developing new functionally-engineered materials for use in developing safer, lighter, and more fuel efficient aircraft and automobiles and in the environmental/energy field for more practical renewable energies, for example.



Value Provided

Shimadzu intends to create new business value and offer solutions that contribute to solving challenges in society by increasing the sophistication and broad applicability of analytical and measuring technologies.

In the healthcare field, given the major structural changes occurring in society caused by lower birth rates and aging populations, we will contribute to the entire series of health management processes, from health maintenance, disease prevention, and ultra-early diagnosis to prognosis management and nursing care, and also contribute to new drug development, cellular analysis, and improved healthcare systems based on using IoT/AI technologies for big data analysis, to increase productivity, or to use remote monitoring in order to establish medical system. In the food field, we will help ensure the safety and security of food through regulatory compliance, such as by offering instruments for analyzing residual pesticides in foods, inspecting water quality, evaluating the presence of restricted substances contained in packaging, and help build new food businesses. In the materials field, we will offer a wide variety of solutions based on a broad range of analytical and measuring technologies that satisfy specific needs of users involved in inspection, analysis, or evaluation of materials used for

transportation applications, where there has been increasing advancements in new material development aimed at improving fuel efficiency or ensuring safety. In the environmental/energy field, we will contribute to achieving a carbon-free society by offering more energy efficient and compact Shimadzu products that reduce customer energy consumption, by increasing the service life of consumables, and by eliminating the use of certain chemical substances. We will also offer system applications that are helpful for environmental conservation or for developing clean energy technologies. We will also offer comprehensive solutions that help customers achieve smooth laboratory operations. From selling instruments to providing aftermarket services, we will offer a broad range of products and services, based on a concept of a "total laboratory solutions business," for solving challenges shared with society that lead to the future of customers. Consequently, we are working with society to develop even more advanced analytical and measuring technologies for achieving healthy and sound lifestyles.

Healthcare (Pharmaceuticals and Life Sciences)

Analyzing Blood, Urine, and Other Biological Samples

This fully automates analysis of clinical biological samples, from pretreatment to LCMS analysis, which minimizes operator errors and risk of infection.



Fully Automated Sample Preparation Module for LCMS

Improving the Efficiency of Drug Development

Remote operability and automated analysis provide improved productivity and easier operability. This is especially popular for pharmaceutical quality control applications.



i-Series Plus Integrated High-Performance Liquid Chromatograph System

Rapid Measurement of Biological Samples Without Pretreatment

This enables cosmetics, food ingredients, biological samples, and other substances to be analyzed quickly by simply placing a small quantity on a plate. Highly resistant to contamination and requiring less frequent maintenance, this system is perfect for a wide range of applications.



DPiMS-200 Probe Electrospray Ionization Mass Spectrometer

Cell Cultivation

This automates the previously manual process of removing cells. It improves work efficiency and reproducibility and helps improve the reliability of cell cultivation.



Cell Picker Cell Culturing Support System

Cell Cultivation Process Control

This simplifies routine observation and recording processes in cell manufacturing operations, improves reproducibility, and significantly reduces the burden on operators.



CultureScanner CS-1 Cell Culture Analysis System

Data Management Required in Pharmaceutical Fields

Integrating the management of various analytical instruments helps achieve smooth and efficient laboratory operations and helps ensure more appropriate data maintenance/management and compliance with regulations and guidelines.



LabSolutions Analysis Data System

Review of FY 2017

Given the favorable market conditions with continued strong global economic growth, expanded investment in capital equipment and R&D and stronger food and environmental safety regulations have resulted in strong results for the Analytical & Measuring Instruments segment. We are engaged in the following measures to meet the increasingly diverse needs of product users.

- Promote new cell-related businesses: We are working with outside organizations to provide new solutions for ensuring reliable cell cultivation quality and work efficiency in a wide range of fields, from basic research and manufacturing to drug discovery and regenerative medicine. In FY 2017, we released products jointly developed with iPS Portal Inc., such as the C2MAP-2000 automated pretreatment module for cell culture media analysis and the Cell Picker cell culturing support system, which helps automate previously manual cell removal operations using a pipette. Given the high demand for automating operations involving handling cells, we intend to continue deploying unique cell analysis businesses.
- Innovation centers launched in four regions: With the startup of the Innovation Centre in Singapore, Shimadzu now has innovation centers operating in four key regions of the world, including the United States, China, and Europe. The innovation centers in respective regions will cooperate the Head Office to engage in joint research projects with advanced academic institutions, research institutions, and customers.
- Measures for aftermarket business: Shimadzu fully entered the reagent/consumables business by acquiring the French reagent manufacturer Alsachim SAS. The company will serve as the base for Shimadzu's reagent business in Europe and development of unique reagent kits. In the future, we will expand/improve the line of devices and reagent kits based on the specific analytical objectives of customers.

Outlook for FY 2018

A background of stable economic growth has expanded the scope of business fields where Shimadzu analytical and measuring technologies can make a contribution. Given the goal of solving challenges in society as the "number one broad-line analytical instrument manufacturer in the world," we intend to expand business further and improve our profit structure by using partnerships with outside parties, mergers and acquisitions to obtain technologies and by integrating our analytical and medical technologies to create and supply new value.

Key Measures

- Promote new businesses: In the healthcare field, where research and development is very active, we will collaborate with outside entities or actively engage in joint operations with customers to offer advanced value and foster new businesses related to healthcare or health, such as next-generation examination businesses for cancer, lifestyle diseases, or psychiatric disorders.
- Generate innovation: We will offer new solutions by engaging in joint research with advanced customers to quickly develop products that match local needs or that satisfy latent local needs, such as for regulatory compliance with food safety and security requirements, for inspection and evaluation testing needs in the transport field, where advancements are being made in developing new materials, or for developing environmental conservation or clean energy technologies.
- Aftermarket business: We will deploy new service businesses in aftermarkets, such as by expanding the reagent/consumables business and using AI/IoT technologies to build a network infrastructure.

Through these measures, we will work to increase corporate value and establish a stronger business base for achieving sustained growth in the future.

Asia Innovation Centre Starts Operation

The Innovation Centre established at Shimadzu (Asia Pacific) Pte Ltd., our sales subsidiary in Singapore, started operations in November 2017. It is tasked with engaging in joint research and joint development based on promising research results gathered from academic and research institutions and other sources in Asia and Oceania regions and then commercializing the results. Currently, the centre is working with the National University of Singapore Environmental Research Institute to

jointly develop an environmental sensor that can detect phosphorus and nitrogen in rivers, lakes, and other water with high sensitivity, aiming to create a product by the end of 2020. The respective innovation centers established in the United States and China (2015), Europe (2017), and now in Singapore, will cooperate with the other centers or the Head Office to develop new number-one and truly unique products more quickly.

Shimadzu Fully Enters Reagent Business by Acquiring Reagent Manufacturer

In a significant move to strength the aftermarket business, Shimadzu Corporation has acquired Alsachim SAS (ALC), a reagent manufacturer based in France, through Shimadzu's German subsidiary Shimadzu Europa GmbH. ALC is one of only a few reagent manufacturers in the world, capable of using sophisticated technology to synthesize and manufacture stable isotope reagents*1. By designating ALC as the location for basing Shimadzu's reagent business in Europe and by developing and selling unique reagent kits for liquid chromatograph mass spectrometer analysis, we intend to accelerate the expansion of instrument sales and the consumables business. Furthermore,

in the future, Shimadzu also plans to establish reagent and consumables business operations in other key regions throughout the world. In addition to expanding the reagent and consumables business globally, that will also facilitate developing new reagent kits specifically for new solutions being developed at the Shimadzu innovation centers, which were established in respective regions for conducting joint research and development projects.

*1: Stable isotope reagents are reagents labeled with a stable isotope. Stable isotopes are atoms with a different mass number but the same chemical characteristics as corresponding non-isotope atoms. Stable isotope reagents are essential as internal standard substances for quantitative analysis using a mass spectrometer and are also used for nuclear magnetic resonance (NMR) and other systems.



Materials

Screening for Elements Regulated by RoHS

With functionality optimized for screening, this is ideal for screening inspections of various materials and substances used in automotive and electrical/electronic equipment, for example.



EDX-LE Plus Energy Dispersive X-Ray Fluorescence Spectrometer

Highly Accurate 3D Measurement of Automotive and Electronic Parts

This contributes to more sophisticated analysis, inspection, and testing in the automotive industry, where there has been a constant succession of advancements in innovative technologies for improving safety and comfort, reducing environmental impact, and so on.



XDimensus 300 Dimensional X-Ray CT System

Evaluating Plastic Materials in Automotive Components and Other Applications

This contributes to tensile testing in a wide range of applications involving plastics, polymer composite material, and so on. The properties of new materials can be evaluated in combination with high-speed video cameras.



HITS-X Series High-Speed Impact Testing Machine

Environment/Energy

On-Site Analysis in a Wide Range of Fields, Such as Petroleum, Chemicals, and Environmental Measurement

This next-generation gas chromatograph is compact, fast, and packed with advanced technologies.



Nexgen GC Compact Analyzer Gas Chromatograph

Measuring Residual Moisture Content in Liquid Petroleum Gas

This system uses Shimadzu's own detector to accurately measure trace quantities of moisture. It was jointly developed at the University of Texas in cooperation with Merck of Germany.



Trace Moisture Content Measurement System

Controlling the Concentration of Nitrogen and Phosphorus in Effluent Water

This TNP analyzer equipped with M2M functionality can be used to continuously monitor measurement data or instrument sensing information via the cloud, which is useful for complying with total water pollutant load regulations.



TNP-4200 Online Total Nitrogen and Total Phosphorus Analyzer

Medical Systems Business

We contribute to early detection and early treatment of cancer and other diseases at medical facilities around the world by offering easy-to-use medical systems that reduce the stress on patients based on state-of-the-art image processing technology.



Kunimasa Ito General Manager, Medical Systems Division



Society Challenges

In the healthcare industry (excluding pharmaceuticals and biotechnology), the market for diagnostic imaging systems has shown strong growth and now accounts for about 3 trillion yen in sales. In contrast, the market size for diagnostic X-ray systems, our main product line, is about 700 billion yen, which is projected to achieve steady future growth in markets such as the United States, Japan, and China. Meanwhile, societies in developed economies are facing challenges with the accelerating pace of rising healthcare costs associated with aging demographics. Even developing countries are facing challenges with aging populations, with the bulk of diseases expected to shift from infectious diseases to non-infectious diseases and health levels expected to approach the level of developed economies by 2035.



Value Provided

We will use Shimadzu's image processing and sensing technologies to offer solutions for cardiovascular diseases, musculoskeletal disorders, cancer (malignant neoplasms), and psychiatric disorders.

For cardiovascular diseases, for example, we will support cutting-edge minimally invasive procedures compatible with new treatment devices for video imaging applications included in angiography systems. For musculoskeletal disorders, we will support bone analysis applications installed in multipurpose fluoroscopy systems for diagnosing osteoporosis and tomosynthesis applications for artificial joint replacement procedures. For cancer

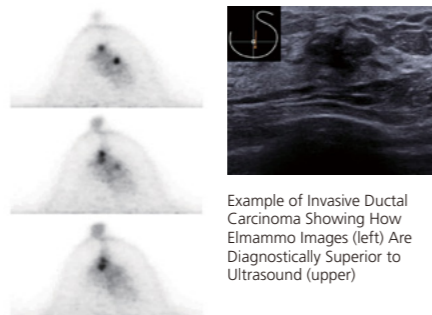
(malignant neoplasms), we will offer dedicated breast PET systems that do not cause any compression pain and offer combined radiotherapy and real-time tumor-tracking systems that enable accurate irradiation of tumors with the radiotherapy beam by tracking movement caused by breathing or other factors. For psychiatric disorders, we will offer supplemental support for differential diagnosis of depression using near-infrared light.

Measures to Prevent Cancer

By simply lying face down on the bed and lowering a breast into the detector hole, patients can be examined in a relaxed state without any pain from breast compression. The newest Avant Class model offers an even larger field of view.



Elmammo Avant Class Dedicated Breast PET System



Example of Invasive Ductal Carcinoma Showing How Mammography Images (left) Are Diagnostically Superior to Ultrasound (upper)

The Elmammo system can clearly visualize an invasive cancer directly under the nipple and intraductal progression spread laterocaudally from the invasive cancer. That means superior diagnostic results can be achieved even for patients with high-concentration mammary glands that are difficult to see with conventional methods. (Source: Academic Morning Seminar, 24th Annual Meeting of the Japanese Breast Cancer Society)

Stroke and Heart Disease

For advanced catheterization procedures, where advancements are occurring on a daily basis, we will satisfy the demands of both healthcare institutions and patients for further reducing invasiveness by equipping systems with a variety of tools and functionality for minimizing radiation dose and shortening treatment time.



Trinias B8 unity edition Angiography System

Improving the Visibility of Medical Devices and Reducing the Radiation Dose



SCORE PRO Advance

Imaging with Low-Radiation Dose Levels and Is Minimally Affected by Movement



SCORE RSM

Perinatal and Pediatric Medicine

The advantage of mobility is used to perform radiography and display images on-site in neonatal ICU wards, so that the patient's condition can be determined more quickly.



Mobile DaRt Evolution MX8 version Mobile X-Ray System

Meeting the Needs of an Aging Society

By deploying a variety of applications, such as a state-of-the-art tomosynthesis digital tomographic image reconstruction application and bone density measurement software, we will offer high precision examinations and added clinical value.



SONIALVISION G4 R/F System

Review of FY 2017

The following three basic strategies were implemented to expand profits.

- Expand angiography system business: To offer shorter treatment times, we released the new Trinias Unity edition, which features treatment support applications and significantly improved operability. In particular, user feedback has been especially positive for a new application intended to support treatment of peripheral arterial disease (PAD) cases, which have been increasing due to aging demographics.
- Deploy business in North America: We released a new mobile X-ray system, one of Shimadzu's strongest product lines in North America, that features a large built-in monitor for checking images immediately on-the-spot and a more compact overall size for freely moving throughout hospitals. Sales of the new product have been very strong in North America and have contributed to expanding overall results.
- Aftermarket business: In Japan, we started operation of a call center, where customers can directly talk to a technical expert at any time, 24-hours-a-day, 365 days-a-year. This service ensures Shimadzu can provide appropriate operating advice to customers and provides high uptime rates for systems delivered to customers.

Furthermore, as a new approach to the healthcare field, we expanded the range of clinical applications for our near-infrared cameras. We have also started research on using artificial intelligence technologies to help reduce the waiting times for receiving healthcare at hospitals.

Outlook for FY 2018

To deep-till opportunities in the advanced healthcare field, we will actively promote joint research with key research institutions throughout the world. We started collaborating with the National Cancer Institute (NCI) in the United States to research photoimmunotherapy for cancer and develop technology for supporting the diagnosis and treatment of high blood pressure disorders.

Implementing Three Basic Strategies

- Expand angiography system business: We will make further improvements to applications for supporting treatment of peripheral arterial disease (PAD) cases, which are increasing due to aging demographics. By automatically setting the target exposure area, the applications can significantly reduce the amount of work involved in examining and treating PAD. Consequently, we will promote expanding sales both within and outside Japan.
- Deploy business in North America: We will expand business by selling new X-ray systems to urgent care facilities, which support regional healthcare in North America and have been rapidly increasing in recent years.
- Aftermarket business: By combining remote service with a 24-hour 365 days-a-year call center, we will start offering remote support service not only for malfunctions and repairs, but also for applications. That will help solve customer problems quickly and improve the efficiency of business operations.

Industrial Machinery Business

We will contribute to industrial development by supplying high-performance key components, such as turbomolecular pumps and high-quality equipment equipped with sophisticated hydraulic technology.

Left: **Yasunori Tokumasu**
General Manager, Fluidics Systems Division

Right: **Akira Watanabe**
General Manager, Industrial Machinery Division



Society Challenges

Due to the proliferation of smartphones and the increasingly sophisticated and bloated information-based society, such as the expanding range of applications for IoT technologies, the semiconductor industry that sustains such trends is becoming increasingly important. Furthermore, revolutionary technologies in the mobility field, such as advancements in self-driving technology and the adoption of electric vehicles, have accelerated the pace of changes that are transforming society in recent years. Meanwhile, economic development has resulted in society challenges, such as global demand for construction and food shortages in developing countries, for example. Consequently, there is demand for supplying industrial products and services that ensure such challenges are solved.



Value Provided

We will contribute to building public infrastructure and increasing agricultural productivity by supplying instruments and key components that contribute to the growth and development of the manufacturing industry and by supplying hydraulic equipment.

We will endeavor to achieve an affluent, safe, and secure society by supplying instruments and key components that contribute to the development of a broad-based and sophisticated manufacturing industry, such as by supplying turbomolecular pumps, which are critical components in semiconductor manufacturing equipment, or by supplying equipment used to manufacture sensors and other key

components essential for improving the safety of self-driving vehicles. We will contribute to building public infrastructure and increasing agricultural productivity by supplying hydraulic equipment with outstanding low-noise and high-performance efficiency characteristics as the motive power source for construction machinery and agricultural equipment.

TMP-X4306 Turbomolecular Pump

Turbomolecular pumps are vacuum pumps used to create the vacuum environment essential for manufacturing semiconductors, flat panel display panels, and other products. We also offer turbomolecular pumps with the world's highest evacuation capacity.



Hydraulic Gear Pump

Hydraulic gear pumps are widely used as a hydraulic power source for various types of equipment including industrial vehicles such as forklifts, construction machinery, special-design vehicles, and agricultural machinery.



