

2019 Yokogawa Report

For the year ended March 31, 2019



Takashi Nishijima
Chairman

Hitoshi Nara
President and CEO

To Our Shareholders and Investors

We wish to take this opportunity to express our heartfelt gratitude for your ongoing support.

Since its founding in 1915, Yokogawa has contributed to society by providing industry with cutting-edge products and solutions based on its core competences in measurement, control, and information technologies. Our business environment has changed drastically from one era to the next. Most recently, a wave of digital transformation driven by technologies such as artificial intelligence and big data has swept across the industrial and business landscape, driving interest in the adoption of new digital technologies that will improve productivity. Combined with the growing need to address issues of global concern as indicated by such initiatives as the adoption of the Sustainable Development Goals (SDGs) by the United Nations, the Company is presented with new opportunities to demonstrate the problem-solving capabilities that it has honed over the years.

Keeping in mind the relationship between our business activities and issues that concern all members of our society, in fiscal year 2017 we articulated a vision for the year 2050 and set specific sustainability goals (the “Three goals”) to make the world a better place for future generations. We have set quantitative targets for 2030 and key performance indicators (KPI) for 2020, and are promoting initiatives that are consistent with the objectives set out in our Transformation 2020 (TF2020) mid-term business plan.

Updated in 2018, our long-term business framework sets out what kind of company Yokogawa will strive to become, looking 10 years and even further into the future. To make this happen we will need technologies, skilled and knowledgeable personnel, and financial resources. And to guide us in our efforts to realize our ideals, specific goals for the Yokogawa Group as a whole were set out in the TF2020 plan.

In fiscal year 2019, the Yokogawa Group is picking up the pace of its efforts to achieve the TF2020 objectives and thereby taking itself closer to the ideals specified in the long-term business framework. The Group positions the three-year period covered by the TF2020 plan as a time for creating growth opportunities and consolidating the foundation for growth. Under this plan the Group is undertaking the following three transformations: the transformation of existing businesses, the creation of new businesses and transformation of its business model, and the improvement of productivity through Group-wide optimization. We will focus our efforts on making the fullest possible use of digital technologies and thereby achieving a digital transformation that will provide the basis for the aforementioned three transformations, and in so doing will enhance productivity for both the Yokogawa Group and our customers.

In April 2019, President and CEO Takashi Nishijima

was appointed Chairman, and Director Hitoshi Nara stepped up to the positions of president and CEO. Under this new management arrangement, the Yokogawa Group is working hard to speedily implement initiatives that will bring the TF2020 plan to fruition and set the stage for further growth.

The Yokogawa Group has an unwavering commitment to expanding its businesses and enhancing its corporate value, and thereby meeting the expectations of shareholders and investors. We ask you for your continued support.

Chairman

President and CEO

Co-innovating tomorrow™

Yokogawa is committed to pursuing the transformations needed to achieve continued growth in the next century.

Under the corporate brand slogan of “Co-innovating tomorrow,”

Yokogawa seeks to establish ever greater levels of trust with its customers and to work with them to create new value for a brighter future, both for its customers and society.

Yokogawa will resolve social and environmental issues in partnership with customers through business activities.

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Editorial Policy

This report has been edited to provide shareholders, investors, and other stakeholders with an understanding that the Yokogawa's initiatives to achieve sustainable growth and enhance mid-to long-term corporate value consistently "address social and environmental issues and contribute to society in partnership with customers through business activities" in the context of Yokogawa's value creation story.

In preparing the 2019 Yokogawa Report, Yokogawa included both its financial and non-financial information, which was supplemented by incorporating the Yokogawa's sustainability initiatives including its contributions to SDGs* and support for TCFD* recommendations into Yokogawa's business models, strategies, corporate governance policies, and other sources of the Yokogawa's competitiveness and profitability (ability to make profit) based on the Guidance for Collaborative Value Creation established by the Ministry of Economy, Trade and Industry and other references. We presented the relationship between financial and non-financial information in an integrated approach, so that readers will be able to grasp the big picture of Yokogawa's value creation process.

*SDGs: Sustainable Development Goals TCFD: Task Force on Climate-related Financial Disclosures

Period covered by the Report: Fiscal year 2018, the period from April 1, 2018 to March 31, 2019 (includes some information on fiscal year 2019)

Scope of the Report: Yokogawa Electric Corporation and its subsidiaries and affiliates

*Co-innovating tomorrow, CENTUM, ProSafe-RS, Synaptic Business Automation, OpreX, LCA, TDLs, DP harp, FLXA, DLM, CSU, CSU-W1, DDMOnEX and CellVoyager are registered trademarks or trademarks of Yokogawa Electric Corporation and its subsidiaries and affiliates.

Further information is available on our website:

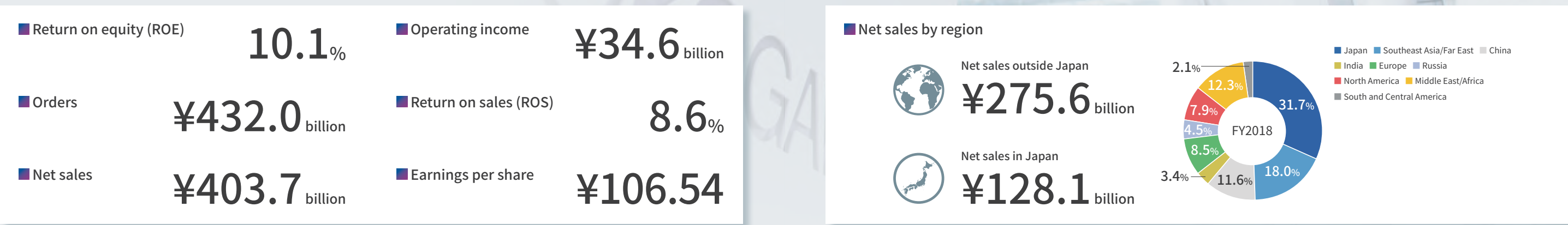
- Website of Yokogawa Electric Corporation: <https://www.yokogawa.com/>
- Investor Relations website: <https://www.yokogawa.com/about/ir/>
- Sustainability website: <https://www.yokogawa.com/about/sustainability/>
- Corporate Governance website: <https://www.yokogawa.com/about/ir/governance/>
- Yokogawa Report website: <https://www.yokogawa.com/about/ir/reports/annual/>

Cautionary statement regarding forward-looking statements

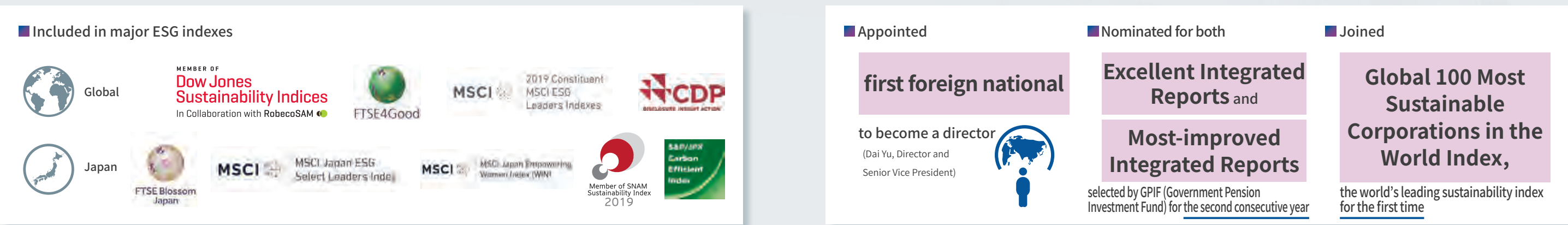
Statements made in this report regarding Yokogawa's plans, estimates, strategies, and beliefs are forward-looking statements about the future performance of Yokogawa. These statements are based on management's assumptions and beliefs in the light of currently available information. Yokogawa cautions that a number of important factors, such as general economic conditions and exchange rates, could cause actual results to differ materially from those discussed in the forward-looking statements.



Financial Results Summary



IR and ESG Topics



01 The History of Yokogawa Philosophy

As a company, our goal is to contribute to society through broad-ranging activities in the areas of measurement, control, and information.

Individually, we aim to combine good citizenship with the courage to innovate.

Social issues/needs	Increasing demand for electricity	Post-war recovery and economic growth Factory automation and safety improvement	Overseas expansion of Japanese manufacturing industry and maturing of Japanese market	Open innovation Increase in large-scale projects outside Japan	Effective use of energy, cost reduction, enhanced value of existing facilities
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Value provided by Yokogawa	1915	1919	1959	1999	2019
	Mass production of electric meters in Japan	Development of electron-tube (vacuum-tube) industrial instruments Release of CENTUM, the world's first distributed process control system	Globalization of sales, engineering, and service networks	Transformation to solutions business	Comprehensive solutions and services

Founding Principles

Quality first
Pioneering spirit
Contribution to society

The Founder's Aspirations

In his instructions to Ichiro Yokogawa and Shin Aoki, Dr. Tamisuke Yokogawa said, "You don't need to worry about profits. Just learn and improve our technology. You must make products that earn us the respect of our customers." This is the origin of the founding principles that have been handed down for more than a century as the pioneering spirit.

Although first set into words in 1988, the Yokogawa Philosophy is based on these founding principles, and is embodied in the code of conduct that guides employees in the performance of their daily tasks and in all pronouncements on our corporate objectives.