Forklift

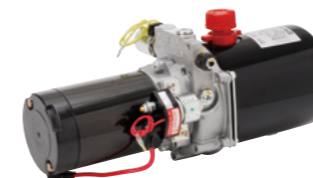
Review of FY 2017

We increased results for respective products by implementing the following measures.

- **Turbomolecular pumps:** Given strong market conditions for semiconductor and electronic parts, sales were strong for semiconductor and flat panel display manufacturing equipment in Japan, North America, Europe, and China. Sales also increased for glass coating systems with enhanced functionality for construction materials in China. We also established global service capabilities, such as by establishing a new service location in China, and steadily expanded service sales.
- **Hydraulic equipment:** We increased sales, mainly for global investment in infrastructure, but especially due to expanded demand for small construction machinery in China and the United States. Forklift demand also increased in all regions world-wide, due to an expansion in logistics. Sales especially increased due to low-noise and high-efficiency characteristics.
- **Others:** Glass winder sales also increased significantly as demand remained strong for electronic circuit boards, automotive materials, wind power generator blades, and so on, in China. Industrial furnace sales increased due to strong demand for carbide tools and ceramics used in power supply/control semiconductors on circuit boards. We also developed applications for high-speed sputtering systems, such as electromagnetic wave transparent films for millimeter-wave radar.

Power Package

This hydraulic unit is configured with an electric motor or valve in the center of small gear pump. It is mainly used in transport vehicles and conveying equipment.



Outlook for FY 2018

To achieve additional business expansion, we will implement the following measures.

- **Turbomolecular pumps:** With demand for semiconductors and electronic parts, which are our key markets, expected to remain strong, we will expand business further by offering attractive product features, such as by reducing downtime or by using IoT technology, before competitors do. We will also expand service sales by expanding, improving, or increasing service locations in Taiwan and Europe regions.
- **Hydraulic equipment:** Given the rapid shift to electric forklifts, demand is predicted to increase for low-noise, high-efficiency, and IoT features. We intend to expand business by developing technology for supplying products with the world's most advanced low-noise technology, with IoT-based troubleshooting features, or that supplies information for operation management.
- **Other:** With demand for glass winders remaining strong in China, we will expand business by introducing new products. With capital investment in industrial furnaces expected to grow significantly in existing markets and by implementing measures to develop new applications and expand sales in China, for example, we expect high growth. For high-speed sputtering systems, we will expand the business by developing alternative technologies for plating processes.

UHSP-OP2060 High-Speed Sputtering System

This vacuum film deposition system applies multiple layers of high quality metal films onto three-dimensional injection molded plastic products at high speed. We expect this system to be widely used in automotive parts markets. For example, it is currently used to form electromagnetic wave transparent films required for self-driving vehicles.



Aircraft Equipment Business

We will contribute to ensuring a society with safe and comfortable mobility, by offering components and systems that integrate electronics and other advanced technologies with precision manufacturing technologies cultivated by Shimadzu.



Hiroshi Fujino General Manager, Aircraft Equipment Division



Society Challenges

Long-term stable growth is expected in the aircraft equipment market, due to increasing globalization of economic activities. Moreover, the commercial aircraft equipment market is expected to double in the next 20 years, due to the increase in low-cost carriers and growing demand in Asia. Given that the mobility field is essential for globalization, customers will increasingly demand not only safety, but also environmental conservation and comfort. We will contribute to society by using the technologies and manufacturing expertise cultivated by the Aircraft Equipment business segment to help achieve the mobile society demanded in our current era.



Value Provided

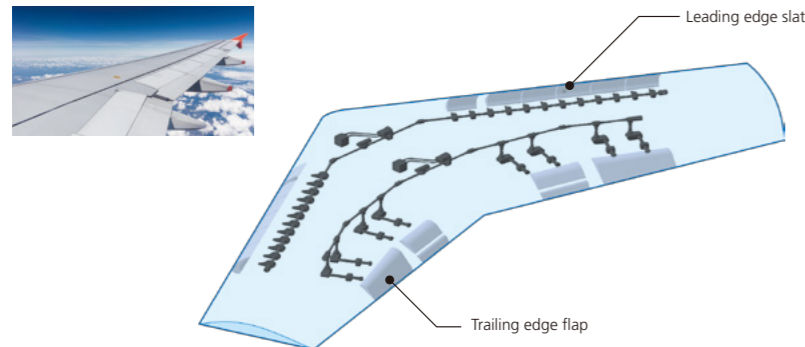
We will contribute to the safety, reliability, and efficiency of aircraft and to reducing environmental impact through manufacturing and selling aircraft components.

During our many years in business, we have provided a wide variety of value to society by manufacturing and selling high quality and highly reliable aircraft components. Future aircraft will require achieving even higher levels of safety, reliability, and efficiency and lower environmental impact levels. In particular, we will contribute significantly to improving efficiency and reducing environmental impact by developing technologies for smaller, lighter, and electrically powered flight control systems, to flight safety

with our display technology, and to the comfort and optimization of cabin environments with our air management technology. We are confident that our precision machining technologies used for such components will serve to not only contribute to the growth and advancement of the aircraft industry, but also strengthen the foundation for the increasingly sophisticated manufacturing industry.

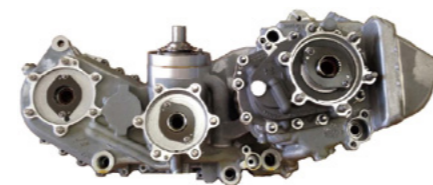
Flight Control System

Shimadzu develops flap control systems for safely performing takeoffs and landings. The high-quality mechanical technology helps ensure flight safety.



Engine Accessory Gearbox

This critical system starts the aircraft engines and then converts motive power from the engines into electric or hydraulic power for uses within the aircraft.



Cockpit Display Systems

Shimadzu offers head-up display (HUD) systems and other products that use advanced electronics and optics technologies to display flight information superimposed on the view of the outside world. These systems help reduce pilot workload and increase flight safety.



General-Purpose Magnetic Sensors

These fluxgate magnetic-field sensors measure slight magnetic fields with high sensitivity. We anticipate they will be used as components in security systems, communications, and drones.



Review of FY 2017

- The Japanese Ministry of Defense aircraft component business achieved strong sales, but the commercial aircraft equipment market was impacted by lower production quantities at medium and large passenger aircraft manufacturers.
- To increase our competitive strength in the commercial aircraft equipment market, which is projected to undergo extraordinary growth, Shimadzu established a wholly-owned subsidiary, Shimadzu Aerotech Manufacturing, Inc., to specialize in manufacturing commercial aircraft equipment. We started building cost-competitive manufacturing systems for supplying high quality products by installing cutting-edge equipment for difficult machining operations, installing automatic inspection equipment, and starting up manufacturing lines optimized using IoT technology.



Outlook for FY 2018

We will take on the challenge of improving the competitive strength of existing businesses and achieving growth through new businesses.

- The commercial aircraft market continues to evolve from an era of mass transportation to an era of detailed transport systems with optimized transport routes or interregional routes. Consequently, demand for aircraft is shifting from large aircraft to small and medium-sized aircraft. We believe the commercial aircraft equipment business will start expanding. To satisfy the demand from an expanding commercial aircraft equipment market, in FY 2018 we plan to fully launch operations of Shimadzu Aerotech Manufacturing, including expanding machining/fabrication and assembly operations and starting surface treatment operations at the U.S. subsidiary. By doing so, we will increase productivity, strengthen cost competitiveness, and expand and improve profitability of the commercial aircraft equipment business.
- As a new measure, we will start a new business based on testing/inspection systems intended for airlines and aircraft manufacturers for use in improving the safety, reliability, and uptime of their aircraft equipment. The systems will integrate technology from the Aircraft Equipment segment with technology from the Medical Systems and Analytical & Measuring Instruments segments.

Shared Value Generated Together with Partners Throughout the World

Given the wide diversity of countries and cultures in the world, it is probably not an exaggeration to say that there are as many different challenges and needs as there are industries and lifestyles in each region. Such challenges and needs encourage the creation of new technologies and innovations for solving them. However, to create new technologies and innovations, it is essential that we work with local partners in the respective regions where the challenges or needs occur. Consequently, we are engaged in joint development or

innovation creation projects with a variety of partners around the world. Such collaborations are based at innovation centers established in various regions around the world. Conducting joint research with advanced customers at the respective regional locations in North America, Europe, China, and Asia, allows us to produce results more quickly. By sharing those results with the other locations around the world, we are able to offer corresponding value to more people.

Healthcare R&D Center for Promoting Joint Research with Advanced Medical Institutions Scheduled for Completion in January 2019

In January 2019 we will open a Healthcare R&D Center at the Head Office (in Kyoto). By consolidating various departments involved in healthcare-related development work in a single location, the center will promote integrating technologies from different business segments and more quickly commercializing key technologies obtained from projects, so that revolutionary new products are developed for the healthcare field or solutions that solve customer challenges are developed and supplied. In addition to integrating Analytical & Measuring Instruments and Medical Systems segments, the center will also serve as a location for open innovation through collaboration with advanced customers or outside researchers in order to expand the healthcare business.



Illustration of Completed Healthcare R&D Center

Shimadzu's Open Innovation Model for Generating Value with Partners Around the World

Innovation Centers

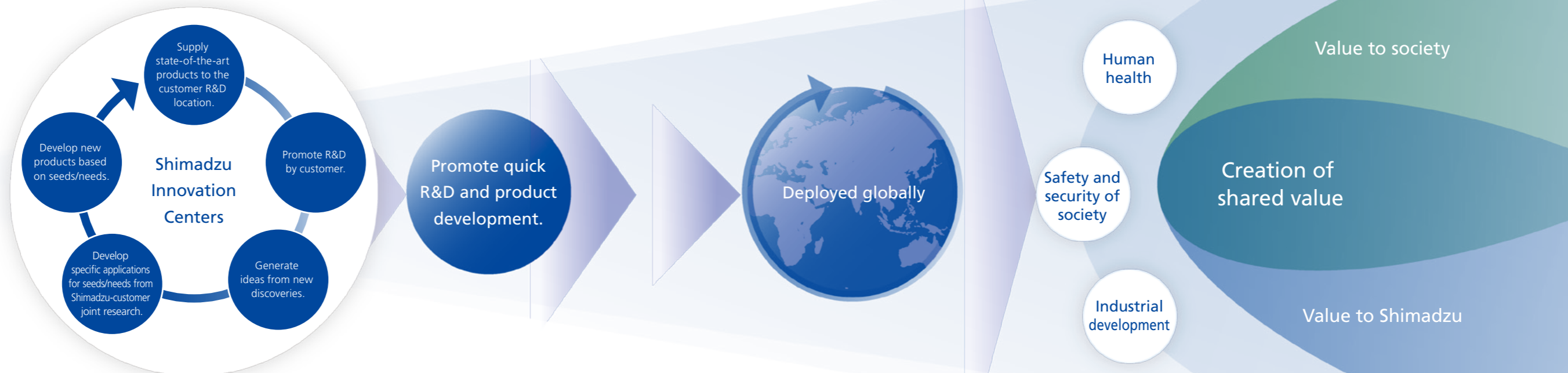
<p>Japan Total 12 Joint Research Topics</p> <p>Analytical Innovation Joint Research Workshop with Osaka University</p>	<p>United States Total 12 Joint Research Topics</p> <p>US Innovation Center</p>	
<p>Europe Total 13 Joint Research Topics</p> <p>Innovation Center in Germany</p>	<p>China Total 6 Joint Research Topics</p> <p>Shimadzu China Mass Spectrometry Center</p>	<p>Asia Total 7 Joint Research Topics</p> <p>Innovation Centre in Singapore</p>

Promising Markets

<p>Healthcare Progress Toward Individualized Medicine, Prevention, and Improving Health</p> <p>We are now required to develop more advanced technologies for examining patients, such as for detecting illnesses as early as possible or for identifying the causes of diseases in detail. Also, increasing mindfulness about health increases the attention paid to early detection, prevention, and improving health.</p>	<p>Infrastructure Infrastructure Deterioration and Growth of Newly Emerging Economies</p> <p>Given the progressive aging of infrastructure built during periods of high economic growth, including public and industrial infrastructure, such as bridges and chemical plants, respectively, there is demand for inspecting and maintaining infrastructure to ensure their safe and reliable operation. Due to rapid urbanization, this is a challenge that even newly emerging economies will face in the future.</p>
<p>Materials Increasing Functional Features and Efficiency of Materials</p> <p>There is demand for development and practical application of functionally engineered materials, such as materials with lighter weight, finer structures, or composites. Also, material informatics is starting to be used to improve development efficiency and material development techniques are becoming more sophisticated.</p>	<p>Environment/Energy Energy Conversion and Reducing Environmental Impact</p> <p>There are major changes in how energy is supplied, stored, and used, such as renewable energies and rechargeable batteries.</p>

Basic Policy

Ever since Shimadzu was founded, we have been supplying innovative products and services useful to customers. Therefore, research and development serves as a critical lifeline of Shimadzu that requires we continue engaging in ambitious research and development work intended to acquire advanced technologies. Accordingly, we will continue to generate new products and services to serve as the motive power for additional growth, both for customers and Shimadzu, and will contribute to solving challenges in society through science and technology.



Healthcare

Method Established for Early Detection of Alzheimer's in Blood

Society Challenges

In 2012, 4.62 million Japanese people aged 65 or older had dementia, but that number is projected to exceed 7 million by 2025. Consequently, dementia is an issue important not only to the healthcare industry, but also to overall society. Alzheimer's patients account for over 60 % of dementia cases and currently there are no drugs for basic prevention or treatment of Alzheimer's. The fact that the examination itself causes pain and is expensive is also an issue.

Increase in Dementia Patients



Source: *1 Japanese Ministry of Health, Labour and Welfare "Research to Estimate Future Population of Elderly Japanese with Dementia" (2015)
 *2 Japanese Ministry of Health, Labour and Welfare "Breakdown of New Outpatients Admitted to Dementia Treatment Centers by Diagnosis Name" (Report on Operations, Such as Maintaining and Improving the Health of the Elderly, 2017)

Value Provided

We established the method for early detection of Alzheimer's that could lead to development of drug for basic prevention or treatment of Alzheimer's.

Contribution to SDGs



Due to the large impact of Alzheimer's disease on society, there is growing anticipation for Alzheimer's prevention, early detection, or treatment methods. Patient quality of life (QOL) is also an issue, in terms of reducing the pain and cost involved in receiving the examination, for example. Using a detection method that uses a Shimadzu mass spectrometer, we will enable access to healthcare that is safe, high quality, inexpensive for anyone.

Measures by Shimadzu Corporation

Establishment of Accurate Method for Detecting Alzheimer's (Amyloid Accumulation)

Shimadzu is engaged in the field of advanced healthcare, which involves creating revolutionary new products and services for a wide range of fields, including prevention, diagnosis, treatment, and prognosis management, by integrating technologies from both the Analytical & Measuring Instruments and Medical Systems segments. As part of that process, we are conducting research related to dementia. Together with the National Center for Geriatrics and Gerontology, we established an accurate method for detecting Alzheimer's (accumulations of amyloids*). On February 1, 2018, the method was published in the online version of the science journal Nature.

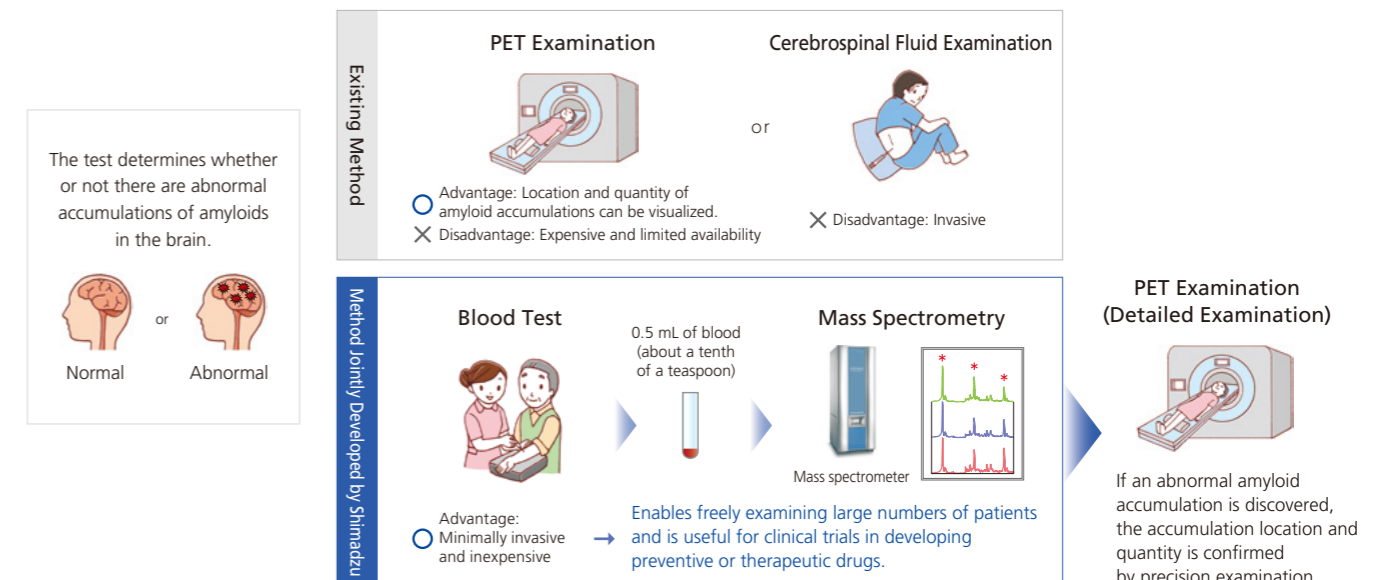
So far, we have cooperated with the Australian Imaging Biomarkers and Lifestyle Study of Ageing (AIBL), a world-leading Alzheimer's cohort study organization, to jointly research blood biomarkers for Alzheimer's disease with Kyoto University, University of Tokyo, Tokyo Metropolitan Geriatric Hospital, and Kindai University. Participating in the joint research from Shimadzu is Senior Fellow Koichi Tanaka, who received the Nobel Prize in Chemistry in 2002 for the matrix-assisted laser desorption/ionization (MALDI) method. That MALDI technology led to achieving the Alzheimer's (amyloid accumulation) detection method.

* A type of protein with a specific structure

Promoting the Development of Basic Prevention or Therapeutic Drugs for Alzheimer's

Accumulations of amyloids within the brain are thought to increase the risk of Alzheimer's disease and start occurring 20 or more years prior to disease onset. The conventional examination method for Alzheimer's involving cerebrospinal fluid and PET scans causes pain and is expensive, which is not practical for clinical trials that require examining several thousand participants. However, our Alzheimer's (amyloid accumulation) detection method is able to accurately detect Alzheimer's from only 0.5 mL of blood, which means our research results have the potential of leading to development of basic prevention and therapeutic drugs for Alzheimer's. Therefore, we plan to deploy a contract analysis business for conducting screening examinations that identify people with abnormal amyloid accumulations. We plan to target mild cognitive impairment (MCI) patients and healthy elderly being tested by pharmaceutical companies or research institutions involved in developing drugs for preventing or treating Alzheimer's. We also invested, together with Taiyo Life Insurance Company from the T&D Life Group, in MCBI Inc., a biotech startup engaged in early-stage MCI testing. We are engaged in developing a more accurate early-stage testing method using a mass spectrometer and developing a method for using a near-infrared imaging system (NIRS) to measure improvement in cognitive function after promoting exercise or communication, for example.

Method for Detecting Alzheimer's (Amyloid Accumulation)



Dialogue with a Stakeholder

Innovation and Partnerships for Creating Future Shared Value

Due to the mountain of society challenges in the healthcare field, there is great anticipation for revolutionary innovations. Therefore, we invited Dr. Hisataka Kobayashi, Senior Investigator at the National Cancer Institute (NCI) in the United States, who developed a cancer photoimmunotherapy method that kills cancer cells by irradiation with near-infrared light, to discuss the innovation and the role of Shimadzu technology in treating cancer. The following is from a conversation between Dr. Hisataka Kobayashi and Takashi Marume, General Manager of the Healthcare Business Strategy Unit in Shimadzu's Corporate Strategy Planning Department.

Meeting date: May 15, 2018 (Tue) Site: Shimadzu Corporation Head Office



Takashi Marume
General Manager
Healthcare Business
Strategy Unit
Corporate Strategy Planning
Department
Shimadzu Corporation

Hisataka Kobayashi,
M.D., Ph.D.
Senior Investigator
National Cancer Institute
(NCI)

How the Revolutionary Treatment Method Was Conceived

Marume: How did you conceive of using photoimmunotherapy to treat cancer?

Dr. Kobayashi: I used to be involved in treating cancer patients with radiotherapy and even wrote research papers on radiotherapy. At the time, radiodiagnostics and radiotherapy were performed within the same department and we were trying to find ways to combine them. Later, when I became a researcher, I decided to create a treatment method that only killed cancer cells, to extent possible. That resulted in trying to create a method that did not simply kill cancer cells, but that also created systems within the body that would enable a full recovery. Therefore, I ended up successively trying various combinations in an effort to identify methods that destroyed cancer cells as successfully as possible and destroyed them in a manner different than by conventionally using drugs, so that other systems in the body could also be utilized.

Marume: Once the concept occurred to you, what did you do next to realize the system?

Dr. Kobayashi: I thought of using antibodies that are only attracted to cancer cells. I had previously been involved in researching the behavior of antibodies, so I was very familiar with how different sizes of antibodies behaved.

Becoming a Partner with Analytical Science Expertise

Marume: Given that Shimadzu Corporation also has specified a management principle of "Realizing Our Wishes for the Well-being of Mankind and the Earth," we share a similar motivation to help save patients through healthcare and medical technology. Next, could you summarize some of the ways Shimadzu has been involved during that process of developing your photoimmunotherapy method?

Dr. Kobayashi: It began when Mr. Hattori was President. When I talked about how the use of light potentially could be expanded into medical treatment applications, not just imaging, President Hattori showed strong interest. Since then, I have obtained help from Shimadzu in various situations that required the help of professionals, such as to analyze polymers.

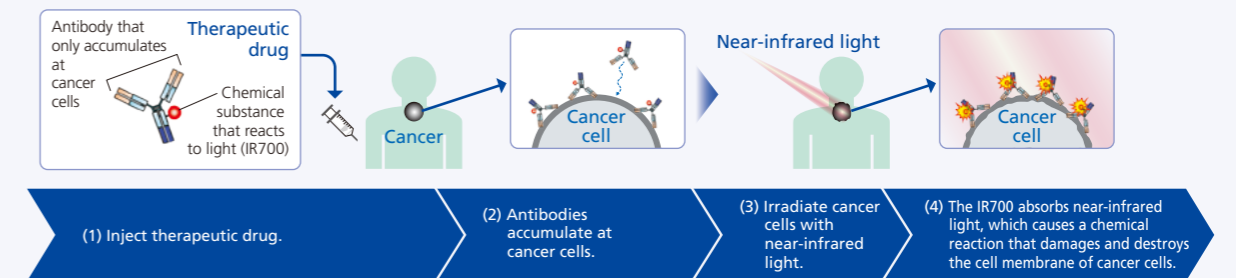
Marume: What is the current status and future plans for the research? I understand the method is currently in clinical trials, but how much longer will those trials take to complete?

Dr. Kobayashi: In the United States, we finished phase 2 and are currently in phase 3, so it won't take that much longer. In Japan as well, trials have started at the National Cancer Center Hospital East, which should be completed quickly, provided the first trial is successful.

Photoimmunotherapy for Cancer

Cancer photoimmunotherapy involves injecting a therapeutic drug (an antibody-drug conjugate) into the patient and then shining near-infrared light on the cancer cells where the therapeutic drug accumulates to quickly destroy only cancer cells without damaging normal cells. The injected antibody-drug conjugate consists of an antibody that only attaches to cancer cells bonded to a chemical substance (IR700) that reacts to absorption of near-infrared light.

Mechanism of How Cancer Photoimmunotherapy Works



Contribution from Shimadzu Anticipated for Clinical Trials

Marume: How can Shimadzu help with your research in the future? What are your expectations?

Dr. Kobayashi: We would appreciate help with clinical trials, of course. For example, I would be especially grateful for help with using a LIGHTVISION near-infrared fluorescence imaging system to image the high specificity of antibodies targeting cancer cells. Furthermore, the LIGHTVISION system also shows the attenuation and disappearance of fluorescent light, which can be used as evidence that chemical reactions occurred. I think that objective understanding would help ensure the likelihood of success, for both the patient and physician. It would also be extremely helpful to have an opportunity to make a commitment at the clinical imaging stage, such as by using a mass spectrometer to measure substances in the urine or check for biomarkers, for example, after treatment.

Marume: Do you have any opinions or advice regarding Shimadzu's measures to integrate analytical and medical technologies for developing and releasing technologies in the advanced healthcare field, not only for medical applications, but also for health management?

Dr. Kobayashi: I think integrating such technologies will generate new information not previously available. If physicians need to treat a patient, they will appreciate having more information. For example, it would be great if there was a system that could tell the physician which antibiotics will be most effective for each patient, based on checking for biomarkers before starting a treatment.

Supplying the Optimal Data for Given Clinical Applications

Marume: Do you mean individualized medicine or patient-customized treatment?

Dr. Kobayashi: Yes, exactly. Patients would be much easier to treat if we could determine their immune system status in advance. In other words, if biomarkers could be used to perform a diagnosis before surgery, based on both immunological and tumor data, physicians could provide better treatments. To avoid overwhelming physicians with information, it would be even better if only selected data was provided immediately to physicians when they are treating patients. The biggest problem is that the amount of available data has been increasing so much that it is difficult to determine which information is useful. It would be great to have a system that could extract from large amounts of data just the information of interest to the physician and then quickly deliver it to the location where the physician is providing treatment.

Marume: Is delivering it quickly to the treatment location the key point?

Dr. Kobayashi: I think the fact that I spent a lot of time on-site where patients are being treated was probably a major factor that resulted in developing my treatment method. There are many things that can only be learned from being on-site, such as identifying the true problems and what things are necessary in reality. I recommend gathering lots of feedback and opinions from those actually using the products.

Marume: That applies to all of Shimadzu's measures, not just advanced healthcare, doesn't it? After all, working with a wide variety of people to solve their problems and being useful to society and individuals is what Shimadzu's corporate philosophy is all about, so we look forward to spending time on-site where Shimadzu products are used.

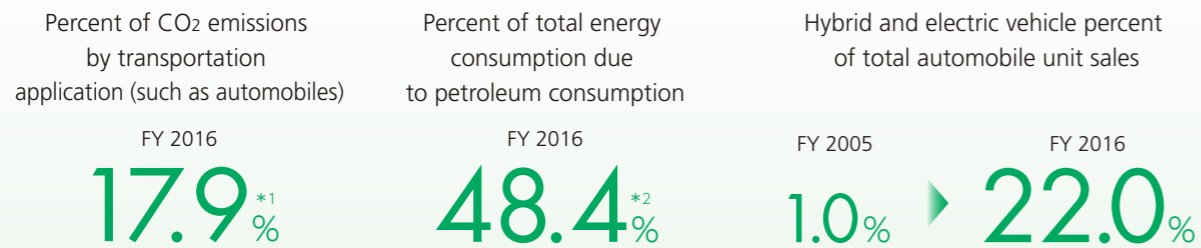
Materials

Support for Improving the Reliability of Functionally-Engineered Automobile, Aircraft, and Other Transport Equipment Materials



Society Challenges

In recent years, global warming from increasing quantities of greenhouse gas (GHG) emissions has increased the frequency of abnormal weather events throughout the world. Furthermore, the global increase in demand for energy has increased the use of petroleum, coal, natural gas, and other fossil fuels, which is causing problems with natural resource depletion. About 70 % of CO₂ emissions in Japan are emitted from industry, with transportation-related applications (such as automobiles) accounting for 215 million tons of emissions, or 17.9 % of the total. Petroleum accounts for about 50 % of all energy consumption.



Source: *1 Ministry of the Environment, 2016 Greenhouse Gas Emissions (Confirmed Data) (2018)
*2 Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry, 2016 Energy Demand and Supply (Confirmed Data) (2018)

Value Provided

Supplying measuring instruments that contribute to the efficiency of developing electric vehicles and lighter aircraft and improving their safety and reliability

Contribution to SDGs



For transport equipment, such as automobiles and aircraft, there has been increasing technological development activity for developing new fuels to replace petroleum or to develop lighter structural materials that improve fuel efficiency. We will contribute to reducing our environmental impact by developing new measuring techniques and products or by reducing GHG emissions and resource mining, for example.

Feedback from a Partner ▶▶

Joint Research with Shimadzu Supports Manufacturing Industries Around the World

The mission of the Dimensional Standards Group is to specify more sophisticated methods and official standards for measuring complex dimensions. As part of their activities, we have been involved in joint research with Shimadzu Corporation to achieve dimensional X-ray CT systems with guaranteed measurement accuracy. Results from the research are used to create the first dimensional X-ray CT system truly made in Japan, which is anticipated to meet the needs of advanced manufacturing industries not only in Japan, but also throughout the world.



Dr. Makoto Abe
Group Leader
Dimensional Standards Group
Research Institute of Engineering Measurement
National Institute of Advanced Industrial Science and Technology (AIST)

Measures by Shimadzu Corporation

Contributing to the Performance and Safety of Lithium-Ion Batteries

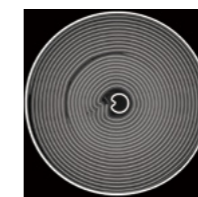
Lithium-ion batteries, which function based on a chemical reaction between objects, are normally made by rolling a cathode, anode, and separator into a cylindrical shape. However, with the increasing popularity of electric vehicles, it is expected that lithium-ion batteries will require higher capacity and higher energy density levels. Consequently, a high-performance separator that is safer and able to withstand higher voltage levels are also being developed. To improve battery performance and other battery features, it is important to measure dimensions inside the battery to make sure the cathode, anode, or separator is not shifted out of position, for example. One technology used to accurately measure dimensions inside the batteries is X-ray computed tomography (CT), which enables three-dimensional measurements from cross sectional images of the interior. By using X-ray CT technology to maintain the performance and safety of lithium-ion batteries and thereby support the widespread adoption of lithium-ion batteries, we think about improving the global environment and contribute to creating a safe and secure society.

Furthermore, given that Japan is a world leader in battery development, many companies and academic institutions in Japan are currently involved in researching and developing lithium-air batteries, which are a type of solid-state battery that has attracted attention as the next type of battery to follow lithium-ion batteries.

Therefore, in addition to supporting such R&D activities with our measurement instruments, we released a dimensional X-ray CT system to support such measurements and respond to industry requirements for more precise measurement ability inside objects. Because the system can measure the actual status inside objects, it can be used to compare that status to design dimensions.



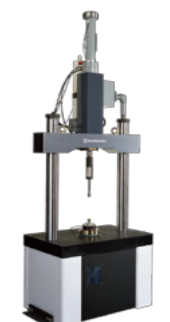
inspeXio SMX-225CT FPD HR
Microfocus X-Ray CT System



Cross Section Image of Model 18650
Lithium-Ion Rechargeable Battery



AUTOGRAPH AG-X plus
Universal Testing Machine



HITS-X
High-Speed Impact Testing Machine

Contributing to Improving CFRP and CFRTTP Performance and Reliability

Progress toward using lighter structural materials to improve fuel efficiency occurred earlier for aircraft than for other modes of transportation. Consequently, aluminum alloys and carbon fiber reinforced plastic (CFRP) materials have replaced steel as the main structural materials used for aircraft.

Meanwhile, efforts to reduce the environmental impact of automobiles have also accelerated, due to the popularity of electric vehicles (EV) and plug-in hybrid vehicles (PHV). Furthermore, automotive manufacturers are now trying to reduce the weight of the main structures and exterior panels of automobiles, just as aircraft manufacturers did, while maintaining the strength and safety of automobiles. One of the new materials being used for that purpose is carbon fiber reinforced thermoplastic (CFRTP). CFRTP is known to offer superior moldability and workability than the CFRP materials used for aircraft structures. Given the current boom in researching and developing CFRTP materials for use in automobiles, analysis and measurement technologies for evaluating new materials are essential for such R&D work. Analytical and measuring instruments are used for a diverse range of CFRTP evaluation applications, such as for determining the composition, molecular weight, chemical structure, or thermal properties of polymers, or for evaluating the mechanical properties of composite materials or for non-destructive inspection inside molding models. The range of such applications is also expected to expand to a whole new level in the future.

Environment/Energy

Contributing to Reducing Air, Water Quality, and Other Environmental Impacts and Promoting the Widespread Use of Renewable Energies

Society Challenges

As the global population continues to increase, it reached 7.6 billion in 2017 and is projected to exceed 9 billion by 2050, which could affect a wide variety of fields. One serious challenge it will cause is environmental problems. Given the potential problems with climate change, waste management, and air, water, and soil pollution, for example, stricter environmental regulations are being established for the manufacturing activities of companies and their products. The environmental challenges in each country are diverse and uniquely characteristic of their geographic location, economic conditions, and other circumstances. Environmental pollution is especially prominent in the Asian region, with significant environmental pollution due to urban development and increased economic activity in some regions, while others are facing new problems after achieving a certain amount of economic growth.

Percent of world population that lives in regions where air pollution exceeds air pollution standards

92^{*1}%

Percent of world-wide water effluents that are not treated

80% or more^{*2}

Source: *1 WHO report
*2 United Nations Report on World Water Assessment Programme

Value Provided

Supplying analytical/measuring instruments and industrial machinery for solving air, water, or soil pollution or other region-specific environmental challenges or for supporting renewable energy development

Contribution to SDGs



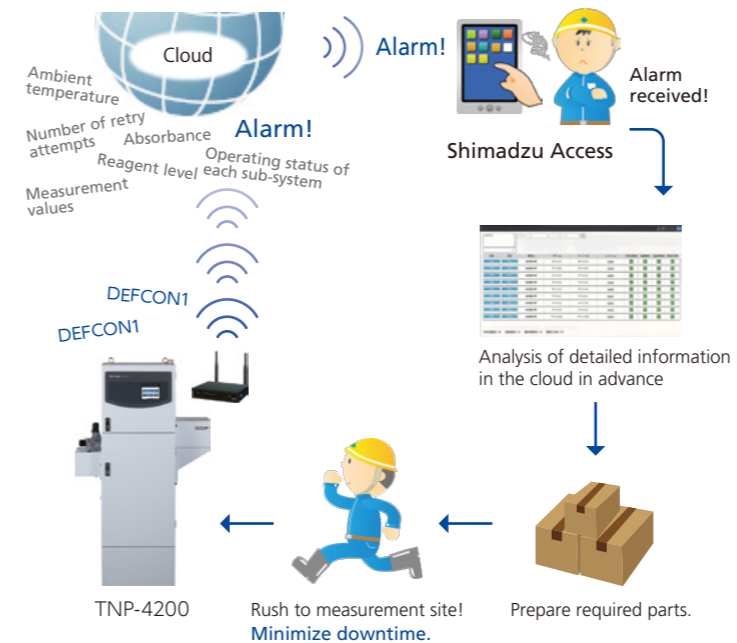
As societies look for ways to reduce their global environmental impact, stricter regulations are being established for manufacturing activities by companies and their products. Another challenge is the widespread use of renewable energies as an alternative to burning fossil fuels. Therefore, we will develop products that contribute to UN sustainable development goals (SDGs), such as products for monitoring global environmental conservation or for supporting the development of renewable energies.