Dr. Tamisuke Yokogawa, founder

- 1915 Tamisuke Yokogawa, Doctor of Architectural Engineering, established an electric meter research institute in Shibuya, Tokyo with Ichiro Yokogawa and Shin Aoki
- 1917 First to produce and sell electric meters in Japan
- 1920 Incorporated as Yokogawa Electric Works Ltd.
- 1933 Started research and manufacture of aircraft instruments and flow, temperature, and pressure controllers
- 1935 Completed the Kichijoji factory and relocated the head office



Electric meter for switchboard

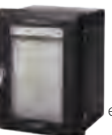


Portable oscillograph



Kichijoji factory

- 1948 Made public offering of the Company's stock
- 1950 Developed Japan's first electric recorder
- 1955 Signed a technical assistance agreement for industrial instruments with Foxboro, USA
- 1957 Established Yokogawa Electric Works, Inc. as North American sales office
- 1964 Made a full-scale entry to the industrial analyzer market
- 1973 Established a Brazilian sales office
- 1974 Established a Singapore plant
Completed and began operating the Kofu plant
Established a European sales office in the Netherlands
- 1975 Released CENTUM, the world's first distributed process control system

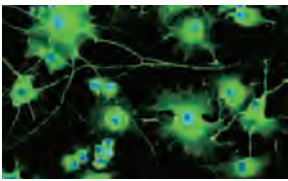


Electric recorder



the first CENTUM system

- 1983 Formed Yokogawa Hokushin Electric Corp. through merger with Hokushin Electric Works, Ltd.
- 1985 Jointly established Xiyi Yokogawa Co., Ltd. in Xian, China, with Xian Instruments Factory
- 1986 Changed the Company name to Yokogawa Electric Corporation
- 1987 Established a system product manufacturing and sales company in India
- 1990 Established Yokogawa Middle East E.C. in Bahrain
- 1996 Released a confocal scanner and entered the biotechnology business
- 1997 Established a local subsidiary in Russian Federation
Established an IA sales and services local subsidiary in South Africa



Optical spectrum analyzer



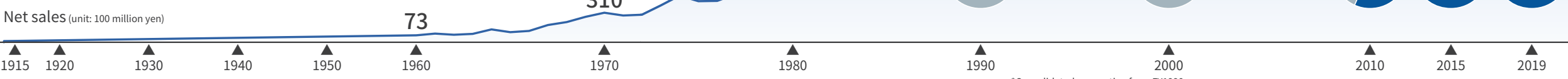
CSU10 confocal scanner unit



Field wireless solution



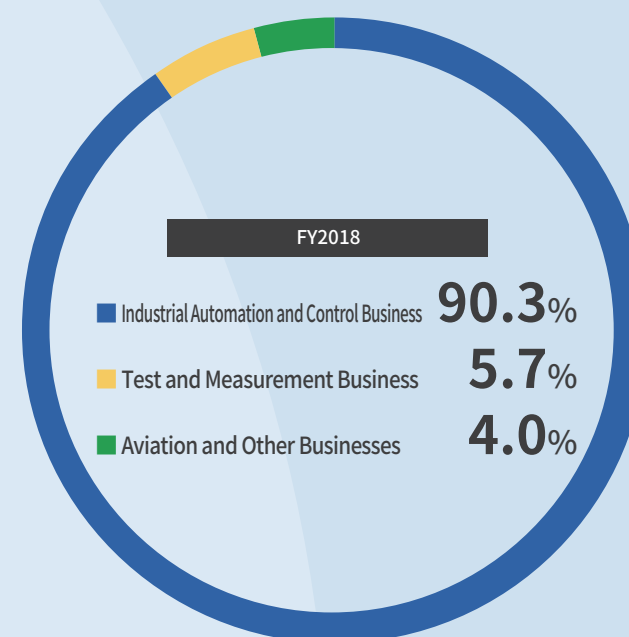
CENTUM VP



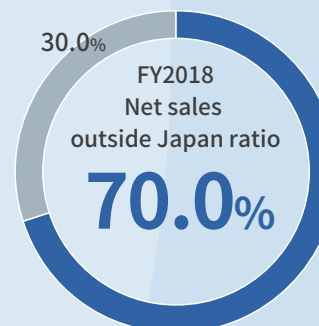
02 Yokogawa's Businesses



Net sales ratio by segment



Industrial Automation and Control Business



Net sales	Net sales outside Japan
¥364.8 billion (FY2018)	¥255.4 billion (FY2018)

Industrial Automation and Control Business

Yokogawa was the world's first company to develop a distributed process control system for the monitoring and control of various types of plant facilities, thereby contributing to the development of a wide range of industries including oil, gas, chemicals, power, iron and steel, pulp and paper, pharmaceuticals, and foods. The Company has established a global reputation as a leader in the control field.

In response to its customers' changing business environment and the need for digital transformation, Yokogawa has proposed the Synaptic Business Automation concept an ideal to be striven toward, and aims to be a trusted business partner who can work with its customers to create sustainable value. Based on the comprehensive Oprex brand for its industrial automation and control business that represents the excellence of the technologies and solutions that have been cultivated through co-creation with customers, Yokogawa delivers comprehensive solutions that cover everything from production to overall business processes and the supply chain. Working together with IT enterprises and other partner organizations, Yokogawa will contribute to the creation of value for its customers' businesses and sustained growth in profits by improving productivity, maximizing asset utilization, and ensuring safety over the entire plant lifecycles, as well as through the visualization of issues and optimization of overall business activities, including the value and supply chains.

Test and Measurement Business

In the field of measuring instruments, Yokogawa's business since its earliest days as a company, the Company has made significant contributions to the industry by providing measuring instruments. As global environmental problems become increasingly serious and the realization of a sustainable society has become one of the biggest issues facing humankind, Yokogawa is offering highly reliable measuring instruments to customers in a number of key markets where great changes are afoot: the electric energy/mechatronics market, IoT, the high-capacity data communication market centering on 5G mobile communication systems, and the market for maintenance services that are essential for plant safety and security.

Aviation and Other Businesses

Yokogawa is also engaged in the provision of aviation equipment. The Company's multifunctional flat-panel cockpit displays feature high visibility and outstanding environmental resistance and are widely used in aircraft, including the latest Airbus airliners.

03 Process of Creating Value

By offering value to customers that includes “high-quality, highly reliable products,” “efficient, safe, and stable operation” and “resolution of management issues,” the Yokogawa Group is addressing and resolving issues affecting society, the environment, and industry in partnership with customers so as to contribute to society.

Yokogawa will continue investing for further enhancement of corporate value and sustainable growth of the Company. For shareholders and investors, we aim for continuous and stable increases in dividends.

YOKOGAWA

B to B

Activity

Output



Customers

B to B / B to C

Outcome

- Enhance customers' economic value
- Contribute to promoting health and well-being



Co-innovating tomorrow™

Resolving social issues with customers

Impact

Contribute to society

To make the world a better place for future generations

Sustainability goals (Three goals)



Enhancing Yokogawa's corporate value



Profit

Investment for growth

Return to shareholders

Development

Growth

Sustainable society

Sustainable growth

Business model for the industrial automation and control business

Our business model provides the framework whereby we deliver value to customers and society and sustainably enhance corporate value through our business activities.

Key Industry Challenges

Changing market conditions and transformation in how Yokogawa does business

To help its customers respond to a changing business environment and address critical issues, Yokogawa is moving beyond the traditional role of automation supplier to become a trusted partner. Through co-innovation, an approach for the co-creation of value with customers, the Company will support the digitalization of their operations and continuously create value through the offering of comprehensive solutions that cover not only production processes but also entire businesses, including the supply chain.

Trends impacting our customers' businesses

Digital transformation

Supply chain visualization and optimization

Emphasis on highly profitable operations

Societal, political, and economic change

Sustainability and circular economy

Changing workforce

Our customers must deal with an increasingly uncertain global economic outlook, keep up with rapid changes in their business environments and the latest innovations in digital technology, take part in initiatives that aim to realize sustainability on a global scale, and meet ever evolving requirements for the enhancement of productivity. Yokogawa must respond in kind by providing comprehensive solutions that add high value by enhancing safety and productivity, and by supporting environmentally responsible business activities.

From automation supplier to trusted partner

Automation Supplier

- Product-oriented (products are the starting point)
- Clearly defined issues and needs
- Based on invitation to bid and request for quotation/proposal
- Focused on CAPEX
- Technology development for control applications
- Products and services centered on process control

Trusted Partner

- Customer-oriented (customer value is the starting point)
- Issues and needs not clearly defined
- No invitation to bid and no request for quotation/proposal
- Focused on TOTEX*
- Co-creation of value with customers
- Comprehensive solutions/services for process optimization and business performance improvement

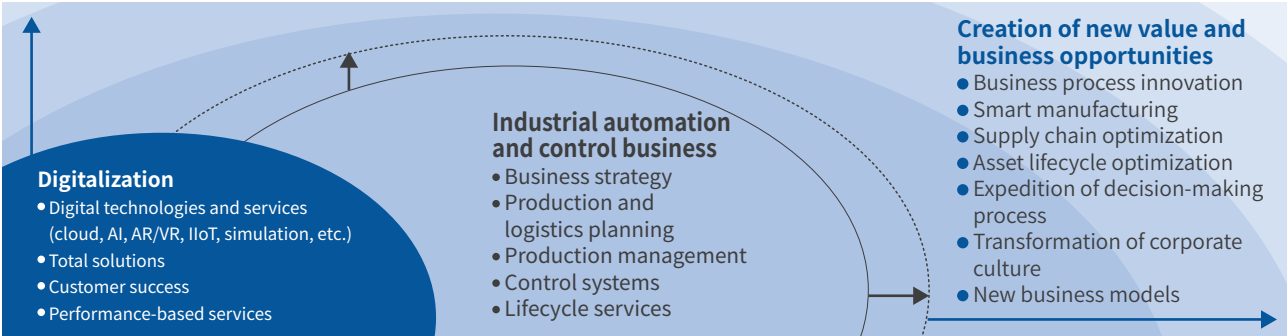
*Total expenditure throughout the business lifecycle; this is the sum of capital expenditure (CAPEX) and operating expenses (OPEX).

Value Proposition

In-depth business development and creation of new business opportunities made possible by digitalization

Yokogawa offers its customers a one-stop service covering the entire plant lifecycle and all levels of a company's operations, from the executive suite to the plant floor. The Company's expansive array of technologies and solutions are the product of long years of experience in the industrial automation and control business, and are critical assets for the Company's future business. Through the digitalization of business processes, Yokogawa will endeavor to further develop its customers' businesses and generate new opportunities based on existing business areas. Further, the Company will pursue digital transformation (DX) with the ultimate goal of helping its customers digitalize their management practices. Yokogawa will provide complete solutions that drive these changes. Yokogawa will help create new value for its customers by visualizing issues wherever they may occur in their business processes (their entire value chain, including the supply chain) and implement optimizations that will assist them in their effort to achieve a speedy and flexible management process.

Driving growth in the industrial automation and control business through digitalization



Comprehensive solutions supporting digitalization of customers' management processes

		Consulting	Engineering and design	Lifecycle services	System integration	Physical security and cyber security
Application	Management	Strategy planning	Supply chain optimization	Asset lifecycle optimization	Operational risk management	etc.
	Operation	Production management	Equipment management	Energy management	Quality management	etc.
Automation	Control	Control systems	Safety systems	Edge controllers		
	Field instruments	OT sensors		IIoT sensors		

Operation management and control

Integrated performance management and process optimization

Value
Insight
Analysis
Data

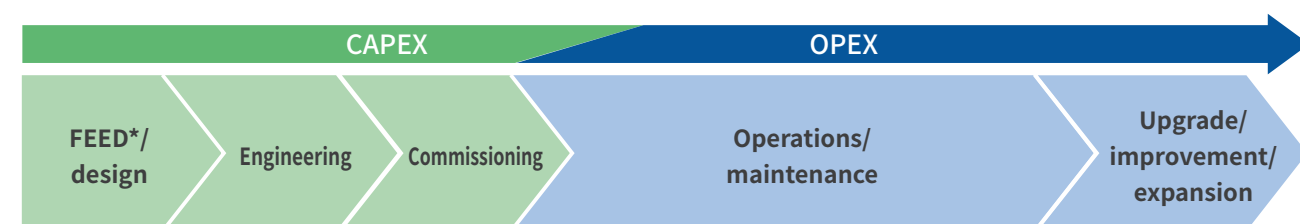
Operational Technology Information Technology

Value Creation (for both CAPEX and OPEX)

Achieving sustainable growth with a good balance of CAPEX and OPEX business

Yokogawa provides solutions over the entire lifecycle of plants that can remain in use for as long as 30 years or more, starting with the capital investments (CAPEX) that are made for the construction of new facilities and extending to operational expenditures (OPEX) for existing facilities in which the focus is on the identification and resolution of issues to improve productivity and the provision of maintenance services.

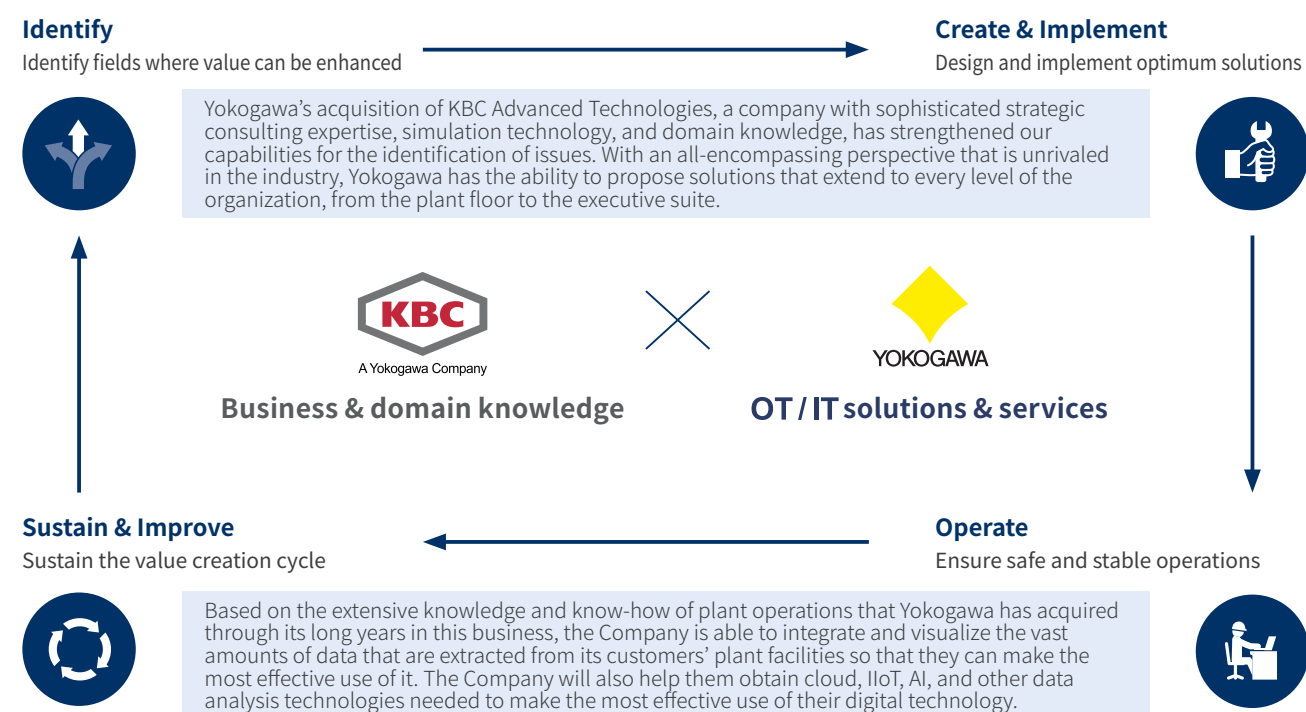
Our business is thus premised on taking a long-term perspective, and it is therefore crucial that we earn the trust of the personnel who are working at our customers' facilities. Customer trust is the foundation on which Yokogawa will realize sustained growth as it targets and strives to achieve a balance between the CAPEX and OPEX businesses.



*Front end engineering design

Continuous value creation throughout the plant lifecycle

Yokogawa seeks to analyze all of its customers' business activities to identify hidden issues, and then designs and implements optimum solutions that ensure safe and stable operations and sustain and improve performance. By combining cutting-edge information technology (IT) with the strengths in operational technology (OT) that the Company has cultivated over the years, we help to automate and optimize processes, manage risks, and improve efficiency throughout the value chain, including the supply chain.