Measures by Shimadzu Corporation

Contributing to SDGs Through Environmental Conservation Using Online Analyzers Equipped with IoT and/or M2M Technologies

Shimadzu online total nitrogen and phosphorus analyzers (TNP analyzers) are widely used to manage the concentration of nitrogen and phosphorus in effluent waters for compliance with total water pollutant load regulations. To prevent discharging water with high concentrations, more recent regulations require continuous data monitoring. Consequently, there is growing demand for TNP analyzers equipped with M2M functionality that enable instantaneous determination of instrument status, so that malfunctions can be prevented before they occur. Such systems can be used to continuously monitor measurement data or instrument sensing information via the cloud, which means customers can check data from their own office, rather than having to physically go to the instrument. Also, Shimadzu service companies can check the status before actually performing maintenance, so that customers can always operate the instruments without worry. We will promote the development of products that contribute to SDGs through environmental measurement of air, water, and soil environments, by continuing to add IoT and M2M functionality to gas emission analyzers, water quality analyzers, and various other online analyzer products, and also by expanding functionality that enables AI-based data analysis. We also intend to contribute to reforming customer working practices by offering labor-saving solutions.

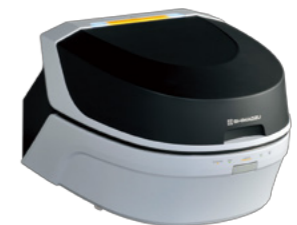
System Process Flow of TNP Analyzers



Renewable Energy Measures

In the renewable energy field, Shimadzu uses technologies and instruments cultivated as a broad-line manufacturer of analytical instruments and industrial machinery, to help customers with development, manufacturing, and quality assurance processes for applications such as lithium-ion batteries, fuel cells, solar power generation, biomass systems, and photocatalyst/artificial photosynthesis. For example, wood-based biomass power generation requires controlling the moisture content of wood fuel materials prior to combustion and measuring the presence and quantity of hazardous substances in the combustion ash. We contribute to solar power generation by supplying analytical data for development and quality assurance and by supplying Shimadzu turbomolecular pumps for creating high-vacuum environments essential for generating elements.

Given that the renewable energy field will require additional market growth and technological advancements in the future, we intend to continue working toward achieving innovation and a sustainable society through the use of Shimadzu technologies, products, and services, while also contacting cutting-edge companies more than ever before.



Shimadzu ICP mass spectrometer (upper) and X-ray fluorescence spectrometer (lower) useful for detecting hazardous substances from wood-based biomass power generation



Management of Creating Shared Value

We will endeavor to build stakeholder trust by achieving business growth while also fulfilling social responsibility.

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Overview of Corporate Governance

Basic Policy	We will establish and enhance systems for corporate governance as a core basis for our business management practices used to earn the trust of our stakeholders, achieve sustained growth for the Shimadzu Group, increase the corporate value in the medium and long term, ensure management transparency and fairness, and promote management dynamism by increasing the speed and boldness of decision-making and by implementing measures.
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History of Governance Reforms

We are continuously improving our corporate governance practices.

History of Corporate Governance Measures

	2006	2013	2014	2015	2016	2017
Strengthened Internal Controls	• Established Internal Audit Dept.					
Strengthened Auditing Functions		• Appointed one new outside director	• Increased number of outside directors from one to two		• Established criteria for independence of outside directors	• Increased number of outside directors from two to three
Clarified Managerial Responsibility		• Reduced number of directors from eleven to eight	• Shortened term for directors to one year			• Introduced a performance-based stock compensation system
Improved Accuracy and Speed of Executing Administrative Processes		• Introduced administrative corporate executive officer system and established Executive Committee				
Increased Corporate Governance Level				• Established a Corporate Governance Policy		

Organizational Status

Type of Organization	Company with Audit & Supervisory Board Members
Number of Directors (outside directors in parentheses)	Eight, including one woman (three, including two reported to the Tokyo Stock Exchange as independent directors)
Number of Auditors (outside auditors in parentheses)	Four (two, including two reported to the Tokyo Stock Exchange as independent directors)
Chair of the Board of Directors	Chairman (internal director)
Appointment Term of Directors	1 year
Adoption of Executive Officer System	Yes (appointed by Board of Directors)
Accounting Auditor	Deloitte Touche Tohmatsu LLC

Profiles of Directors and Audit & Supervisory Board Members



Akira Nakamoto

Representative Director,
Chairman of the Board
Chair of the Board of Directors

Apr. 1969 Joined Shimadzu Corporation
June 2000 General Manager, Analytical & Measuring Instruments Division
June 2000 Corporate Officer
June 2001 Director
June 2005 Managing Director
June 2007 Senior Managing Director
June 2009 Representative Director (current)
June 2009 President and Director
June 2013 President
June 2013 CEO
June 2015 Chairman of the Board (current)
June 2015 Chair of the Board of Directors (current)



Teruhisa Ueda

Representative Director, President
CEO

Apr. 1982 Joined Shimadzu Corporation
Oct. 2004 General Manager, Quality Assurance Department, Analytical & Measuring Instruments Division
June 2007 Corporate Officer
June 2007 Deputy General Manager, Analytical & Measuring Instruments Division
June 2011 Director
June 2011 General Manager, Analytical & Measuring Instruments Division
June 2013 Managing Executive Officer
June 2014 Senior Managing Executive Officer
June 2015 Representative Director (current)
June 2015 President (current)
June 2015 CEO (current)



Hiroshi Fujino

Director, Senior Managing
Executive Officer
In charge of risk management
General Manager,
Aircraft Equipment Division

Apr. 1979 Joined Shimadzu Corporation
June 2005 General Manager, International Marketing Division
June 2007 Corporate Officer
June 2009 General Manager, Corporate Strategy Planning Department
June 2012 Director (current)
June 2012 In charge of corporate strategy planning and investor relations
June 2013 Managing Executive Officer
June 2013 In charge of public relations
June 2015 Senior Managing Executive Officer (current)
June 2015 In charge of global environmental management
June 2017 In charge of risk management (current)
June 2017 General Manager, Aircraft Equipment Division (current)



Yasuo Miura

Director, Senior Managing
Executive Officer
In charge of finance/accounting
and marketing
General Manager,
Tokyo Office

Apr. 1980 Joined Shimadzu Corporation
Apr. 2005 General Manager, Corporate Strategy Planning Department
June 2007 Corporate Officer
June 2009 President, Shimadzu Europa GmbH (Germany)
June 2013 Director (current)
June 2013 Managing Executive Officer
June 2013 In charge of finance (currently finance/accounting) and marketing (current)
June 2015 General Manager, Tokyo Office (current)
June 2017 Senior Managing Executive Officer (current)



Koji Furusawa

Director, Senior Managing
Executive Officer
In charge of corporate strategy
planning, investor relations,
and public relations

Apr. 1979 Joined Shimadzu Corporation
June 2007 Managing Director, Shimadzu (Hong Kong) Ltd.
June 2009 Corporate Officer
June 2013 Managing Executive Officer
June 2017 Director (current)
June 2017 Senior Managing Executive Officer (current)
June 2017 In charge of corporate strategy planning, investor relations, and public relations (current)



Minoru Sawaguchi

Outside Director
Lawyer
Visiting Professor of the University
of Tokyo Graduate Schools
for Law and Politics

Apr. 1993 Registered as attorney-at-law
Apr. 1993 Joined Mori Sogo Law Office (currently Mori Hamada & Matsumoto) (current)
June 2013 Director, Shimadzu Corporation (current)



Taketsugu Fujiwara

Outside Director
Standing Counsellor of
Asahi Kasei Corp.
Outside Director of KOKUYO Co., Ltd.
Outside Director of IHI Corporation

Apr. 1969 Joined Asahi Chemical Industry Co., LTD. (currently Asahi Kasei Corp.)
June 2000 Director, Asahi Kasei Corp.
Apr. 2009 Vice-Presidential Executive Officer, Asahi Kasei Corp.
June 2009 Director, Asahi Kasei Corp.
Apr. 2010 President & Representative Director, Presidential Executive Officer, Asahi Kasei Corp.
Apr. 2014 Vice-Chairman, Asahi Kasei Corp.
June 2014 Director, Shimadzu Corporation (current)
June 2015 Standing Counsellor, Asahi Kasei Corp. (current)



Hiroko Wada

Outside Director
Representative of Office WaDa

Apr. 1977 Joined Procter & Gamble Sunhome Co., Ltd. (currently Procter & Gamble Japan)
Jan. 1998 Vice President, Procter & Gamble U.S., responsible for corporate new venture Asia
Mar. 2001 President, Dyson Limited
Apr. 2004 President and CEO, Toys "R" Us, Japan
Nov. 2004 Established Office WaDa (current)
June 2016 Director, Shimadzu Corporation (current)

Hiroiyuki Fujii

Senior Audit & Supervisory Board Member

Apr. 1981 Joined Shimadzu Corporation
Apr. 2005 General Manager, Human Resources Department
June 2007 Corporate Officer
June 2009 Director
June 2013 Senior Corporate Auditor (currently Senior Audit & Supervisory Board Member)



Koji Uematsu

Audit & Supervisory Board Member

Apr. 1975 Joined the Mitsubishi Bank, Ltd. (currently MUFG Bank, Ltd.)
Sep. 2003 General Manager, Business Strategy and Development, the Bank of Tokyo-Mitsubishi, Ltd. (currently MUFG Bank, Ltd.)
June 2005 Joined Shimadzu Corporation
June 2005 Corporate Officer
Apr. 2006 General Manager, Kansai Office
June 2007 Managing Executive Officer
June 2011 Corporate Auditor (currently Audit & Supervisory Board Member)



Takashi Iida

Outside Audit & Supervisory Board Member

Apr. 1974 Registered as attorney-at-law
Apr. 1974 Joined Mori Sogo Law Office (currently Mori Hamada & Matsumoto)
Apr. 2006 President, Daini Tokyo Bar Association
Apr. 2006 Vice President, Japan Federation of Bar Associations
Jan. 2012 Established Kowa Law Office (current)
June 2012 Corporate Auditor (currently Audit & Supervisory Board Member), Shimadzu Corporation (current)



Masahiro Nishio

Outside Audit & Supervisory Board Member

Nov. 1974 Joined Daiwa Accounting Office (current KPMG AZSA LLC)
Mar. 1978 Became a chartered accountant
Jan. 2015 Established Nishio Certified Public Accountant Firm (current)
June 2015 Corporate Auditor (currently Audit & Supervisory Board Member), Shimadzu Corporation (current)



Messages from Outside Directors and Outside Audit & Supervisory Board Members

"Fueki Ryuko" Is the Key Characteristic of Shimadzu Businesses

In Japanese, the term "fueki ryuko" is used to describe things that are both permanent and transitory, where "fueki" refers to unchanging core characteristics and "ryuko" constant change based on seeking what is new.

This term is best known as a principle for haiku poetry by the poet Matsuo Basho, but it perfectly describes Shimadzu as well. Shimadzu values technology and continuously takes on the challenge of solving the problems of an ever-changing world.

It has already been three years since I was first appointed as an outside director. In that role, I am especially mindful of two things. The first is to express opinions about Shimadzu management based on benefiting all stakeholders and achieving sustained growth. Second, though as a Director it is my duty to supervise the execution of business, I try to be as supportive of management as possible.

To the dynamic action-oriented management style of Shimadzu, I say "Go for it!"



Taketsugu Fujiwara Outside Director

Contributing to Maintaining and Improving Trustworthiness as a Global Company

The economic and social progression toward globalization can be quite remarkable.

Shimadzu products are purchased and used throughout the world, with product features that are subject to many laws and regulations. Therefore, it is essential for Shimadzu to be thorough in preventing any legal or regulatory violations, not only in terms of Shimadzu manufacturing and selling products and services in respective countries and regions, but also in terms of violations by customers that use Shimadzu products around the world. Consequently, as a global company, establishing and maintaining capabilities globally is an essential prerequisite for earning the trust of customers throughout the world.

Given the trend toward globalization, as an Outside Audit & Supervisory Board Member, I see my role as helping to maintain and increase trust in Shimadzu, not only with respect to corporate compliance and product quality, but also with respect to Shimadzu business activities in general.



Takashi Iida Outside Audit & Supervisory Board Member

Reforming Shimadzu's Human Resources to Promote Innovation

Innovation has been Shimadzu's engine of growth ever since the company was founded about 140 years ago.

For Shimadzu businesses to continue growing, not only in Japan, but also globally, given the increasingly fast pace of changes in the business environment, Shimadzu needs to reform the capabilities of its human resources (both organizationally and as individual employees). Shimadzu cannot allow human resource limitations from acting as a brake on the products and services that can be generated from new ideas.

Therefore, Shimadzu needs to reassess their operating methods and systems thus far, implement organizational reforms, and engage in improving the capabilities of each individual employee. Organizations that take the initiative to learn new abilities on their own and fully utilize the abilities already available will surely be successful. Merely waiting will surely fail. Therefore, I want like-minded employees to take each other's hand and lead others toward new ways of doing things.

As an outside director, I intend to freely offer advice and assistance necessary for Shimadzu to strive toward achieving its vision.



Hiroko Wada Outside Director

Monitoring the Balance Sheets of Subsidiaries Outside Japan

In 2015, when I was appointed Outside Audit & Supervisory Board Member, a revolution in corporate governance based on a corporate governance code was just getting started among Japanese companies. During the three years since then, as I have witnessed revolutionary changes made by the Board of Directors, I admire Shimadzu that takes the advice of outside directors, who also serve as a representative of other stakeholders, and seriously and quickly implements corresponding reforms.

From the perspective of the Outside Audit & Supervisory Board Member, I intend to focus on disclosing appropriate information to the capital markets regarding Shimadzu initiatives in the healthcare field, which is the most important field in the medium-term management plan.

Furthermore, as an outside auditor that specializes in the financial field, I intend to continue monitoring the status of risk management and internal control systems in place at the nearly 50 subsidiaries located in 25 countries outside Japan and also monitor the balance sheets at those subsidiaries, including their cash flow on a consolidated basis.



Masahiro Nishio Outside Audit & Supervisory Board Member

Corporate Governance

Compliance with Corporate Governance Codes

To achieve sustained growth for the Shimadzu Group and increase the corporate value in the medium and long term, we intend to instill the spirit of the corporate governance codes within our corporate management practices.

The Corporate Governance Policy was established in December 2015 as a declaration of our stance regarding implementing the corporate governance codes in practice in concrete terms.

In addition to simply complying with corporate governance codes, corporate governance was further strengthened by reviewing the policy in November 2016 and June 2017 to expand and improve the measures that serve as core management practices. The Audit & Supervisory Board and its members are designated as the institutions for auditing.

To clarify the managerial responsibility of directors, directors are appointed for a term of one year. In addition, the Board of Directors appoints the chairman and other administrative corporate executive officers.

Corporate Governance Policy

We will engage in measures consistent with the Corporate Governance Policy. The following are the main measures for FY 2017.

With respect to 2. Securing the Rights and Equal Treatment of Shareholders, in June 2017 a careful review of how anti-takeover measures involve and affect Shimadzu resulted in a decision to abolish the measures. We will not unfairly prevent the right of shareholders to sell shares based on a tender offer, while also endeavoring to build the trust and assessment level of shareholders. With respect to 3. Ensuring Appropriate Information Disclosure and Transparency, we have endeavored to ensure transparency by disclosing even non-financial negative information (such as the Notice Regarding a Suspension by the Japanese Ministry of Defense). Regarding 5. Responsibilities of the Board of Directors, the board created the medium-term management plan, introduced a performance-based stock compensation system, promoted achieving sustained growth and increasing medium and long-term corporate value, and improved profitability and capital efficiency, among other things.

Basic Corporate Governance Policies

1	Appropriate Cooperation with Stakeholders	Fully recognizing that sustained growth of the Shimadzu Group and medium and long-term creation of corporate value is the result of resources provided or contributed by stakeholders, we shall endeavor to cooperate appropriately with stakeholders and build a relationship of trust. The Board of Directors, Directors, and administrative corporate executive officers (executive officers with specific duties contracted by Shimadzu or general corporate officers employed by Shimadzu, whereas the Chairman, President, and Senior Managing Executive Officers, and Managing Executive Officers are considered executive officers with specific duties) shall serve a leadership role in developing a corporate culture that respects the rights and perspective of stakeholders and healthy business practices.
2	Securing the Rights and Equal Treatment of Shareholders	To make sure shareholder rights are ensured in real terms, we shall provide an environment for exercising shareholder rights. In consideration of minority and foreign shareholder rights and equal treatment, we shall endeavor to ensure real fairness for all shareholders.
3	Ensuring Appropriate Information Disclosure and Transparency	To build a relationship of trust with stakeholders, we believe it is essential to disclose information with high added value whenever appropriate. In real practice, that means actively posting information on the company website in both Japanese and English, including not only information disclosure required by laws and regulations, but also financial information, such as the medium-term management plan and performance information, non-financial information, such as about the environment, society, and governance (ESG), and any other information judged to be important for developing a deeper understanding of Shimadzu business activities, regardless of whether that information is positive or negative for Shimadzu. Considering that disclosing or providing such information provides a foundation for constructive dialogue between the Board of Directors and shareholders, we will endeavor to ensure the disclosed information is accurate, easy for users to understand, and is useful.
4	Dialogue with Shareholders	To achieve sustained growth and increase corporate value over the medium and long-term, we believe it is essential to have an active and constructive dialogue with shareholders and investors. Therefore, we will establish investor relations (IR) capabilities, mainly consisting of the Director in Charge of IR, in an effort to create additional opportunities beyond annual shareholders' meetings for developing a deeper understanding of Shimadzu management strategies.
5	Responsibilities of the Board of Directors	The Board of Directors shall promote sustained growth and increased corporate value over the medium and long-term and shall improve profitability, capital efficiency, and so on, by fulfilling the following duties based on their fiduciary responsibility and accountability to shareholders. (1) Indicate the direction and vision for where Shimadzu is headed, such as corporate strategies. (2) Establish an environment, by means of administrative corporate executive officers, that facilitates taking risks necessary for deploying businesses in a mobile, active, and flexible manner. (3) Provide highly effective supervision of administrative corporate executive officers and directors by evaluating business performance and business execution from an independent and objective perspective.