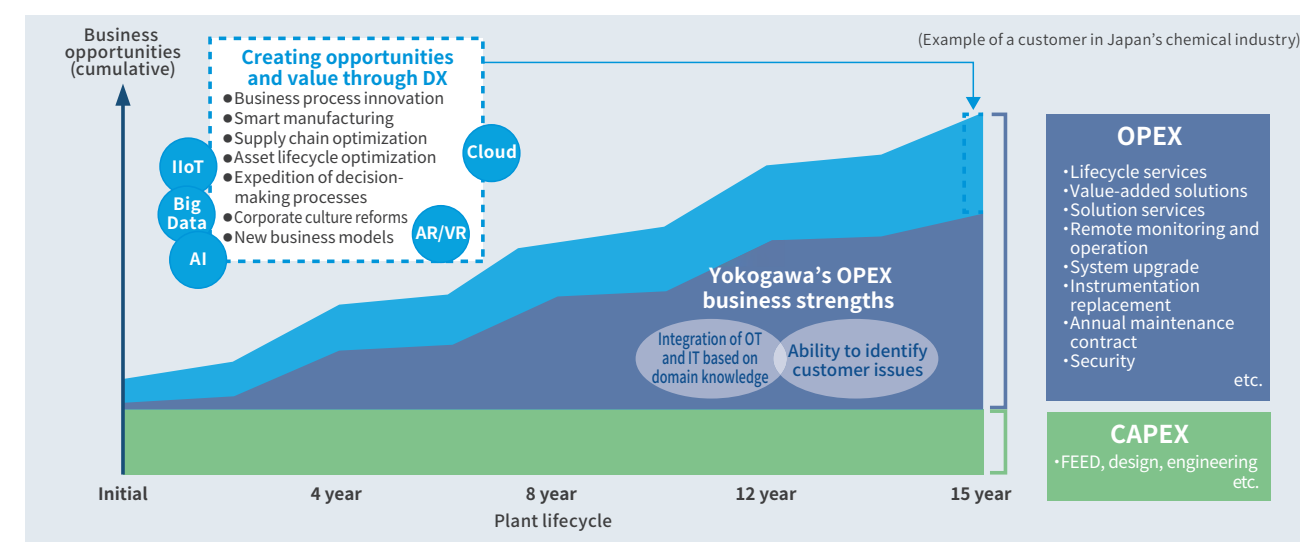


Business Model

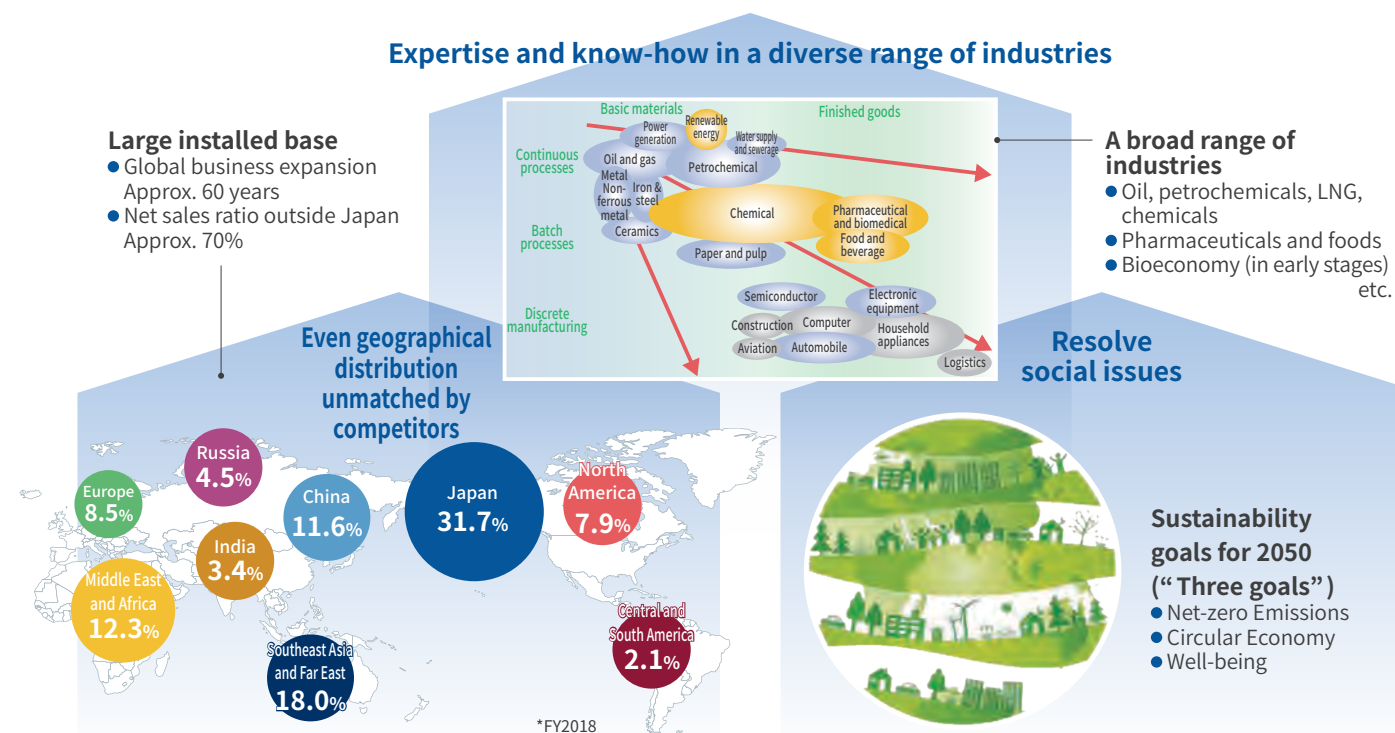
Creating business opportunities and value for customers through digital transformation (DX)

The OPEX business is cumulative, providing solutions over the entire lifecycle of customers' plant facilities.

Through DX, Yokogawa generates new business opportunities that make use of its strengths, and provides comprehensive solutions for both OPEX and CAPEX requirements. Customers' efforts toward DX and sustainability will open up new opportunities for Yokogawa to expand its business.



Yokogawa strengths that support sustainable growth



05
Yokogawa
Resources

**Social Capital**

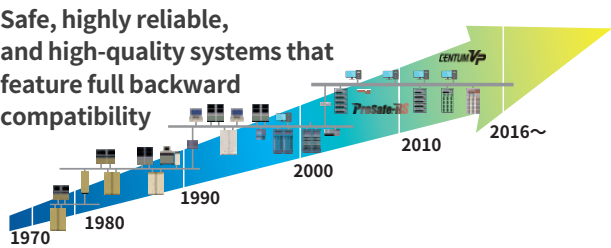
Customer base established through approx.

40,000

control system projects

99.99999%

availability (distributed control systems)



The Yokogawa Group puts the highest priority on safety with its provision of high-quality and highly reliable backward-compatible systems, maintenance services, consulting, and other solutions,

and aims to benefit society through the co-creation of value with its customers.

Working with its customers throughout the 30-year or so lifecycle of their plant facilities, Yokogawa has developed close relationships based on trust. This customer base is Yokogawa's most important asset, and it underpins the ongoing development of the Company's business.

On the firm foundation of this customer base, Yokogawa is expanding the scope of its solutions to cover entire value and supply chains, thereby leading to the co-creation of even more value for its customers.

**Manufacturing Capital**

Production sites in **13** countries

Sites in Japan **4** production

Sites outside Japan **14** production

Mindful that high precision and long-term stability are essential attributes of Yokogawa products, we are globalizing our production operations based on the quality-first principle. We aim

to achieve a total optimization of operations that will enable the global delivery of uniform-quality products at an appropriate cost and with a short turnaround time.

**Natural capital**

Use of water resources Promote efficient use of water resources by means such as **monitoring (enhanced) water usage at production factories and encouraging recycling of water used in production**


Energy consumption Reduce energy consumption by means such as **reforming business processes by utilizing digital technology, and enhancing labor productivity through a group production optimization strategy**

Greenhouse gas emissions Reduce greenhouse gas emissions by means such as **promoting energy-saving measures and shifting to the use of renewable energy sources**

Yokogawa has set sustainability indicators for efficient use of water resources, reduction of energy use, and reduction of greenhouse gas emissions at its Group company offices and factories, and has promoted the environmental management.

The Company has set a long-term greenhouse gas emissions reduction target for the year 2030 based on the 2 degrees Celsius target defined in the Paris Agreement.

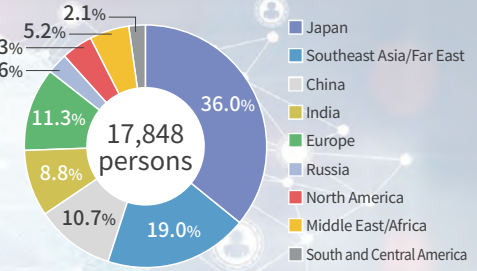
See Initiatives Aimed at Achieving Sustainability Goals on p. 34 for details.

**Human and Intellectual Capital**

Global human resources: **17,848** persons

Includes approx. 9,000 engineers

Composition by region



230 service centers in **80** countries **2,000** service engineers

Development centers in **8** countries outside Japan (Singapore, India, China, USA, UK, Netherlands, Germany, Norway)

Global delivery centers* in **5** countries (Singapore, India, China, Philippines, Romania)

*Formerly central engineering centers

5,933 intellectual properties owned (Number of patent, design, and trademark registrations and applications)



Human capital drives the co-creation of value with our customers and is the source of the high quality and reliability, advanced engineering, and project execution capabilities that are the Yokogawa Group's strengths and ensure its competitiveness.

Our business has grown in markets outside Japan, and presently more than 60% of our workforce is based outside Japan. While promoting the localization of its operations through such initiatives as the establishment of customer service centers near its customers, Yokogawa is striving to foster and enhance the capabilities of its workforce.

As the Yokogawa Group works to provide customers services and other solutions that capitalize on the superior skills and rich expertise of its workforce, it accumulates knowledge and expertise and comes up with new ideas, and in so doing expands its intellectual capital. This is a virtuous cycle and it is working effectively.

For the efficient utilization of its engineering resources, the Group has global delivery centers at five locations around the world that play a vital role in gathering and sharing engineering know-how.

06 Opportunities and Risks

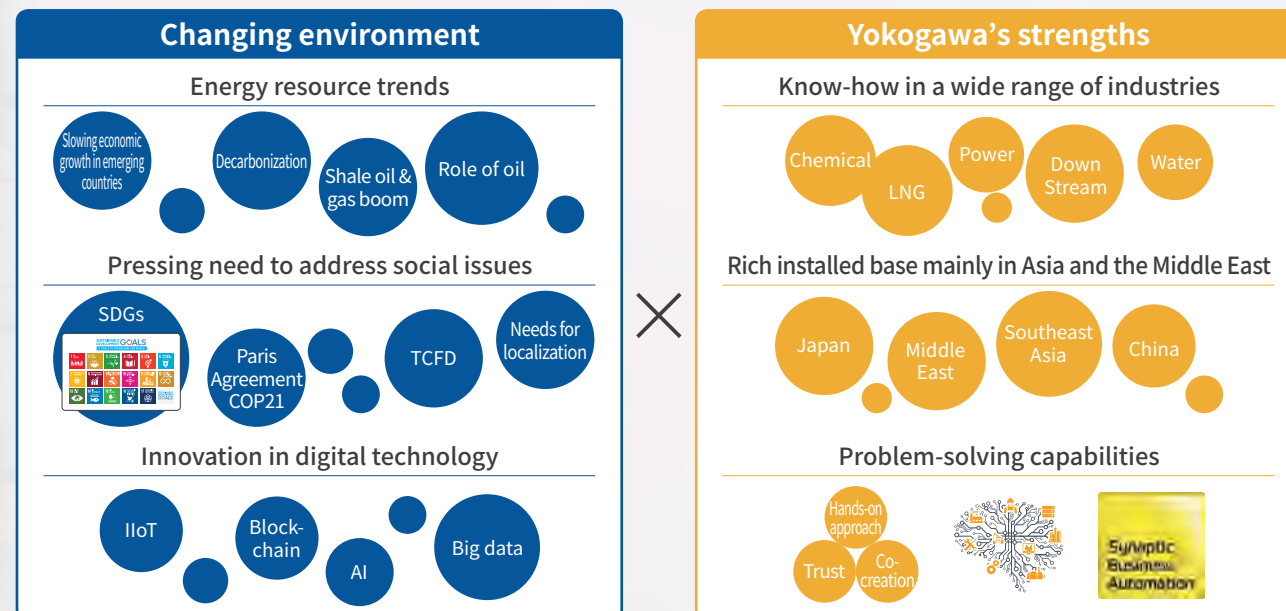
Yokogawa is taking on the challenge of transforming itself with the goal of establishing businesses dedicated to realizing a sustainable society based on the TF2020 mid-term business plan.