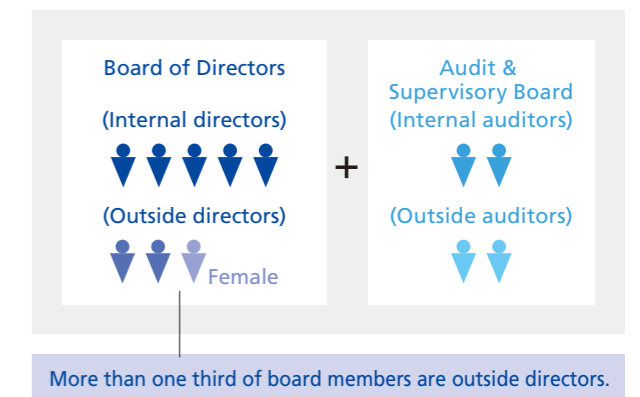
Corporate Governance System

The Board of Directors is responsible for deciding and monitoring the execution of important administrative processes. Each month the board decides and discusses a topic separate from the board agenda, such as the status of implementing the medium-term management plan that began in FY 2017 or business strategies. More than one third (three) of the eight Board of Directors members are outside directors, which increases management transparency and objectivity. By having inside directors, familiar with business operations and circumstances within the company, discuss issues with outside directors, who have extensive experience and knowledge and outstanding abilities and insights, issues can be discussed from various perspectives to make and monitor appropriate decisions. The diverse composition of outside directors includes a lawyer, global business executive, and woman executive with extensive global marketing knowledge.

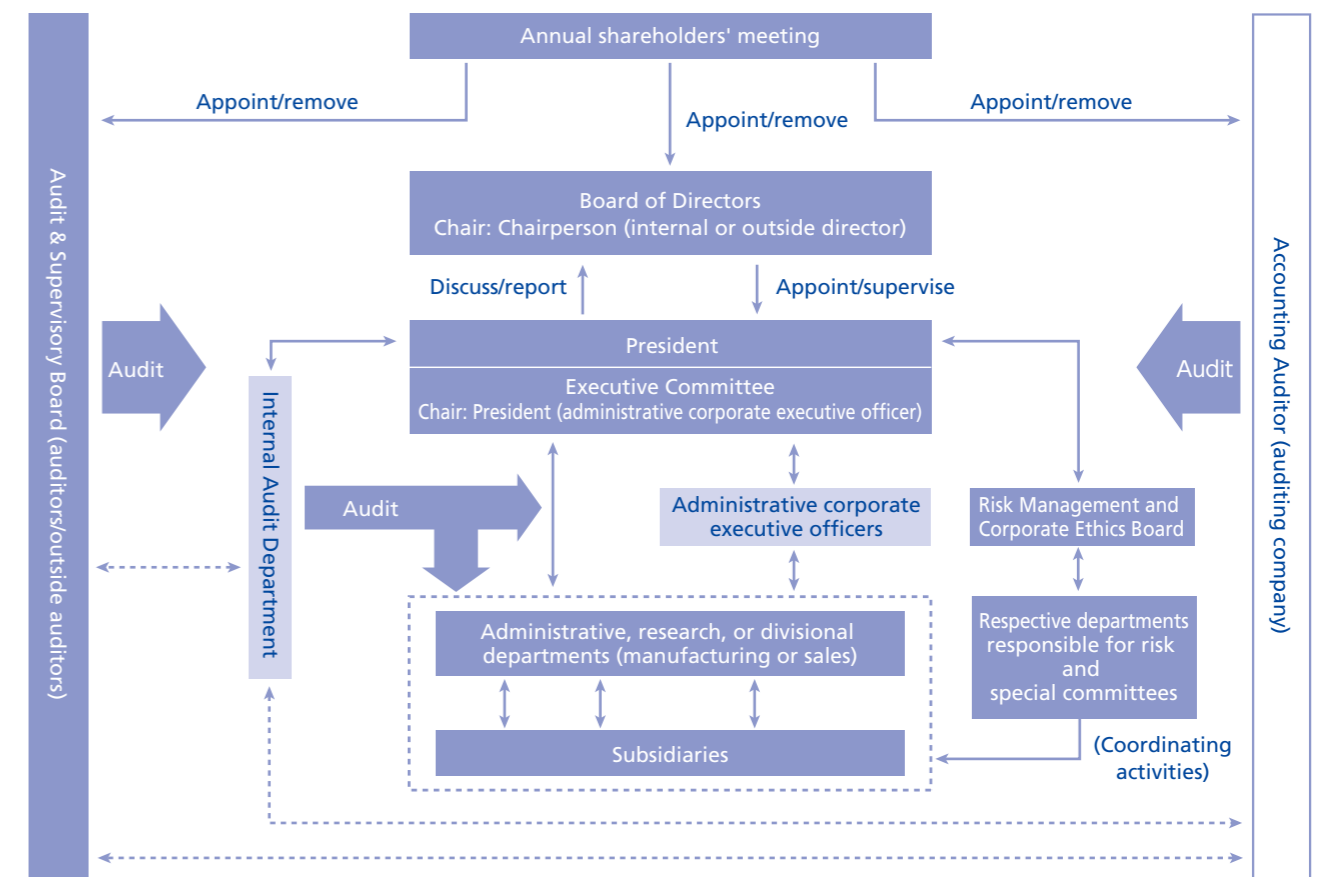
A system of corporate auditors is used to audit the legality and appropriateness of management operations, with two internal and two outside Audit & Supervisory Board members. Corporate Auditors and the Audit & Supervisory Board members attend Board of Directors

Meetings, where they proactively execute auditing functions, such as by expressing their opinions or exchanging views with directors or administrative corporate executive officers. The President, administrative corporate executive officers, and the Executive Committee are designated as the institutions for appropriately and quickly executing administrative processes based on decisions made by the Board of Directors.

Composition of the Board of Directors and Audit & Supervisory Board



Corporate Governance System



Corporate Governance

Reasons for Appointing Independent Directors

The Board of Directors specifies regulations for outside directors and creates and releases criteria for determining the independence of candidate independent outside directors. Furthermore, effort is made to select candidates expected to contribute frank, lively, and constructive considerations during Board of Directors meetings.

Appointed independent outside directors contribute to strengthening the system for executing appropriate administrative processes by offering valuable suggestions regarding management in general and compliance, based on their extensive experience and outstanding capabilities/discernment.

Reasons for Appointing Independent Directors and Description of Main Activities

Independent Director	Name	Reasons for Appointment	Description of Main Activities
Outside Directors	Taketsugu Fujiwara	Appointed due to extensive management experience and broad knowledge acquired through many years of managing a global company.	Attended 15 of 15 Board of Directors meetings
	Hiroko Wada	Appointed due to diverse management experience, such as from being a corporate director of a multinational company and a chief executive officer of a Japanese subsidiary of a foreign company, and broad knowledge about global marketing.	Attended 15 of 15 Board of Directors meetings
Outside Audit & Supervisory Board Members	Takashi Iida	Appointed due to extensive specialized knowledge and experience from practicing law for many years, from managing a law office, and from serving as an outside director or outside corporate auditor for various companies.	Attended 15 of 15 Board of Directors meetings Attended 17 of 17 Audit & Supervisory Board meetings
	Masahiro Nishio	Appointed due to extensive specialized knowledge and experience from being a certified public accountant and due to his experience outside Shimadzu, which is expected to be useful as a corporate auditor.	Attended 15 of 15 Board of Directors meetings Attended 17 of 17 Audit & Supervisory Board meetings

Director Compensation System

The composition of director compensation is determined based on the improvement in results achieved during each fiscal year and the director's management duties with respect to increasing medium and long-term corporate value. In FY 2017, a new performance-based stock compensation system was introduced to clarify the correspondence between director compensation and Shimadzu stock value.

Composition and Method for Determining Director Compensation

Title	Composition/Determination Method
Directors (Excluding Outside Directors) and Executive Officers with Specific Duties	1. Fixed Compensation Determined based on position or title, using the compensation levels at other companies surveyed by an outside organization as an important reference index.
	2. Short-Term Performance Compensation Determined by comprehensively taking into account overall results and other factors for the Shimadzu Group during each fiscal year.
	3. Performance-Based Stock Compensation System The range varies between 50 % and 200 %, depending on the degree to which medium-term management plan performance targets were achieved, for example, during the corresponding three years.
Outside Directors	Fixed compensation only

Total Value of Compensation to Directors and Auditors for FY 2017

Total compensation to ten directors: 396 million yen (including 33 million yen to three outside directors)
Total compensation to four Audit & Supervisory Board members: 78 million yen (including 19 million yen to two outside Audit & Supervisory Board members)

*1: Includes two directors that left the board on June 29, 2017.
 *2: The total compensation amount includes 43 million yen in expenses recorded assuming they would be paid to five directors (excluding outside directors) for the corresponding consolidated fiscal year, based on the performance-based compensation system applicable for Shimadzu directors (excluding outside directors and non-residents) and Shimadzu executive officers with specific duties (excluding non-residents).

Internal Control System

To further improve and strengthen the internal control system, corporate ethics, compliance, and risk management operations in the Shimadzu Group function as a single system, with the effectiveness of that system verified as appropriate. Based on that understanding, an internal control system has been established to ensure the duties of executives are executed in accordance with applicable laws/regulations and our Articles of Incorporation, and to ensure business processes within Shimadzu Corporation and Shimadzu Group companies are performed appropriately and efficiently.

Evaluating the Effectiveness of the Board of Directors

We analyze and evaluate the effectiveness of the Board of Directors for the purpose of making continuous organizational or operational improvements and ensure it functions properly. The third such evaluation involved conducting a survey

in FY 2018 about the Board of Directors' effectiveness. An analysis and evaluation of the survey results were then deliberated at a Board of Directors meeting. An overview of that process was published in the Corporate Governance Report.

Results from Evaluating the Effectiveness of the Board of Directors

Criteria for Evaluating Effectiveness	FY 2017(Applicable year: FY 2016)	FY 2018(Applicable year: FY 2017)
Composition of the Board of Directors	Evaluation results for current size and composition were positive, exceeding the previous year.	Evaluation results for the current size and composition were positive, with a high Board of Directors composition level comparable to the previous year.
Operation of Board of Directors Meetings	The frequency and length of each meeting were considered appropriate and an atmosphere and environment that allowed all members to freely express their views were maintained, which were positive evaluation results roughly similar to the previous year. On the other hand, efforts to improve the content and quantity of documentation provided were to be made continuously.	The frequency and length of each meeting were considered appropriate and an atmosphere and environment that allowed all members to freely express their views were maintained, which were positive evaluation results similar to the previous year. On the other hand, efforts to operate the meetings more efficiently and improve the content, quantity, and timing of provided documentation are to be made continuously.
Roles and Responsibility of the Board of Directors	We received high evaluation results for actively and constructively discussing the outline, policies, and strategies used to prepare the new medium-term management plan and appropriately discussing the direction and vision the company should pursue in the plan, which was a remarkable improvement from the previous year. This year, we will provide an opportunity at Board of Directors meetings to adequately discuss how to follow up on those results.	We received positive evaluation results for following up on important issues from the medium-term management plan and discussing them divided over several Board of Directors meetings, but we will engage in deeper discussion about the long-term vision Shimadzu should pursue.
Support for and Cooperation with Directors and Audit & Supervisory Board Members	Outside directors were briefed appropriately about the agenda before Board of Directors meetings and necessary information was exchanged and shared appropriately among outside directors, which was an improvement from the previous year.	Necessary information was exchanged and shared appropriately among outside directors, between outside directors and Audit & Supervisory Board members, and coordination with Accounting Auditor was appropriate.
Self-Assessment by Directors	All directors adequately understood the basic philosophy of the company, endeavored to achieve that philosophy, and had spent adequate time and effort fulfilling their roles and responsibilities as directors.	All directors adequately understood the basic philosophy of the company, endeavored to achieve that philosophy, and had spent adequate time and effort fulfilling their roles and responsibilities as directors, which is a similar result as the previous year.
Status of Measures to Address Issues Identified in the Effectiveness Evaluation Results Last Year	An environment where outside directors could freely access and view materials was provided, but further improvements were to be made to ensure adequate time for reviewing the materials in advance.	Evaluation results indicated improvements continued to be made for supporting outside directors, but we will improve the effectiveness of support by improving the timing of briefing the outside directors and having those involved in executing measures explain the projects in advance in some cases.

Corporate Ethics

Basic Policy

For Shimadzu, who operates businesses globally, trust from society is essential for our business activities. Therefore, given that compliance should be prioritized above all else, we have specified the following five principles of conduct in the corporate code of ethics, which is a guideline for employee behavior. As a global company, we strive to conduct our daily activities in a manner that earns trust throughout the world and provides employees with a company where they can work with a sense of pride.

1. Customer-oriented approach
2. Fairness and transparency
3. Dialogues with stakeholders
4. Contribution to society and global environment conservation
5. Respect for the creativity and individuality of employees

Competing and Conducting Transactions Fairly

Our CSR Charter, and other policies subject to that Charter, specify that we will observe all applicable laws, regulations, and other social norms, and act in an open and fair manner, in our business activities that are developed in various countries or when representing the company in our private lives.

- We shall conduct business transactions fairly and using common sense.
- We shall not engage in activities aimed at unfairly restricting transactions and eliminating free competition.
- We shall maintain a healthy and normal relationship with politics and government.
- We shall not, in the course of our duties, interact with public officials, private business partners, or affiliates in a manner that violates the law or socially-accepted practices.
- We shall not use the company unfairly for our personal benefit or abuse our position of authority.

Improving Transparency of Relationships with Medical and Other Institutions

In order to be a company that can obtain the trust of society, we have increased the transparency of relationships with medical institutions and others whose cooperation is essential for developing, manufacturing, importing, and selling medical devices by publishing a Guideline for Transparency of Relationships with Medical and Other Institutions and disclosing all funds provided to medical institutions or other relevant parties.

Export Control System

As a company that contributes to maintaining international peace and safety, we implement appropriate import and export controls in accordance with export control policies practiced by international society (Multilateral Export Control Regime). Therefore, we have established an export control system, with our President as the chief responsible officer, and have specified internal export control regulations, to ensure we conduct strict applicability reviews, transaction reviews, and so on, in compliance with Japanese Foreign Exchange and Foreign Trade Act and other applicable laws and regulations.

Internal Audits

Corporate business activities in specialized fields are monitored by internal audits conducted by respective departments, such as sales, research and development, or manufacturing, and by corporate administrative departments.

In addition, an Internal Audit Department (with six internal auditors) is established, which is directly under the president, to perform internal audits from a perspective that is independent from the normal hierarchy for executing administrative processes, including for Group companies, and to evaluate and ensure the effectiveness of internal controls.

Measures to Instill Awareness of Corporate Ethics

As measures for instilling and fostering employee awareness of corporate ethics, corporate ethics and compliance training based on e-learning or study booklets is conducted annually at the Head Office and Group companies in Japan. In addition, a corporate ethics awareness survey is conducted to measure the level of employee awareness and adoption level of corporate ethics, which we use for future activities.



Corporate Ethics/Compliance Study Guide

Provision of a Corporate Ethics Consultation and Notification Contact Points

To prevent corporate ethics problems, or identify and address them as early as possible, all full employees and other personnel working in the Shimadzu Group have been informed that contact points have been established within and outside the company for consultation and notification. In response to such consultations or notifications, personnel at the contact points can cooperate with relevant departments to investigate, implement corrective actions, and/or implement measures to prevent recurrence, as necessary. Rules are also established to protect personnel that consult or notify the contact points, such as rules that prohibit unfavorable treatment.

Supply Chain Management

Basic Policy

As a manufacturer that operates businesses globally, we procure items from a large number of suppliers. Given that procurement is a basic function that serves as the foundation for other business activities, our procurement policy is to engage in fair transactions, build partnerships with suppliers, and fulfill our corporate social responsibility, with transactions conducted based on the fundamental principles of mutual benefit and EQCD (environment, quality, cost, and delivery). We specify procuring items from suppliers that value social responsibility, that respect human rights throughout their supply chain, and strive to minimize their environmental impact.

Eliminating Human Rights Violations from the Entire Supply Chain

Requirements for suppliers in the procurement policy are summarized in the CSR Procurement Policy, which clearly specifies fulfilling social responsibility for respecting human rights throughout the entire supply chain. In addition, all suppliers are notified in writing and required to comply with the policy.

We also surveyed suppliers both in Japan and outside Japan to confirm they have measures for respecting human rights and to check for any human rights violations in their business practices. That survey revealed no child labor, forced labor, or other such problems. If any such problem was discovered, we would require the supplier to promptly correct the problem. We also continue to survey suppliers on an ongoing basis to ensure there are no human rights violations in their business practices or supply chains, such as child labor, forced labor, or human trafficking. Future contracts with suppliers will clearly prohibit child labor, forced labor, or human trafficking to ensure transactions do not involve either Shimadzu or the supplier in any human rights violations.

Measures and Policies for Conflict Minerals

We have established capabilities for avoiding conflict minerals* within Shimadzu and, in FY 2016, established the Shimadzu Group Policy Regarding Conflict Minerals. It prohibits using any raw materials that contain conflict minerals that directly or indirectly fund armed groups or involve actions against humanity. If any parts or raw materials used in Shimadzu products are discovered to contain any conflict minerals, Shimadzu will immediately meet with the supplier to discuss appropriate actions, such as immediately discontinuing the use of such part or raw material. That does not mean Shimadzu will not accept any conflict minerals produced in the Democratic Republic of Congo or its adjoining countries, but rather that Shimadzu will only accept those that are procured in accordance with appropriate laws that prevent funding armed groups in those regions (certified as DRC conflict-free). By managing transactions in accordance with the Organisation for Economic Co-operation and

Development (OECD) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and by investigating refineries using the Conflict Minerals Reporting Template (CMRT), which is based on the Conflict-Free Sourcing Initiative (CFSI), we are implementing measures to understand the status throughout the entire supply chain and avoid using such materials.

* The term conflict mineral refers to four types of minerals (gold, tin, tantalum, and tungsten) mined in the Democratic Republic of the Congo and nine surrounding countries, which are known to serve as a funding source for armed groups.

Compliance with the Modern Slavery Act 2015

Shimadzu opposes slave labor and human trafficking, recognizes internationally declared human rights, and conducts business practices accordingly. We are also in the process of complying with the Modern Slavery Act 2015 that Britain enacted in 2015. Therefore, each year since October 2016, Shimadzu has been publishing the measures implemented during that year and planned for the future. The measures for FY 2017 are scheduled to be published in September 2018. Currently, no cases of problems with child labor or forced labor have been discovered in our procurement activities. If any are discovered, corrections will be promptly implemented to quickly resume business activities that are respectful of human rights.

Informational Presentations for Suppliers

It is essential that we form a partnership with suppliers, who are central to our supply chain, to ensure human rights are respected in procurement activities and promote reducing our environmental impact. To promote a deeper understanding of our measures, each year we conduct informational presentations in two locations, Kyoto and Tokyo, for suppliers, which is attended by over 500 companies each year.



Informational Presentations for Suppliers

Human Resource Strategy

Risks and Opportunities

Human resources provide a critical resource for Shimadzu business activities intended to solve challenges in society in collaboration with partners around the world. To increase our corporate value given the declining birth rate, aging population, and shrinking labor force in Japan, it is essential that we keep hiring, training, and retaining promising

human resources. Therefore, we have been developing human resources, implementing working practice reforms, managing diversity, promoting health management, and engaging in occupational health and safety practices according to the following basic policy.

Basic Policy

■ Human Resource Development

We believe it is important to develop employee characteristics and capabilities such as a desire to take on challenges, exceptional expertise, innovativeness, ability to work cooperatively with partners, self-discipline, and teamwork. In particular, we are strengthening measures in three areas—developing business leaders that can drive business activities as a leader of an organization, expanding/improving skill improvement programs that increase the expertise of employees, and developing global human resources able to work together with partners around the world.

■ Working Practice Reforms

We are implementing measures throughout the Group to improve both individual skills and organizational productivity. In addition to improving measures to improve the skills of individual employees, we are also implementing business process reforms by reviewing existing systems and business processes and implementing the latest technologies, such as AI, IoT, or robotics.

■ Diversity Management

We promote diversity and inclusion for the following three reasons. (1) Combining diverse types of knowledge and senses of value will provide a source for new science and technology sought by Shimadzu. (2) We intend to create a workplace where employees can fully utilize their strengths, regardless of differences in sex, nationality, age, or gender identity/orientation (such as LGBT), or handicaps or any other work limitations they may have. (3) Acceptance as a member of the workplace serves as the foundation for employee trust in company and shared corporate value.

■ Health Management

We believe that ensuring the physical and mental health of each employee will lead to increasing corporate value. Therefore, we have been working to establish systems and create workplace environments that allow employees to work without worrying about their health. In October 2017, we published our Health Declaration and began promoting health management. We also started offering new healthcare technologies and services created by Shimadzu to employees.

■ Occupational Health and Safety

Starting in 1921, Shimadzu designated a factory safety day to implement safety and health activities based on the belief that company activities cannot be separated from preparing a safe and healthy workplace environment. In addition to complying with applicable laws, regulations, and company regulations related to occupational safety and health, we also provide safety and health training, where veteran employees teach safety skills to newer employees, for example, and also ensure thorough risk assessment.

Human Resource Development

Key Accomplishments During FY 2017

Developing Business Leaders

This is the third year we have conducted management training classes for executive management candidates. Based on case studies, participants learn the business literacy and decision-making skills required by executives. They also develop a management vision for Shimadzu based on individual research of companies, and challenges at Shimadzu. We also continuously train leaders for organizations at Group companies. We have conducted manager training at the Head Office for Group companies in Japan since 2005 and for Group companies outside Japan since 2015.



Manager Training for Group Companies

Expanding/Improving Skills Training Programs

Shimadzu offers three types of skills training programs—programs to improve interpersonal communication for work or leadership, programs to improve work skills, such as machinery design or English language skills, and programs to improve business skills, such as problem-solving or marketing.

Of those, interpersonal skills training programs are mainly categorized by organizational hierarchy level, such as new employees or managers. Work skills training programs are categorized by job type, such as R&D or sales, and improve employee skills through on-the-job training. To offer business skills training opportunities to more employees, an e-Learning system was introduced in 2017 to newly offer open-type marketing skills training and also offer a broad range of other self-improvement classes for relevant skills, such as problem-solving.



Open-Type Training

Training Global Human Resources

This is the sixth year since 2012 when we started sending young employees for training at a location outside Japan to develop global human resources. Thus far we have sent 41 employees to 12 countries. In addition to training employees at Group companies outside Japan, we are also cooperating with partners around the world to train employees at research institutions or international institutions outside Japan. Also, to ensure that feedback from our business operations outside Japan is reflected in training measures, in 2017 we held a global conference in Singapore.

Attended by 19 human resource managers from 15 Group companies outside Japan, participants gave presentations on the measures implemented at their respective companies and discussed topics ranging from hiring and training to organization development, and also discussed the current status of human resources and organizations contributing to business operations outside Japan.



Local Training Outside Japan

Employee Comment ▶▶ Survey of Participants in Manager Training for Group Companies Outside Japan

- Participation from so many different countries seemed to demonstrate the power of diversity.
- In addition to providing an opportunity to properly learn about Shimadzu's history and strategies, I was also able to gain a deeper understanding of business activities outside the scope of my regular job.

Working Practice Reforms

Key Accomplishments During FY 2017

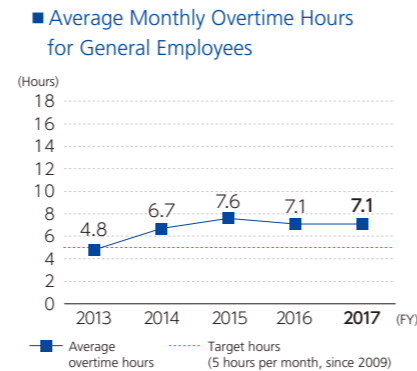
Diversity in Working Practices

Starting in January 2017, the number of "no-overtime days" was increased from one to three days per week (Mondays, Wednesdays, and Fridays) and the name was changed to "refresh day" to help employees visualize how they should spend the time after leaving work on those days. For example, to help employees engage in activities to improve their abilities, Mondays were designated as "skills improvement days" and an e-learning system was introduced, which employees can use for personal development to solve problems or improve skills, for example. Similarly, Wednesdays are designated as "healthcare days" and Fridays as "communication days" to promote employee health improvement and communication with others within and outside the company. Also, to improve the quality of work and promote diverse working styles based on an appropriate work-life balance and employee independence, an hourly-based paid vacation day system and a telecommuting system for employees involved in child care or nursing care were introduced in December 2017. Starting from September 2017, the scope of the flextime system implemented in the R&D department will be expanded to include employees involved in sales outside Japan and accommodate the need for more diversity in working styles.

Improving Work Efficiency

In addition to promoting personal development, working practice reforms must also improve organizational productivity. For example, we have been actively engaged in reassessing how we perform our work, using AI, IoT, and RPA* technologies to improve the efficiency of business processes and streamline meetings, and establishing paperless operations. To promote deploying RPA technologies throughout the company, in 2017 training workshops were conducted for applicable persons in charge at each department. In the Medical Systems segment, RPA technology was also introduced for automatically entering purchase order data. Additionally, we started using an AI-based digital assistant for the internal computer help desk. Currently, the assistant helps improve the accuracy of responses to employee questions and is also being deployed for responding to inquiries regarding other business processes.

* RPA is an acronym for robotic process automation.



Tea Sommelier Workshop Conducted on a Refresh Day

Employee Comment ▶▶ Akinori Hashimoto

Manager, IT Promotion Group, Information and Communications Technology Unit, Business Systems Management Department

I participated in the working practice reforms project as the leader of the IT Promotion Group. In 2017, the group introduced robotic process automation (RPA) as a tool for automating standardized business processes using a computer. Now we are starting to reap the benefits from accomplishing simple time-consuming computer tasks more quickly and accurately. Therefore, we intend to implement business process reforms that involve introducing information technologies in the future as well.



Diversity Management

Key Accomplishments During FY 2017

Utilizing Diversity in Human Resources

Before diversity can be promoted, it is important that employees understand the purpose of diversity and our current diversity status. In 2017, in addition to conducting a Diversity Management Workshop for executive managers to learn about the key elements of promoting diversity, we also established methods for confirming relevant challenges and measures, such as by conducting employee opinion surveys via our intranet. We not only actively recruited non-Japanese new university graduates and experienced personnel, but we also cooperated with relevant organizations outside the company and participated in networking events, such as "Team Spring!," "Future Forum for High School Students," and the "Tobitate! (Leap for Tomorrow) Study Abroad Initiative," to promote fostering next-generation human resources.

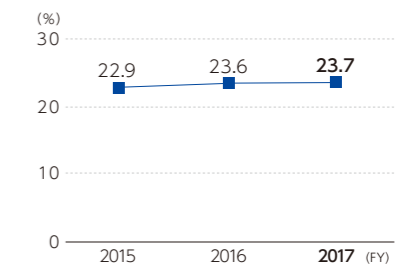


Diversity Management Workshop (Conducted February 2018)

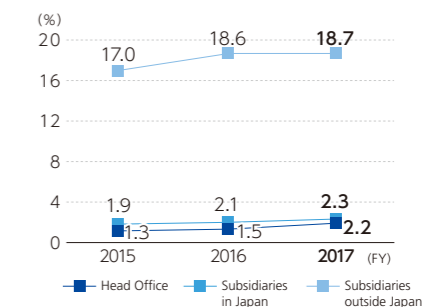
Empowering Women in the Workplace

The ratio of women employees in the Shimadzu Group has now reached 23.7 % and the ratio of women in management positions has also been increasing year by year. However, those ratios are still low in Shimadzu Corporation, with women only accounting for 16.9 % of full employees and 2.2 % of management personnel. Therefore, we prepared and announced an action plan for Shimadzu Corporation based on the Japanese Act on Promotion of Women's Participation and Advancement in the Workplace. The action plan includes the following three main actions. (1) Increase the ratio of women hired as full employees each year to 30 %. (2) Expand/improve policies for diverse and flexible work arrangements. (3) Increase the ratio of women in management to 5 % (40 women) by 2020. To implement the action plan, we established a system that enables employees to work from home for child care or nursing care purposes and introduced an hourly-based paid vacation day system and started operating the systems in December 2017. As a result, for the last two years, Shimadzu has been selected as a Nadeshiko brand, which recognizes publicly listed companies with superior practices for empowering women in the workplace.

Ratio of Women Full Employees



Ratio of Women in Management Positions (Head Office/Subsidiaries in Japan/Subsidiaries Outside Japan)



Selected as a Nadeshiko Brand

Shimadzu Corporation was selected as a Nadeshiko brand for 2017 and 2018. The Japanese Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange have jointly selected Nadeshiko brands each year since 2012 as a means of recognizing publicly listed companies with outstanding practices for empowering women in the workplace.



Employee Comment ▶▶ From Survey of Participants in Diversity Management Workshop

I participated in the workshop on promoting diversity from the perspective of men's studies. The workshop made me realize that how men work and think are major factors in achieving diversity and that things that should be reformed, stereotypes, and customary practices can prevent achieving diversity. Consequently, the workshop has challenged me to question my current perspectives.

Health Management

Key Accomplishments During FY 2017

Introducing KenCoM Health Web Service

The KenCoM health web service was introduced to increase mindfulness about health and instill healthy habits in each employee. With the KenCoM service, users can record step-counts and weight, participate in health events, view health exam results and medication histories, and more. It supports user health improvement efforts by issuing points, which can be exchanged for gift certificates or products, for health event participation or actions that result in lifestyle improvements, while also making participation fun for individuals.

Preparing the Health Guide "Mind and Body Health Book"

Including topics on exercise, diet, and sleep, the health guide was prepared in March 2018 to help employees improve their health on their own by reviewing their daily routines to prevent lifestyle diseases or improve their life habits. It will be distributed to all Shimadzu Group employees in an effort to promote awareness about health.

Subsidizing Breast Cancer Examination Expenses with Elmammo Avant Class Dedicated Breast PET System

In cooperation with Medical Corporation Chionkai, we established a system for subsidizing the cost of obtaining a breast cancer examination using a Shimadzu Elmammo Avant Class dedicated breast PET system. The subsidy system was established to promote the early detection and early treatment of breast cancer by increasing the ratio of women receiving breast exams. Female employees or spouses of male employees aged 40 or older were eligible for the examination.

Recognized as "White 500" Company with Superior Health Management

For the second consecutive year (2017 and 2018), Shimadzu Corporation was selected as a "White 500" company (large enterprise category) under the "2018 Certified Health & Productivity Management Organization Recognition Program—White 500," which is operated jointly by the Japanese Ministry of Economy, Trade and Industry and the Nippon Kenko Kaigi since 2017 to recognize companies with outstanding health management practices for maintaining and improving employee health.



Health Event



Health Guide "Mind and Body Health Book"



Elmammo Avant Class Dedicated Breast PET System

Employee Comment ▶ Survey of Health Event Participants

- I don't normally have many opportunities to exercise, so it was fun to freely exercise and feel a sense of exhilaration in both my mind and body.
- The night after exercising, I slept soundly for the first time in a long while. The next day, I didn't even feel tired and my circulation seemed to improve.

Occupational Health and Safety

Key Accomplishments During FY 2017

Measures for Workplace Accidents

In recent years, accidents involving unskilled workers employed for less than five consecutive years have accounted for about 40 % of all accidents. To prevent workplace accidents caused by lack of skill or experience, we have been conducting safety training and danger anticipation training for new employees and those without experience on a given task. Part of that training involves using a safety simulator to experience simulated workplace accidents. By experiencing danger participants improve their ability to anticipate danger. Actually experiencing danger increases worker ability to sense and anticipate danger, which is expected to help decrease workplace accidents. No serious workplace accidents occurred in FY 2017.



Simulator for Experiencing Pointing/ Calling Safety Measures

Chemical Substance Risk Management

Due to a June 2016 revision in the Japanese Industrial Safety and Health Act, chemical substance risk management became mandatory. Consequently, we implemented measures for 3000 items and reviewed measures for notifying workers of risks associated with chemical substances and measures to mitigate health risks. In FY 2017, substitutes for toluene and other hazardous substance were implemented in some departments. That substitution process will be continued in FY 2018 by setting and implementing additional new targets. To improve the efficiency and sophistication level of managing chemical substances, a cross-departmental organization was established (Chemical Substance Management Team) to handle what was previously being performed by several of the main departments responsible for laws and regulations. The team will work closely with the various departments and affiliated companies that use the chemical substances to exchange information and prepare a system for responding quickly in the event of an emergency.

Workshops on Managing Chemical Substances

In addition to providing information about risks within and outside the company, revisions to laws, and so on, the Chemical Substance Management Team has also been conducting ongoing workshops on managing chemical substances. The workshops not only explain the risks associated chemical substances in an easy to understand way using pictures and video, but also provide an opportunity to think about reducing risks, such as by displaying an actual absorbent mat or other supplies for chemical spills, or a CFC-free air duster.












Workshop on Managing Chemical Substances

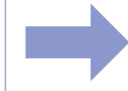
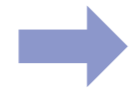
Employee Comment ▶ Survey of Risk Simulation Participants









- I tried the pointing/calling safety simulator. Before I tried the simulator, they explained that pointing and calling techniques would reduce errors to about one sixth the level that occurs without pointing/calling. Actually trying the pointing/calling technique reduced my errors and really helped me sense how effective it is. Actually experiencing the improvement was very helpful.