Operating in such an increasingly complex business environment, Yokogawa understands the importance of identifying and accurately evaluating the opportunities and risks that affect sustainability and growth.

Opportunities

The business environment surrounding Yokogawa is undergoing dramatic change as a result of innovation in digital technology and a growing need for solutions to social problems such as environmental issues and demographic changes, along with the changing positioning of oil among energy resources.

Yokogawa regards these changes in the business environment as opportunities for transformation and growth that allow the Company to continuously enhance profitability. The Company is taking steps toward the next transformation by creating opportunities for growth and establishing the foundation for growth mainly in Asia, including Japan, a region with large installed base, while taking advantage its strong and diverse customer base and problem-solving capabilities Yokogawa has cultivated over many years.



Risks

Business environment

- Impact of the changing external environment
- Changing prices of owned assets

Business activities

- Industrial automation and control business
 - ▶ Market trends in product and service fields with growth potential
 - ▶ R&D investments not yielding innovative technologies or anticipated results
 - ▶ Development of pioneering technologies by competitors
 - ▶ Need to meet market demand for cost reduction
 - ▶ Delay in parts procurement and production, etc.

- Talent recruitment and training
- Product quality
- Incompatibility of research investment with future market needs and targets

Other

- Infringement of intellectual property rights
- Leak and misuse of information due to unforeseeable circumstances
- Production shutdown of key products due to natural disasters and other sources of social disruption
- Changes in market environment resulting from the impact of SDGs

See p. 74 for details

Mid-term Business Plan

Transformation 2020

Create growth opportunities and consolidate the foundation for growth

• Transformation of existing businesses

- ▶ Expansion of OPEX business with a focus on installed base
- ▶ Further strengthening target industries (chemical, renewable energy)

• Creation of new businesses and transformation of business model

- ▶ Creation of life innovation business
- ▶ Creation of recurring revenue business model

• Improvement of productivity through Group-wide optimization

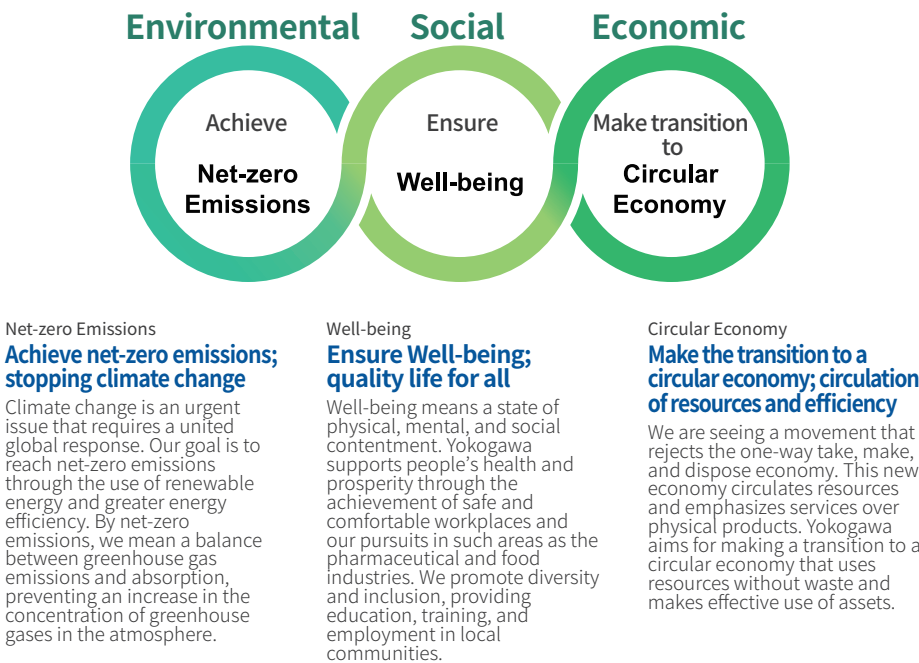
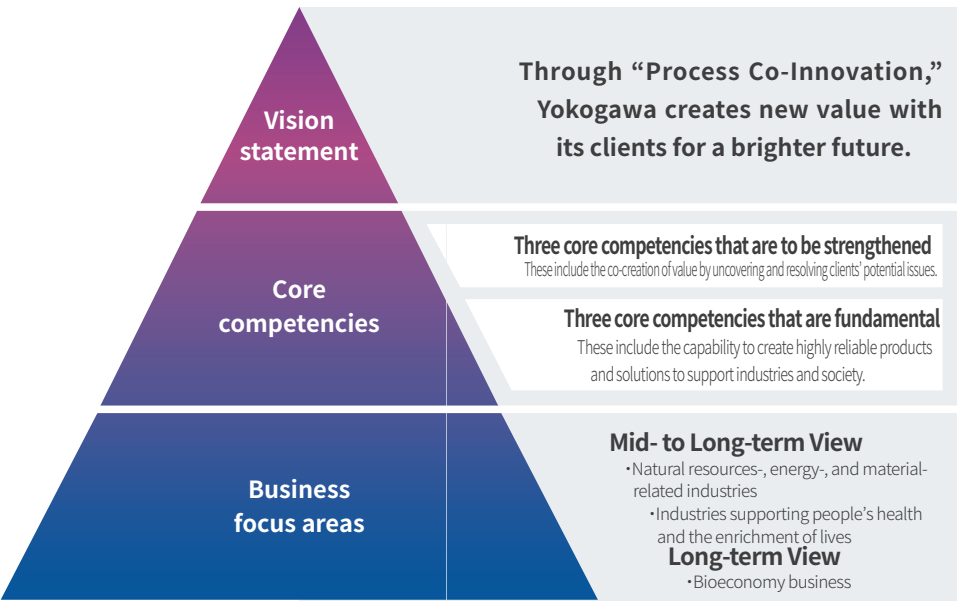
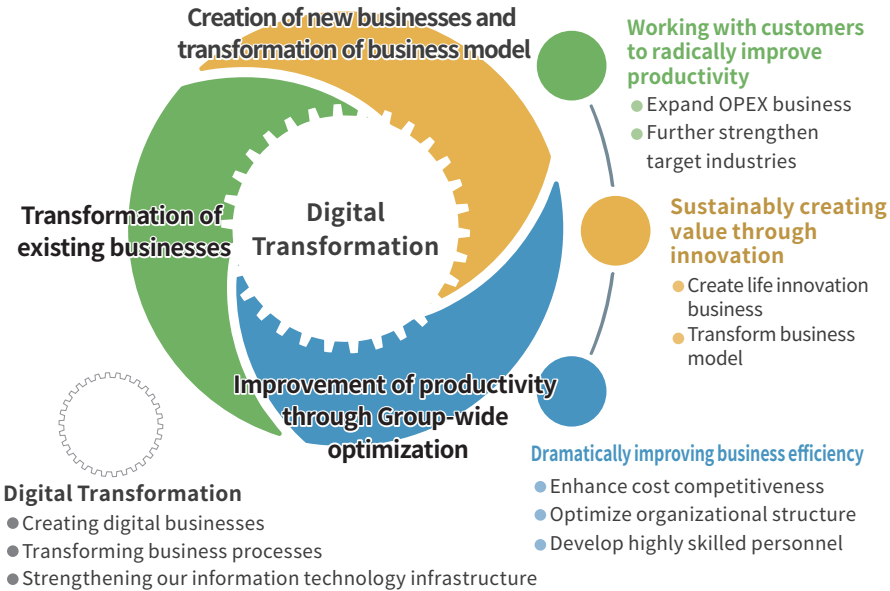
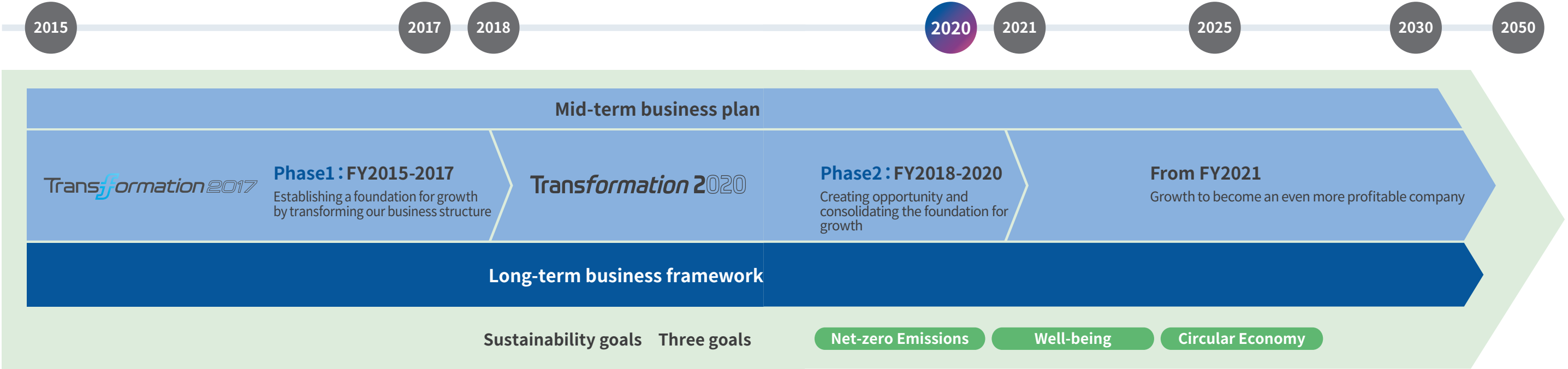
- ▶ Continuously enhance cost competitiveness
- ▶ Optimize organizational structure
- ▶ Develop highly skilled personnel