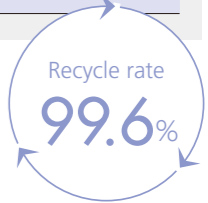
Environmental Management

Key Performance Indicators for FY 2017 Environmental Activities






INPUT	
 Electricity	63,630,000 kWh
 Gas	643,000 m ³
 Fuel	24.0 kL
 Water	205,000 m ³
 Chemical Substances	281 t
 Paper	141.9 t
 Packaging Material	970.6 t
 Environmental Conservation Expenses	708 million yen
 Environmental Investments	501 million yen



OUTPUT	
 CO ₂ Emissions	34,500 t-CO ₂
Reference: Shimadzu Group CO ₂ Emissions	49,400 t-CO ₂
 NO _x Emissions	1.11 t
 SO _x Emissions	0 t (no emissions)
 Discharged Amount of PRTR-Reported Substances	8.7 t
 Effluents	184,000 m ³
 Output of Unnecessary Substances	5,148 t
 Waste Emissions	1,643 t
 Amount Eventually Landfilled	22 t



 Major Outside Assessments	Nikkei Environmental Management Survey	94 th of 395 companies (manufacturers)
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Achievements	
 Number of Eco-Products Plus Developed	18 models in one year 85 models total
 Contribution Volume of Reduction in CO ₂ Emissions	33,820 t-CO ₂ total
 Total Participants in Shimadzu Corporation Forest Cultivation Activities	231 in one year 1,778 total (FY 2008 to 2017)
 Tree Planting Activities Based on Donations in China (Six Provinces and Autonomous Regions in the Yangtze/Yellow River Watershed Areas)	Total donations: 1.60 million renminbi Total area planted: 363 ha (FY 2010 to 2017)
 Support for Non-Shimadzu Activities	Supported 90 events and 2,291 people

Environmental Management

Risks and Opportunities

Due to climate change, abnormal weather events have been occurring frequently in recent years in Japan and throughout the world. In order to keep the increase in global average temperature to less than 2 °C above pre-industrial levels, countries party to the Paris Agreement adopted in 2015 agreed to a 2 °C target. Accordingly, Japan set a long-term target of reducing FY 2013 CO₂ emissions by 26 % by 2030. Therefore, based on the Paris Agreement, SDGs, and other international frameworks, we are currently preparing medium and long-term environmental goals and a roadmap for achieving those goals. Furthermore, in addition to our previous measures, mainly involving environmental management, we

have now renamed the special organization involved in that process the Global Environmental Management Department and have been more actively deploying environmental activities in combination with our business operations to help solve global environmental challenges. For example, we will contribute to the advancement of a sustainable society by identifying difficult customer challenges, such as developing more efficient and environmentally-friendly renewable energies or functionally engineered new materials derived from nature, and then using such challenges as a business opportunity for supplying products and technologies that help customers solve those challenges.

Basic Policy

Shimadzu intends to expand business activities and increase corporate value by solving environmental problems as an "eco-solution provider." That will involve the following four main types of activities.

- (1) Constantly improve the energy efficiency and reduce the size of all products to minimize the environmental impact of products over the course of their entire product life cycle.
- (2) Strive to reduce our environmental impact by specifying medium and long-term CO₂ emission reduction targets for the Shimadzu Group and develop closer partnerships with suppliers to actively increase the use of solar or other renewable energies and reduce the use of hazardous chemical substances, for example.
- (3) Contribute to building a sustainable society by supplying instruments for environmental testing of water, air, soil, and so on, and products and technologies that solve challenges involved in developing new materials and alternative energies for reducing global environmental impact.
- (4) Partner with community groups or educational institutions, for example, to deploy a wide range of activities, such as creating forests to protect biodiversity or conducting classes at schools or other locations to educate people about the environment. Furthermore, use an environmental management system to implement those activities.

Four Policies for the Shimadzu Group Environmental Management

- 1** Make all products more environmentally-friendly.
- 2** Reduce the environmental impact of overall business processes even further.
- 3** Provide solutions for the environmental testing and alternative energy fields.
- 4** As a company that contributes to the environment, support environmental conservation activities.

In addition, promote those activities via the environmental management system.

Key Measures of Environmental Management

Key Measures		KPI
Strengthen Measures to Reduce Environmental Impact on a Global Basis.		A ≥ B (FY 2019) A: Contribution volume of reduction in CO ₂ emissions with environmentally-friendly products B: CO ₂ emissions of Shimadzu Group Eco-Products Plus Net sales: 50 B yen in FY 2019 Completion of specifying long-term target values and preparing a roadmap for achieving those targets (FY 2019)
1 Increase Contribution Volume of Reduction in CO ₂ Emissions with Environmentally-Friendly Products <ul style="list-style-type: none"> ■ Establish an Eco-Products Plus certification system and increase awareness within and outside the company. ■ Propose measures for strengthening selling capabilities. 	2 Reduce Shimadzu Group CO ₂ Emissions and Specify Long-Term Global Target Value <ul style="list-style-type: none"> ■ Improve the visibility of various environmental information within and outside Japan. ■ Specify measures for reducing environmental impact and execute corresponding plan-do-check-action (PDCA) cycles. ■ Specify long-term target values and prepare a roadmap for achieving those targets. 	

Key Accomplishments During FY 2017

Global Environmental Conservation Through Technological Development

As a key measure for environmental management, Shimadzu will strengthen measures to reduce global environmental impact. 85 energy and resource-efficient Eco-Products Plus models have been released to the world thus far, which reduced customer CO₂ emissions by 33,820 tons in FY 2017. However, CO₂ emissions from Shimadzu Group business activities is currently increasing, due to increasing sales volume and an expanding number of business locations during the last several years. Consequently, we are working to improve the visibility of environmental information at respective locations within and outside Japan, and will propose and implement CO₂ emissions reduction measures based on respective business conditions. For product CO₂ emission reductions to make a greater contribution than the contribution from Shimadzu Group business activities, Eco-Products Plus sales must reach 50 billion yen. Therefore, Eco-Products Plus products are currently actively being developed in order to achieve that goal by FY 2019.

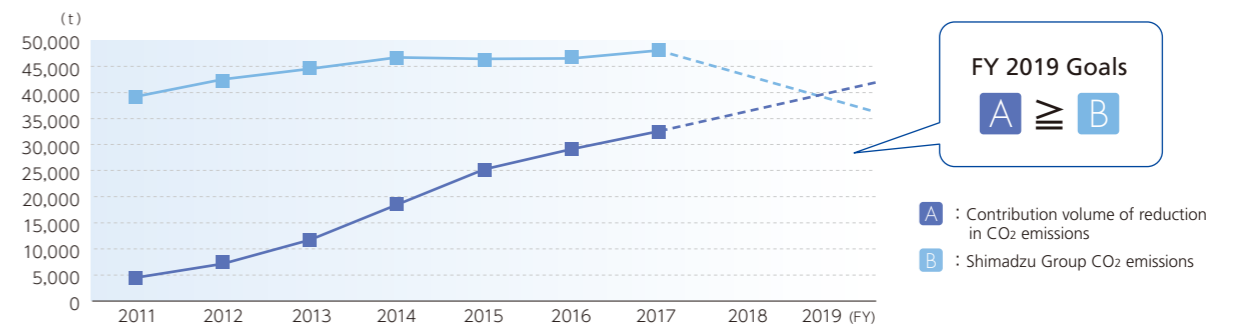
■ Contribution Volume of Reduction in CO₂ Emissions

33,820 t-CO₂

■ Eco-Products Plus Number of Products Developed (Cumulative)

85 models

Trends and Goals for Shimadzu Group CO₂ Emissions and Contribution Volume of Reduction in CO₂ Emissions



Newly Released Eco-Products Plus Products



Employee Comment ▶ Atsushi Otani

Assistant Manager, PET Group, ME System Unit, Research & Development Department, Medical Systems Division

Elmammo dedicated breast PET systems are operated 24-hours a day, so they needed to be very energy efficient if we were going to successfully achieve widespread use. Consequently, we totally redesigned the system back to the power supply, which made it 30 % more energy efficient than the previous model. Therefore, we expect the Elmammo Avant Class to make a significant contribution to diagnosing breast cancer.



Environmental Management

Key Accomplishments During FY 2017

Reducing the Environmental Impact of Business Activities

CO₂ Emissions

In FY 2017, the world-wide CO₂ emissions of the Shimadzu Group increased by 5.2 % to 49,398 t-CO₂, due to moving more production in-house and higher overall production, but emission intensity improved by 5 % to 10.1 t-CO₂ per billion yen, due to higher net sales. Investments in replacing older transformers and air conditioning equipment and converting lighting to LED technology, for example, helped reduce annual emissions by over 300 tons in FY 2017. Also, by changing to managing energy usage by division, the organization will be better able to reduce energy consumption to new levels through improved production efficiencies.

Water Management

Efforts to reduce water usage, such as changing the heat source in air conditioning equipment (from a cooling tower to a heat pump), using rainwater to water landscaping, and switching to more water efficient toilets, for example, reduced water usage by 7 % in FY 2017. In addition to adopting operating regulations and procedures that prevent releasing potential water pollutants from process steps that involve chemical substances, neutralization equipment, wastewater treatment equipment, and so on, were also installed. We contributed to achieving a healthier water circulation by establishing voluntary control standards that are stricter than the standards required by current laws and regulations.

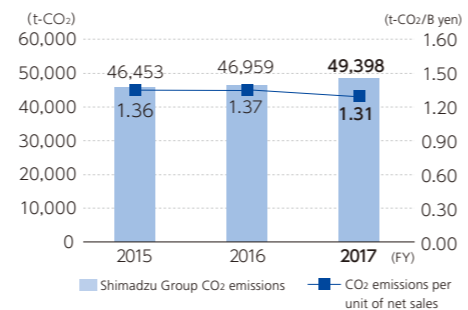
Resource Recycling

Waste substances generated from production sites, research laboratories, and major affiliated companies were separated by type and processed appropriately according to applicable laws and regulations. Due to continuing production increases, however, the overall volume is increasing. On the other hand, we continue to maintain a recycling rate of over 99 % (99.6 %) by prioritizing reusing resources, such as by selling waste materials as a valuable resource. Furthermore, we monitor suppliers, including regular site inspections of waste management vendors, and have established and strictly implemented company regulations intended to ensure compliance with laws and regulations.

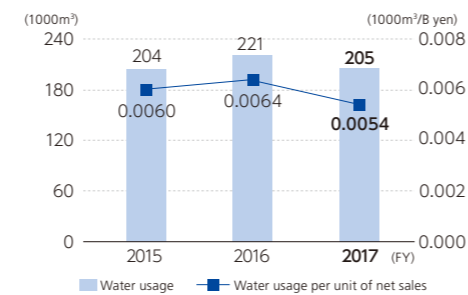
Chemical Substances Management

A chemical registration information system (CRIS) developed by affiliated company Shimadzu System Development Corp. is used to manage the wide diversity of chemical substances used within business activities. Based on the purchase, usage, and disposal quantities of about 10,000 chemical substances monitored in FY 2017 to comply with environmental laws and regulations, to maintain/manage ISO 14001 certification, and so on, the usage of substances reported to the government for PRTR increased significantly in FY 2017, due to increased production of turbomolecular pumps and other products in the Industrial Machinery segment and due to the expanded scope of applicable chemical substances. Currently, using collected and managed data, we started measures to adopt substitutes for hazardous chemical substances in an effort to establish and improve environmentally sustainable business operations.

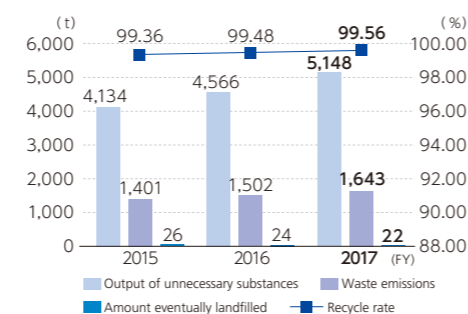
Amount of Shimadzu Group CO₂ Emissions from Energy Use (Within and Outside Japan)



Water Usage of Manufacturing, Research, and Major Manufacturing Subsidiaries in Japan

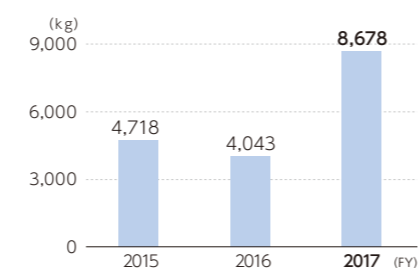


Emissions and Recycle Rate of Manufacturing, Research, and Major Manufacturing Subsidiaries in Japan



Usage of Substances Reported for PRTR

Note: Total for manufacturing and research locations in Japan



Measures for Conservation of Biodiversity

Conservation of Ecosystem in Shimadzu Forest Within Head Office/Sanjo Works Grounds

This 8,000 m² green space within the Head Office/Sanjo Works grounds is the first site in manufacturing companies in western Japan to earn the maximum AAA ranking by the Ecosystem Conservation Society-Japan under the Japan Habitat Evaluation & Certification Program. Planted with mainly native species, the forest helps form a regional ecological network. The forest also started fostering and preserving an ecosystem closely tied to the development of traditional culture in Kyoto, such as Futaba Aoi (*asarum caulescens*) provided for Kyoto's Aoi Matsuri Festival and, starting in 2017, Chimakizasa (*sasa plamata*), and Kikutaniyiku (*chrysanthemum seticuspe*)*. These efforts were even designated as an official Cooperative Project to Restore the Traditional Biology and Culture of Kyoto City, based on the Kyoto City Strategy for the Conservation and Sustainable Use of Biological Diversity.

* Historically used in Kyoto festivals, for example, it is a rare plant at risk of extinction.

Forest Maintenance and Other Environmental Conservation

Shimadzu is involved in environmental conservation activities within and outside Japan, including participation in the Kyoto Model Forest Movement to help cultivate the Shimadzu Corporation Forest in the city of Nantan, in Kyoto Prefecture.

The eight Shimadzu Group companies in China have cooperated with the China Youth Development Foundation since 2010, to participate in the "Protection of Mother River" activities. It involves planting forests to protect the water resources and soil of the Liao River that flows through Northern China and restore its vegetation.



Kikutaniyiku Growing in the Shimadzu Forest



Tenth Year of Shimadzu Corporation Forest Cultivation Activities

Support for Environmental Activities Outside of Shimadzu

Activities to Help Teach Children About the Environment

Shimadzu is involved in activities to provide support outside of Shimadzu as well, such as to stimulate environmental awareness and contribute to local environments. Specifically, we conduct on-site classes about the environment at educational institutions ranging from elementary schools to universities, accept factory tours, and give presentations at seminars held outside Shimadzu, for example. The Eco-Club (a team of women from within Shimadzu that engages in environmental projects) uses unique teaching materials developed by themselves to teach classes on the environment at elementary schools. In 2017, they taught a lesson at the Shimadzu Forest, in cooperation with the Kyoto City Environmental Policy Bureau, entitled Exploration of Living Things as a Parent-Child Team.



Participants of Exploration of Living Things as a Parent-Child Team Event

Supporting Groups Involved in Environmental Activities Throughout the World

Based on our agreement with the basic principles of the Kyoto World Water Grand Prize, Shimadzu has been a sponsor of the organization that awards the prize to groups involved in ongoing outstanding activities for solving water problems in developing countries. In March 2017, the 8th World Water Forum was held in Brazil, where the President of the local Shimadzu subsidiary presented the prize money on behalf of participating companies and groups. The award was given to CCDP, a grass-roots organization based in the Republic of Togo, a country in West Africa, for their proposed project to improve the availability of safe drinking water and a hygienic environment.