• Digital transformation

- ▶ Creating digital businesses
- ▶ Transforming our business processes
- ▶ Strengthening our IT infrastructure

To Be the Most Trusted Partner

In fiscal year 2015, Yokogawa established a long-term business framework that defined its goals for the next 10 years and described what will be needed to accomplish them. Subsequent to the establishment of that framework, there have been some notable shifts on the public policy front that include the adoption of the Sustainable Development Goals (SDGs) by the United Nations and the adoption of the Paris Agreement at the 21st Conference of Parties to the United Nations Framework Convention on Climate Change (COP21). In light of these changes, in August 2017 Yokogawa established sustainability goals (Three goals) and indicated the direction that it will take to achieve them. Moreover, in reviewing the direction it will take under the long-term business framework, Yokogawa has clarified the ideals that it will strive for in the 10 years and beyond from May 2018.



— President Nara's Overview of Strategies —



**Aspiring for growth in
our businesses and the realization
of a sustainable society**
through long-term trust-based relationships with our customers

N. Nara
President and CEO

Basic Strategies for Transformation 2020 Mid-term Business Plan

Under the Transformation 2020 (TF2020) plan, which was launched in fiscal year 2018, the Company aims to create growth opportunities and consolidate its foundation for growth, and thereby make progress toward the goals set out in the Company's long-term business framework. The TF2020 plan describes as follows what kind of company Yokogawa should strive to become:

A company that seeks to build a sustainable society by using its core measurement, control, and information technologies and pursuing digital technology innovation and co-innovation with its customers that enhances the productivity of business processes in a wide range of industries. To realize this aim, Yokogawa is now working on achieving the three transformations that were described in the TF2020 plan. With us now in the second year of this plan, I would like to take the opportunity to explain the goals of these three transformations, review the results that were achieved in fiscal year 2018, and describe the initiatives that Yokogawa will undertake next to achieve the goals of TF2020.

The first of the three transformations is the transformation of existing businesses. The industrial automation and control business accounts for about 90% of Yokogawa's net sales. In recent years, business growth has been led by large-scale facility construction projects related to LNG and other energy resources mainly in emerging markets and resource-rich countries. However, capital investment in new plants is subject to uncertainties since decisions and project trends associated with such investment are susceptible to external factors including changes in crude oil prices, and such large-scale investments can have a significant financial impact on our business. Therefore, under TF2020, Yokogawa seeks to

build a robust management foundation by shifting to a business portfolio that is not heavily dependent on new large-scale facility construction projects. Taking advantage of its wealth of experience gained through over 40,000 plant control system projects worldwide, the Company will focus on improving the productivity of customers' existing plant facilities by offering solutions that improve the efficiency of maintenance and operations. By doing so, Yokogawa will build resilience that can withstand any changes in the external environment.

The second transformation is the creation of new businesses and transformation of our business model. Yokogawa seeks to create value by applying its core measurement and control technologies in areas other than the energy field. With the goal of resolving social issues, the life innovation business targets the pharmaceutical, food, and bioeconomy sectors to support people's health and enrich lives. These are defined as focus areas in the Company's long-term business framework. In recent years we have witnessed an increase in pharmaceutical products that are developed and produced using biotechnology. Among our initiatives is the development of cell-based manufacturing solutions based on Yokogawa measurement and predictive control technologies that improve the efficiency of the cell culture process and thereby support the development and production of antibody medicines. Investment in the pharmaceutical sector is largely focused on the development of new drugs. Yokogawa's approach of using its technologies to enhance productivity both fulfills the medical needs of patients suffering from diseases for which no effective treatment is yet available and contributes to the pharmaceutical industry, and is consistent with the Company's goal of promoting well-being.



Moreover, Yokogawa will transform its business model of simply selling products and services by engaging in a results-based business that can reduce customers' initial investments and a recurring business that emphasizes the offering of services.

The third transformation is the improvement of productivity through Group-wide optimization. Yokogawa will make use of robotic process automation (RPA) and other digital technologies that improve efficiency and transform its internal business processes. The Company will speed up its efforts to enhance the effectiveness of these reforms.

In support of these three strategies, Yokogawa is promoting digital transformation (DX) both in and outside the company. We will help our customers run their businesses more efficiently by utilizing the data obtained through the use of information technology (IT) and leveraging the expertise acquired in using operational technology (OT) at their production sites, and will explore ways to create new value by integrating OT and IT. By making full use of digital technology, we will enhance our competitiveness.

Review of Fiscal Year 2018 and Future Initiatives

A year has passed since the start of TF2020. During this time, customers' expectations of Yokogawa have gradually shown signs of change. For example, there is a growing demand for localization primarily in emerging markets, as it creates local jobs and contributes to regional economic growth. Further, there is a greater expectation that we will help to address social issues by, for example, reducing customers' environmental footprint. These changing needs bode well for Yokogawa's business.

With respect to Yokogawa's goal of transforming existing businesses , the Company is deepening its relationships with customers in the industrial automation and control business, and has been capitalizing on its installed base to make steady advances with the OPEX business^{*1}  mainly outside Japan. Orders have increased in regions such as Southeast Asia, Europe, and India, mainly in the service business. In addition, the CAPEX business^{*2}, which leads to future OPEX businesses, has grown significantly. We are engaged in new large-scale CAPEX projects in the oil & gas industries' upstream (development and production) and downstream (refining, transportation, and sales) sectors, primarily in the Middle East. To expand our solutions business, Yokogawa units such as KBC Advanced Technologies (a subsidiary with expertise in the consulting business) will need to step up their efforts to integrate advanced process control (APC), energy management systems (EMS), and other Yokogawa solutions, and speedily expand their business in Asia.

*1: Business focused on solving issues to improve productivity at existing plants and on providing maintenance services at these facilities.

*2: Business related to capital investment in new plants.

With respect to the Company's goal of further strengthening in target industries , strong investment in the chemical sector has led to an increase in orders primarily outside Japan, in markets such as India and China. Yokogawa will continue to provide new solutions to its existing customers while attracting new customers in China and other regions. Regarding the goal of cultivating the renewable energy business, the Company needs to accelerate its efforts by expanding its portfolio through collaboration with other companies having the requisite know-how.

At the heart of Yokogawa's value creation process is the advantage of close relationships with customers that the Company has worked with for 30 years or longer, over the entire lifecycle of the products that have been installed at their plants. Based on the strong trust that has been established with these customers, Yokogawa has been able to gain access to data on their site operations to identify destabilizing factors in individual processes and propose solutions. In addition to its strengths in providing high-quality and highly-functional tools and services that are indispensable to operations and maintenance, Yokogawa has made dramatic advances in its ability to resolve issues for its customers by such means as using


insights from field data to enhance productivity, and this is due in part to the Company's 2016 acquisition of KBC Advanced Technologies. We believe the promising results for fiscal year 2018 are a reflection of our customers' positive evaluation of what we have accomplished thus far.


With respect to Yokogawa's goal of creating new businesses and transforming its business model , the Company is taking on new challenges in such fields as drug discovery support as part of its life innovation business. To succeed in such new businesses, it is crucial that the Company recruit personnel with the requisite expertise. In December 2018, Yokogawa welcomed into its fold NKS Corporation, a company that specializes in the validation of facilities used in the production of pharmaceuticals, medical equipment, and foods. The Company also expanded its resources by such means as recruiting mid-career personnel with a deep knowledge of these fields. Due in part to these initiatives, sales were up 40% from fiscal year 2017, with the largest increases being recorded in Japan, China, and Europe. It is particularly noteworthy that Yokogawa's bio solution business centering on confocal scanners set new records for both orders and sales. The Company will leverage its experience and track record in a wide range of industries in Japan to further accelerate its business expansion while investing in the development of solutions for cell-based manufacturing and other new products in the pharmaceutical and food industries, which require high levels of safety and efficiency.

In addition to the initiatives described above, in November 2018 Yokogawa acquired a stake in AlgaEnergy, a Spanish company that produces microalgae for use in biostimulant products that promote plant growth, and this company's development of additional commercial applications in such fields as foods, cosmetics, and pharmaceuticals is highly anticipated. AlgaEnergy's production facilities are located next to a thermal power plant. The microalgae perform photosynthesis using the CO₂ generated by the power plant—a perfect illustration of how a circular economy operates. The bioeconomy is a field that Yokogawa will pursue on a long-term basis. Using this strategic partnership with AlgaEnergy as a model, Yokogawa will continue to develop applications in which customers in the manufacturing sector can reduce their environmental footprint by reusing CO₂ and other environmentally hazardous substances to produce bio resources. While Yokogawa has made a good start with this new collaboration, the Company needs to speed up its efforts.

In addition, as part of its business model transformation, Yokogawa launched amnimo Inc. in May 2018 to study and develop new ways to add value by leveraging its IIoT architecture. The Company will take advantage of IIoT technology to strengthen its alliances with customers and partner corporations in a diverse range of fields and co-create new value.



Regarding the improvement of productivity through Group-wide optimization , Yokogawa has made steady progress in initiatives as both a resource supplier and investor, in line with a basic policy that calls for the generation of resources to be used as capital for investment in future growth. Specifically, as part of its effort to optimize the Group's structure, the Company has utilized RPA to automate over 60 operations and improve productivity. To optimize its cost structure, Yokogawa is utilizing digital technology to reduce costs. Examples include making greater use of a global delivery center (formerly called a central engineering center) in India. At the same time, the Company is investing in new businesses such as bioeconomy and life innovation. Furthermore, to give employees the specialized knowledge and skills needed to transform Yokogawa, the Company continues to provide training through such initiatives as the establishment of Yokogawa University, a corporate institution that focuses on e-learning.

Digital transformation  (DX) is the driving force for the value creation that will be needed to tackle the three transformations of TF2020. As part of its DX initiatives, in April of this year Yokogawa launched a new organization, the Digital Enterprise Business Headquarters, to present a blueprint for transformation. With the ultimate goal of integrating OT and IT, the new organization first undertook the standardization and cloud migration of the IT infrastructure of over 110 Group companies, thereby eliminating one-third of approximately 600 applications and optimizing IT infrastructure globally. To create value for its customers, Yokogawa worked to utilize its IIoT architecture and enhance security services, and these initiatives have yielded promising results for the future. The Company will continue to invest in DX, which serves as a driving force for all transformations.

See p. 28 for details 

Yokogawa's Future and its Commitment (Mission Statement)

As the newly appointed president, I believe my mission is to accelerate the pace of the transformations and achieve the targets defined under TF2020, so that we can become an even more profitable company and prepare the way for the next stage of growth.

When Yokogawa's businesses are examined from a global perspective, it is clear that the Company's key customers outside Japan are in the LNG, petrochemical,

and energy sectors. In Japan, the Company participates in projects with a broad range of customers in the manufacturing sector, and provides them solutions that are tailored to the requirements of a changing business environment. As Yokogawa has transitioned to a solutions-business model in the Japanese market over the past five to six years, it has accumulated expertise and know-how through a broad-ranging collaboration with other companies. The knowledge and networks that the Company has built up in Japan also hold great significance for its customers outside Japan. An analysis of Yokogawa's businesses by product/service, region, and industry reveals that the Indian and Chinese markets, and the chemical industry and renewable energy sector, have great potential. With respect to products and services, Yokogawa will promote services related to recurring businesses and win contracts at a faster pace.

In terms of new businesses, Yokogawa needs to speed up the development of solutions for cell-based manufacturing and single-cell analysis. To pursue these new areas, we must recruit personnel who have the required knowledge and expertise. In addition to its efforts in recruitment and employee training, the Company will continue, as in the previous year, to focus on M&A and collaboration and invest in growth areas.

With respect to DX, which serves as a driving force for transformation, value creation within the Company is directly linked to new value for customers. Yokogawa will step up its efforts to both enhance operational efficiency at the Company and deliver value to its customers.

Yokogawa was well aware of the difficult business environment that it faced when it launched the TF2020 plan, and I believe now that the need is ever greater for us to speed up our efforts and vigorously implement transformation.

I joined Yokogawa because I was inspired by the role that the Company plays in providing rock-solid support to industry and society. Yokogawa remains committed to a corporate philosophy that reads As a company, our goal is to contribute to society through broad-ranging activities in the areas of measurement, control, and information. Individually, we aim to combine good citizenship with the courage to innovate, and seeks always to build stronger bonds of trust with society. Yokogawa is well positioned not only to gather and accumulate data but also to make full use thereof. As we transition toward an era in which new value is created through the use of data, I believe the Company can leverage its unique position to establish economic and environmental partnerships and contribute to the development of society and industry. In the chemical industry, for example, inconsistencies in the supply of raw materials is having an impact on quality. When quality-related issues arise, we can identify the causes and propose solutions by reviewing all operational processes from raw material supply to shipping. With its track record in offering control systems, sensors, and analysis software, among other products, Yokogawa has the capability in a steadily evolving business environment to identify issues that customers themselves may be unaware of and to provide solutions that enhance product quality, ensure stable operations, and reduce environmental impact, and in so doing contributes to society.

In addition, Yokogawa has the advantage of long-term customer relationships. It is important for the Company to recognize that it is well positioned to contribute to society, and to step up its efforts to enhance the capabilities of its personnel and utilize its technologies.

In January 2019, Yokogawa made it onto the Global 100 Most Sustainable Corporations in the World Index and was rated highly for its clean revenue and innovation



capacity. In addition to having a strong track record in helping customers improve productivity and safety at their manufacturing sites, Yokogawa has been commended by parties outside the Company for its contributions in reducing CO₂ emissions and its bioeconomy initiatives for the realization of a circular economy.

In March 2019, Yokogawa announced its support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). This represents Yokogawa's firm determination to confront climate change issues and prepare for the future. Yokogawa will endeavor to earn the strong confidence of its customers to both produce profits and make progress toward the achievement of the United Nations' Sustainable Development Goals (SDGs), including the reduction of our environmental footprint, and in so doing will contribute to sustainability and the growth potential of society.

While conducting business in Southeast Asia and other locations around the world, I have come to see how much our customers appreciate the Yokogawa approach to seeing everything through to a successful completion and making customers the first priority. The Company's proven track record in establishing successful long-term relationships with customers based on an enduring corporate culture will no doubt remain a competitive advantage even in turbulent times.

My vision for Yokogawa is to be recognized as a company where employees can thrive and enjoy their work and be trusted and respected by society and customers. I believe we have the mission to remain committed to the principles that we have inherited from our predecessors. To accomplish all this, we will continue to achieve growth by supporting our customers' businesses and contributing to society.



Detailed review and action plan



Transformation of existing businesses

Industrial automation and control business: Expansion of OPEX business

Business centering on installed base has steadily expanded, while accelerated effort is needed to expand the solutions business

Strategy

- Expand the solutions business in Japan and KBC's consulting business to other regions and industries.
- Utilize data obtained from a rich installed base to optimize the service business.

Target

- OPEX growth outside Japan: **7 to 10% per year**

*FY17 result: approx. 70 billion yen

*OPEX business divided into overseas and domestic categories, and overseas category further divided into (1) maintenance and operations and (2) solutions segments

Main activities

- Launched and strengthened OpreX™ brand
- Signed global reseller license agreement with Chevron for PETRO planning software
- Expanded scope of lifecycle services

Results

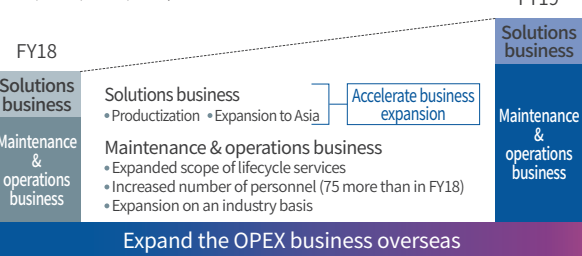
FY18 OPEX growth rate outside Japan: 8.3%

- Steady expansion primarily in the service business in Southeast Asia, Europe, India, etc.

Action plan

Further integration of existing solutions

(KBC, APC, EMS, etc.)



Transformation of existing businesses

Industrial automation and control business: Further strengthen in target industries

Investment remains strong in chemical industry / Need to pick up pace of efforts to develop renewable energy business

Strategy

- Expand bulk chemical and specialty chemical businesses outside Japan.
- Develop new renewable energy markets.

Target

- Growth: **3 to 5% per year**

*Control orders in chemical and renewable energy industries

*FY17 result: approx. 40 billion yen

Main activities

- Boosted sales to fertilizer industry (USA, China, ASEAN).
- Developed new customers in specialty chemicals industry
- Established new company in Norway to meet anticipated demand in upstream and renewable energy sectors

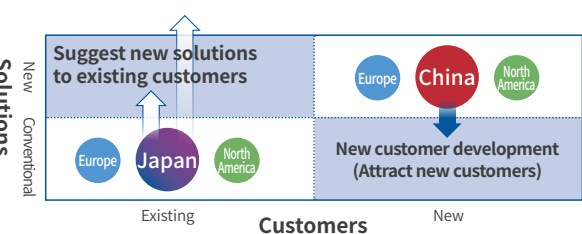
Results

Targeted growth in FY18: 8.1%

- Growth focusing on chemical industry (India and China)
- Growth in renewable energy industry, for biomass power generation, etc.

Action plan

Chemical: Expand business targeting overseas operations of Japanese companies (North America & Europe)



Renewable energy: Portfolio expansion through collaboration with other companies with expertise

Transformation of existing businesses

Measurement business, aviation and other businesses

Measurement business

- Focus on competitive/unique products (maximizing capital efficiency).
- Target new growing markets.