Presenting the Kyoto World Water Grand Prize (Source: Japan Water Forum)

Financial Statements

Consolidated Balance Sheets (Units: Millions of yen)

	FY 2016	FY 2017
Assets		
Current assets		
Cash and time deposits	56,698	76,926
Trade notes and accounts receivable	112,877	119,117
Marketable securities	-	20
Merchandise and products	40,588	40,067
Work in process	16,899	19,936
Raw materials and supplies	19,213	20,632
Deferred tax assets	9,603	9,662
Other	8,342	8,931
Allowance for doubtful receivables	(1,142)	(1,409)
Total current assets	263,080	293,885
Noncurrent assets		
Property, plant and equipment		
Buildings and structures, net	39,975	39,985
Machinery, equipment and vehicles, net	5,904	6,713
Land	18,879	18,821
Leased assets, net	2,510	2,734
Construction in progress	628	3,225
Other, net	10,853	12,655
Total property, plant and equipment	78,751	84,136
Intangible fixed assets	8,396	9,234
Investments and other assets		
Investment securities	13,779	16,464
Long-term receivables	174	159
Assets related to retirement benefits	3,705	8,010
Deferred tax assets	4,160	3,089
Other	3,829	5,129
Allowance for doubtful receivables	(523)	(344)
Total investments and other assets	25,126	32,508
Total noncurrent assets	112,273	125,879
Total assets	375,354	419,764

(Units: Millions of yen)

	FY 2016	FY 2017
Liabilities		
Current liabilities		
Trade notes and accounts payable	57,263	66,589
Short-term loans	2,963	3,135
Lease obligations	1,007	1,060
Accounts payable	11,363	16,244
Income taxes payable	4,870	7,460
Allowance for employees' bonuses	8,188	8,735
Allowance for director's bonuses	275	259
Provision for loss on defense equipment	484	94
Other	17,730	18,388
Total current liabilities	104,147	121,967
Long-term liabilities		
Unsecured bonds	15,000	15,000
Long-term debt	648	501
Lease obligations	1,758	1,986
Liability for directors' retirement benefits	184	169
Liability for retirement benefits	10,708	9,732
Liability for stock benefits	-	82
Other	1,277	2,264
Total long-term liabilities	29,577	29,737
Total liabilities	133,725	151,704
Net assets		
Shareholders' capital		
Common stock	26,648	26,648
Additional paid-in capital	35,188	35,188
Retained earnings	174,391	198,038
Treasury stock	(885)	(1,410)
Total shareholders' capital	235,342	258,464
Accumulated other comprehensive income		
Net unrealized gain on available-for-sale securities	5,850	7,440
Foreign currency translation adjustments	(1,429)	(1,998)
Cumulative adjustments to retirement benefits	1,568	3,787
Total accumulated other comprehensive income	5,988	9,229
Non-controlling interests	297	366
Total net assets	241,629	268,060
Total liabilities and net assets	375,354	419,764

Consolidated Statements of Income (Units: Millions of yen)

	FY 2016	FY 2017
Net sales	342,479	376,530
Cost of sales	206,070	226,697
Gross profit	136,409	149,833
Selling, general and administrative expenses	99,319	107,011
Operating income	37,089	42,822
Other income		
Interest income	224	241
Dividend income	211	346
Insurance payments received	228	329
Subsidy received	493	395
Other	654	596
Total other income	1,812	1,909
Other expenses		
Interest expenses	138	139
Foreign exchange loss	72	1,271
Compensation expenses	100	311
Other	1,551	1,138
Total other expenses	1,862	2,860
Ordinary income	37,039	41,871
Extraordinary income		
Gain on sale of property, plant and equipment	32	157
Total extraordinary income	32	157
Extraordinary losses		
Loss on disposal of property, plant and equipment	176	187
Loss on write-down of investment securities	1	66
Impairment loss	780	-
Total extraordinary losses	958	253
Income before income taxes	36,113	41,775
Income taxes	8,763	11,512
Income taxes adjustments	819	342
Total income taxes and income taxes adjustments	9,582	11,855
Profit	26,530	29,920
Profit attributable to non-controlling interests	57	82
Profit attributable to owners of parent	26,473	29,838

Consolidated Statements of Comprehensive Income (Units: Millions of yen)

	FY 2016	FY 2017
Profit	26,530	29,920
Other comprehensive income		
Unrealized gain/loss on available-for-sale securities	813	1,590
Foreign currency translation adjustments	(2,451)	(565)
Retirement benefit adjustments	2,938	2,219
Total other comprehensive income	1,301	3,243
Comprehensive income	27,832	33,163
(Break down)		
Comprehensive income attribute to owners of parent	27,787	33,078
Comprehensive income attribute to non-controlling interests	45	85

Consolidated Statements of Cash Flows (Units: Millions of yen)

	FY 2016	FY 2017
Cash flows from operating activities		
Income before income taxes	36,113	41,775
Depreciation and amortization	9,546	10,591
Impairment loss	780	-
Increase (decrease) in allowance for doubtful receivables	144	133
Increase (decrease) in allowance for employees' bonuses	103	553
Increase (decrease) in allowance for director's bonuses	(5)	(21)
Increase (decrease) in liability for retirement benefits	1,189	1,895
Interest and dividends income	(435)	(587)
Interest expenses	138	139
Foreign exchange (gain) loss, net	(2)	22
Net (gain) loss on sale and valuation of investment securities	-	66
Net (gain) loss on sale and disposal of property, plant and equipment	144	29
(Increase) decrease in trade receivables	(7,911)	(6,909)
(Increase) decrease in inventories	(3,816)	(5,513)
Increase (decrease) in trade payables	5,182	10,045
Other	(2,676)	(2,640)
Subtotal	38,495	49,581
Interest and dividends received	433	587
Interest paid	(138)	(139)
Income taxes paid	(9,183)	(8,814)
Net cash provided by operating activities	29,608	41,215
Cash flows from investing activities		
Purchase of property, plant and equipment	(11,013)	(11,972)
Proceeds from sale of property, plant and equipment	212	489
Purchase of investment securities	(5)	(482)
Increase in long term receivables	(41)	(157)
Decrease in long term receivables	36	45
Purchase of subsidiary	(886)	(1,557)
Other	(605)	2,560
Net cash provided by (used in) investing activities	(12,304)	(11,072)
Cash flows from financing activities		
Borrowing of short-term loans	495	616
Repayment of short-term loans	(550)	(669)
Borrowing of long-term debt	50	650
Repayment of long-term debt	(540)	(571)
Cash dividends paid	(5,597)	(6,186)
Dividends payments to non-controlling interests	(14)	(11)
Repayment of guarantee deposits received	(21)	(21)
Payment of finance lease obligations	(1,092)	(1,183)
(Increase) decrease in treasury stock	(24)	(524)
Net cash provided by (used in) financing activities	(7,294)	(7,902)
Foreign currency translation adjustments on cash and cash equivalents	(1,222)	87
Net increase (decrease) in cash and cash equivalents	8,787	22,327
Cash and cash equivalents, beginning of period	43,508	52,762
Increase in cash and cash equivalents due to inclusion of subsidiaries in consolidation	466	-
Cash and cash equivalents, end of period	52,762	75,090

Key Financial and Non-Financial Data Over the Past Eleven Years

Financial Data	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Fiscal Year (million yen)											
Net sales	289,971	272,833	238,255	252,707	266,255	264,048	307,532	314,702	342,236	342,479	376,530
Gross profit	112,593	104,971	87,050	95,520	100,875	96,030	117,959	127,028	140,385	136,409	149,833
Selling, general and administrative expenses	84,995	85,358	76,756	79,222	81,509	83,913	93,940	99,838	104,683	99,319	107,011
R&D expenses	8,795	9,135	9,018	8,407	8,883	9,659	10,643	9,786	9,437	9,296	9,676
Operating income	27,597	19,613	10,294	16,297	19,365	12,116	24,018	27,189	35,701	37,089	42,822
Capital Investment	12,385	8,989	8,608	8,463	8,911	9,147	16,163	13,571	12,098	12,876	17,187
Depreciation and amortization	6,279	8,503	8,301	7,924	7,969	7,909	8,050	7,951	9,425	9,546	10,591
Profit attributable to owners of parent	13,724	8,536	6,130	10,046	9,083	7,578	9,724	18,445	23,899	26,473	29,838
Cash Flows (million yen)											
Cash flows from operating activities	19,202	12,923	13,756	24,992	8,805	12,028	(5,870)	40,245	32,348	29,608	41,215
Cash flows from investing activities	(15,419)	(10,441)	(7,675)	(8,281)	(7,899)	(7,899)	390	(15,678)	(13,101)	(12,304)	(11,072)
Free cash flows (from operating and investing activities)	3,783	2,482	6,080	16,710	906	4,128	(5,480)	24,566	19,246	17,303	30,142
Cash flows from financing activities	4,083	(11,757)	(1,754)	(9,044)	(4,878)	(2,401)	15,363	(33,197)	(11,689)	(7,294)	(7,902)
Year-End Values (million yen)											
Total assets	303,830	281,155	284,104	284,843	290,840	300,259	340,715	339,832	349,798	375,354	419,764
Cash and cash equivalents	35,077	23,673	28,242	34,221	29,756	33,842	43,929	38,422	43,508	52,762	75,090
Outstanding interest-bearing debt	42,802	34,640	36,847	30,729	29,075	30,509	53,860	24,668	19,150	18,611	18,636
Shareholders' capital	148,875	154,855	158,601	166,401	173,105	178,174	180,449	195,912	214,734	235,342	258,464
Per-Share Information (yen)											
Profit	46.49	28.92	20.77	34.05	30.79	25.69	32.97	62.55	81.05	89.79	101.26
Net assets	509.16	497.83	518.27	530.25	546.97	587.53	616.50	711.38	745.13	818.56	908.76
Dividends	9.00	9.00	7.00	8.00	8.00	9.00	9.00	13.00	18.00	20.00	24.00
Payout ratio	19.4%	31.1%	33.7%	23.5%	26.0%	35.0%	27.3%	20.8%	22.2%	22.3%	23.7%
Key Financial Performance Indicators											
Gross margin	38.8%	38.5%	36.5%	37.8%	37.9%	36.4%	38.4%	40.4%	41.0%	39.8%	39.8%
Operating margin	9.5%	7.2%	4.3%	6.4%	7.3%	4.6%	7.8%	8.6%	10.4%	10.8%	11.4%
ROE (Return on equity)	9.4%	5.7%	4.1%	6.5%	5.7%	4.5%	5.5%	9.4%	11.1%	11.5%	11.7%
ROA (Ratio of ordinary income to total assets)	8.0%	6.1%	3.5%	5.4%	6.5%	4.6%	7.7%	8.3%	10.1%	10.2%	10.5%
Shareholders' capital ratio	49.0%	55.1%	55.8%	58.4%	59.5%	59.3%	53.0%	57.6%	61.4%	62.7%	61.6%
Price-earnings ratio	19.8×	21.7×	36.1×	21.7×	24.3×	26.1×	27.8×	21.4×	21.8×	19.7×	29.5×
Overseas sales ratio	40.6%	42.5%	38.4%	39.7%	40.8%	43.0%	46.5%	49.8%	50.9%	48.6%	50.2%
Non-Financial Data											
Number of employees	9,326	9,670	9,624	9,819	10,132	10,395	10,612	10,879	11,094	11,528	11,954
Number of employees outside Japan	2,897	3,162	3,101	3,328	3,608	3,842	3,913	4,059	4,201	4,471	4,805
Number of patents held	3,327	3,549	3,751	3,996	4,343	4,848	5,304	5,484	5,657	6,071	6,549
CO ₂ emissions*	21,147t-CO ₂	21,940t-CO ₂	21,029t-CO ₂	34,877t-CO ₂	39,213t-CO ₂	42,390t-CO ₂	44,472t-CO ₂	46,473t-CO ₂	46,453t-CO ₂	46,959t-CO ₂	49,398t-CO ₂

* Data prior to FY 2010 only includes emissions from Shimadzu Corporation manufacturing and laboratory sites.

Basic Information

Corporate Profile (as of March 31, 2018)

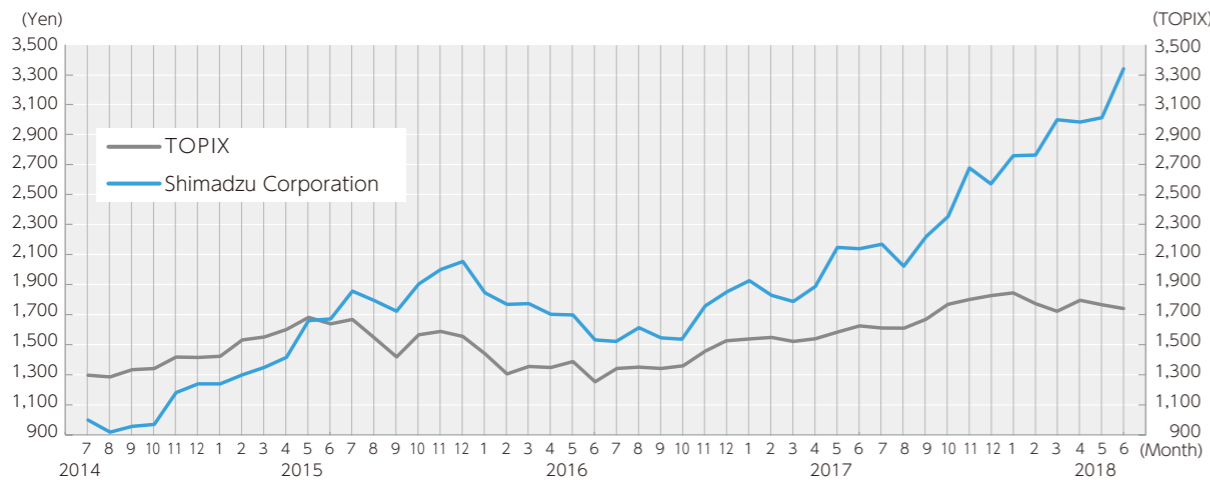
Address of Head Office	1 Nishinokyo Kuwabara-cho, Nakagyo-ku, Kyoto 604-8511, Japan	Number of Shareholders	26,432
Establishment	March, 1875	Number of Employees (Shimadzu Group Total)	11,954
Formation of Limited Company	September, 1917	Stock Listing	Tokyo Stock Exchange
Capital	26,648,899,574 yen	TSE Code	7701
Total Number of Common Stock Issued	296,070,227	Shareholder Registry Administrator	Mitsubishi UFJ Trust and Banking Corporation
		Accounting Auditor	Deloitte Touche Tohmatsu LLC

Major Shareholders

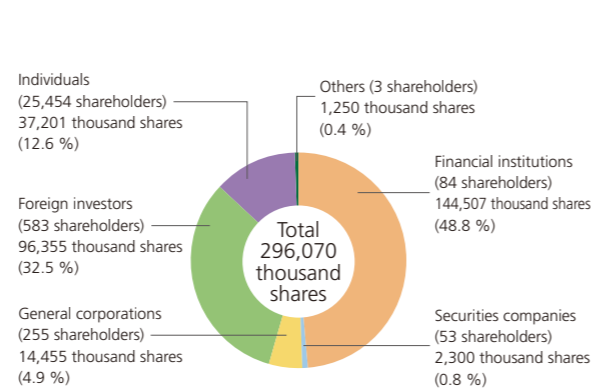
Shareholder Name	Number of Shares Owned (Thousands of Shares)	Shareholding Ratio (%)
Meiji Yasuda Life Insurance Company	20,742	7.04
The Master Trust Bank of Japan, Ltd. (Trust Account)	17,917	6.08
Japan Trustee Services Bank, Ltd. (Trust Account)	13,965	4.74
The Bank of Tokyo-Mitsubishi UFJ, Ltd.	7,672	2.60
Taiyo Life Insurance Company	7,411	2.51
Japan Trustee Services Bank, Ltd. (Trust Account 9)	6,657	2.26
Tokio Marine & Nichido Fire Insurance Co., Ltd.	6,287	2.13
National Mutual Insurance Federation of Agricultural Cooperatives	6,101	2.07
The Bank of Kyoto, Ltd.	4,922	1.67
STATE STREET BANK WEST CLIENT – TREATY 505234	4,572	1.55

● Shareholding ratio is the ratio held after deduction of treasury shares (1,247,741 shares).
 ● The Bank of Tokyo-Mitsubishi UFJ, Ltd. changed their name to the MUFG Bank, Ltd., as of April 1, 2018.

Stock Price (Tokyo Stock Exchange)



Ratio of Shares by Shareholder Type



Editorial Policy

This Shimadzu Integrated Report 2018 is published as a booklet to report on both financial and non-financial information about the Shimadzu Group. The report is intended as a communications tool for helping Shimadzu's stakeholders gain a better understanding of the Shimadzu Group's business activities. For more detailed information, please refer to corresponding websites noted where " For more details, refer to the website" is indicated in this booklet.

Shimadzu Corporation's Primary Means of Issuing Reports



Publishing Dates

2018 Edition: Published in August 2018
 2019 Edition: Will be published in the summer of 2019

Reporting Periods

From April 1, 2017 to March 31, 2018
 (Important information is also included for periods other than stated above.)

Reporting Organizations

Shimadzu Corporation and Shimadzu Group companies

Disclosure Policy

This report is provided in an effort to disclose information in a timely manner, in accordance with the Disclosure Policy specified by Shimadzu. For more details, refer to the website. <https://www.shimadzu.com/sustainability/disclosure.html>

Notes About Future Prospects

The business plans, strategies, and forecasts stated in this report are based on currently available information and are subject to risks and uncertainties. Please note that actual results may differ substantially from projected results, due to changes in economic conditions, market trends, or other factors.



In addition to supplying procedure support systems for diagnosing breast cancer, we are also involved in pink ribbon activities, in an effort to save as many women from breast cancer as possible, so they can continue to shine in their respective homes and workplaces.



Shimadzu Corporation is selected to be included in the JPX-Nikkei Index 400, which started by the Japan Exchange Group (JPX), Tokyo Stock Exchange, and Nikkei in 2014 for the purpose of selecting companies that satisfy the various conditions required by global investment standards.



For the second consecutive year, Shimadzu Corporation is recognized jointly by the Japanese Ministry of Economy, Trade and Industry and the Nippon Kenko Kaigi as a 2018 "White 500" company, which recognizes large corporations with outstanding health and productivity management practices.



Shimadzu Corporation was selected as a Nadeshiko brand for the second year in a row, in recognition of being a company that actively promotes the role of women in the workplace. Nadeshiko brands are selected from respective industries by the Japanese Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange from the approximately 3500 companies listed on the exchange, based on their practices that actively promote the role of women, including providing a work environment where women are free to continue working.



Shimadzu Corporation is recognized by the Kyoto Labour Bureau as a company actively involved in raising future generations based on the Act on Advancement of Measures to Support Raising Next-Generation Children.



Shimadzu Corporation is included in the FTSE4Good Index Series, an index of companies that meet global standards, based on an assessment of environmental, social, and governance practices by an organization that evaluates socially responsible investing.



Shimadzu Corporation is also included in the FTSE Blossom Japan Index, an index of Japanese companies with outstanding environmental, social, and governance practices. The index is also used as an index for evaluation by the Government Pension Investment Fund (GPIF).



Shimadzu is included in the MSCI Japan ESG Select Leaders Index, which selects brands in respective industry categories with a high ESG score based on overall environmental, social, and governance (ESG) risks. The index is also used as an index for evaluation by the Government Pension Investment Fund (GPIF).



Shimadzu is included in the MSCI Japan Empowering Women Index (WIN), which selects companies in respective industry categories that promote the role of women and have a high gender diversity score. The index is also used as an index for evaluation by the Government Pension Investment Fund (GPIF).

Shimadzu Corporation

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In the interest of environmental-friendliness, this report is printed with vegetable oil ink on FSC® certified paper, sourced from responsibly managed forests.