Aviation and other businesses

- Transferred the shares of Yokogawa Denshikiki Co., Ltd., which specialized mainly in the marine navigation equipment business (end of December 2018).
- Focusing resources on transformation of aviation-related business (improving profitability).



Creation of new businesses

Life innovation business

While Yokogawa has started up and is making good progress in developing this business, the Company needs to accelerate these efforts.

Strategy

- Expand businesses based on existing businesses and new technologies and products currently under development.
- Expand solutions portfolio by actively utilizing external resources and M&A.

Target

- Increase sales **2 to 3 times by FY20 (compared to FY17)**

*FY17 result: approx. 12 billion yen

Main activities

- Bioreactors: Accelerated development and commercialization
- Increased headcount (including mid-career recruitment)
- Acquired NKS Corporation (expansion of validation business)
- Capital participation in AlgaEnergy (Spain)

Vision

- Radically improve productivity across the entire value chain, from the basic research of pharmaceuticals and foods to logistics and services.

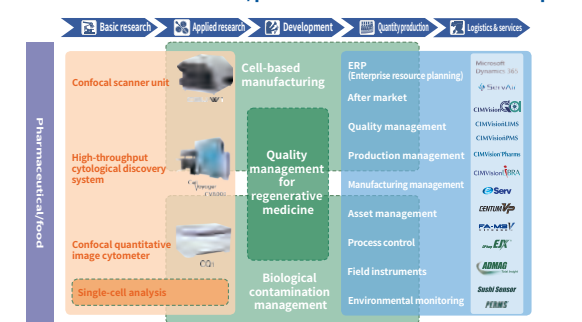
Results

FY18 sales up approx. 1.4 times year on year

- Expanded our business in food and pharmaceutical industries (Japan, China, and Europe)
- Investments (including M&A): Approx. 3 billion yen

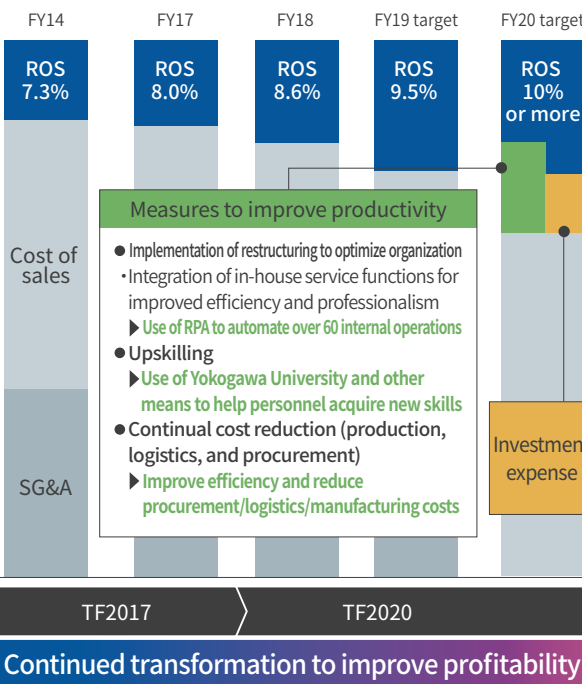
Action plan

Aim to increase sales in food/pharmaceutical industries in Japan.



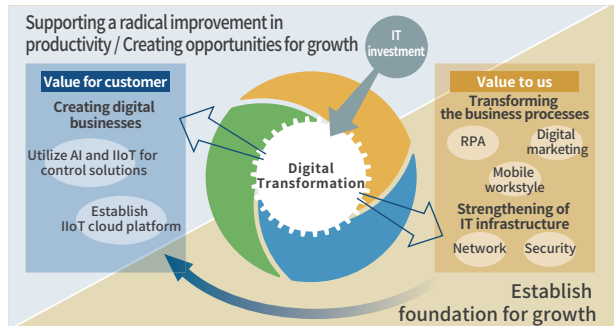
Improvement of productivity through Group-wide optimization

Activities to establish a firm foundation for growth by improving productivity are going well. Speed up implementation of measures to optimize organization through restructuring.



Digital transformation (DX)

Create value in-house that will allow us to deliver more value to our customers.



Goals

Value for Yokogawa → Value for customer

Review and action plan

- Moving forward with global optimization of IT applications (plan to reduce number of apps by 1/3)
- Completed installation for IT infrastructure globally
- Progress being made in implementing hybrid cloud IT infrastructure
- Progress being made with automation of internal operations using RPA.
- Preparations underway for establishment of global data lake and introduction of BI tools to realize data-driven management
- Launched Digital Enterprise Business HQ to expand delivery of DX services to customers
- Launched IIoT introduction support service business (recurring type)
- Expanded line-up of plant data-driven service products.
- Strengthened security services business.



Augmenting our corporate value in the mid- to long-term and maximizing shareholder value by enhancing profitability and achieving sustained growth

Junichi Anabuki
Director and Executive Vice President



Review of Fiscal Year 2018 Results and Outlook for Fiscal Year 2019

In fiscal year 2018, orders came to ¥432 billion, a ¥31.7 billion (7.9%) year on year increase. When the impact of the stronger yen mainly against emerging-market currencies and the transfer of shares of a subsidiary is excluded, orders were up even more substantially, by ¥44.5 billion. This was the result of a steady increase in the number of industrial automation and control projects, mainly outside Japan. By region, there were substantial increases in the Middle East, North America, and Asia (centering on India and China). By industry, significant growth was witnessed in the downstream sector, while increases were also recorded in the upstream and chemical sectors.

Net sales declined ¥2.9 billion (0.7%) year on year, to ¥403.7 billion. In real terms (excluding the impact of the stronger yen mainly against emerging-market currencies and the transfer of shares of a subsidiary), net sales increased ¥8.5 billion year on year. Due to an increase in the order backlog, sales are expected to increase in fiscal year 2019 and possibly also in subsequent years.

While factors such as the rebound from the allowance for doubtful accounts that was recorded in fiscal year

2017 and the real-term growth in net sales contributed to an increase in profits, operating income was up by just ¥34.6 billion, a ¥1.9 billion year-on-year increase, due to strategic investments, temporary costs, and other factors. Profit attributable to owners of parent rose ¥7 billion year on year to ¥28.4 billion, due in part to the rebound from the ¥9.2 billion impairment loss that was recorded in fiscal year 2017.

In fiscal year 2019, sales and income are expected to increase due to the large order backlog.

Orders are expected to be ¥430 billion, about the same level as the previous year, due to the anticipated impact of the transfer of the shares of a subsidiary and the decline in the number of large projects.

Despite the downward impact of the transfer of subsidiary shares, net sales are expected to be up ¥16.3 billion (4.0%) year on year to ¥420 billion, owing to the large backlog of orders that were received in fiscal year 2018.

We expect to see an increase in operating income for the third consecutive year and project that this will reach ¥40 billion, an all-time high, due to higher net sales and the resulting increase in gross profits.

	FY2017 Results (A)	FY2018 Results (B)	FY2019 Forecast (C)	Difference (B) - (A)	% change (B) ÷ (A) - 1	Difference (C) - (B)	% change (C) ÷ (B) - 1
Orders (Billions of yen)	400.3	432.0	430.0	31.7	7.9%	(2.0)	(0.5)%
Net sales (Billions of yen)	406.6	403.7	420.0	(2.9)	(0.7)%	16.3	4.0%
Operating income (Billions of yen)	32.7	34.6	40.0	1.9	5.8%	5.4	15.6%
ROS (%)	8.0	8.6	9.5	0.6pt	—	0.9pt	—
Profit attributable to owners of parent (Billions of yen)	21.4	28.4	29.0	7.0	32.4%	6	1.9%
EPS (Yen)	80.27	106.54	108.64	26.27	32.7%	2.10	2.0%
ROE (%)	8.1	10.1	9.7	2.0pt	—	(0.4)pt	—
Exchange rate to 1 U.S. dollar (Yen)	110.7	111.07	110	0.37	—	(1.07)	—

Key Performance Indicators and Targets for TF2020 Mid-term Business Plan

Under the TF2020 mid-term business plan, which was announced in May 2018, Yokogawa is seeking to maximize both corporate and shareholder value over the medium- to long-term, and will be guided in this effort by the five key performance indicators of growth in orders/net sales,

earnings per share (EPS) growth, return on sales (ROS), return on equity (ROE), and organic free cash flow (FCF)^{*2}. By increasing profits, generating cash, and improving capital efficiency, we aim to outperform market expectations.

KPIs	Targets
Growth in orders / net sales	3-5%/year
Growth in earnings per share (EPS)	7-9%/year ^{*1}
Return on sales (ROS)	10% or more (FY2020)
Return on equity (ROE)	10% or more (FY2020)
Organic free cash flow ^{*2}	85 billion yen or more (cumulative over three years)

Estimated exchange rate: 1 U.S. dollar = 110 yen
^{*1} The growth rate is real growth, excluding temporary factors in FY2017 (e.g., impairment of goodwill, the recording of allowance for doubtful accounts, and gain on sale of assets)
^{*2} Organic free cash flow = free cash flow (FCF) + strategic investment (70 billion yen cumulative over three years)

Here, we will review our performance in fiscal year 2018, the first year of the mid-term business plan, with respect to the key performance indicators targeted for fiscal year 2020.

First, regarding the targets for orders and net sales, while net sales remained relatively flat in fiscal year 2018, orders grew more than 10% in real terms (excluding special factors), surpassing our expectations. In fiscal year 2019 and beyond, the Company will seek to increase sales by capitalizing on a large order backlog, and will bring earnings per share (EPS) closer to the target level.

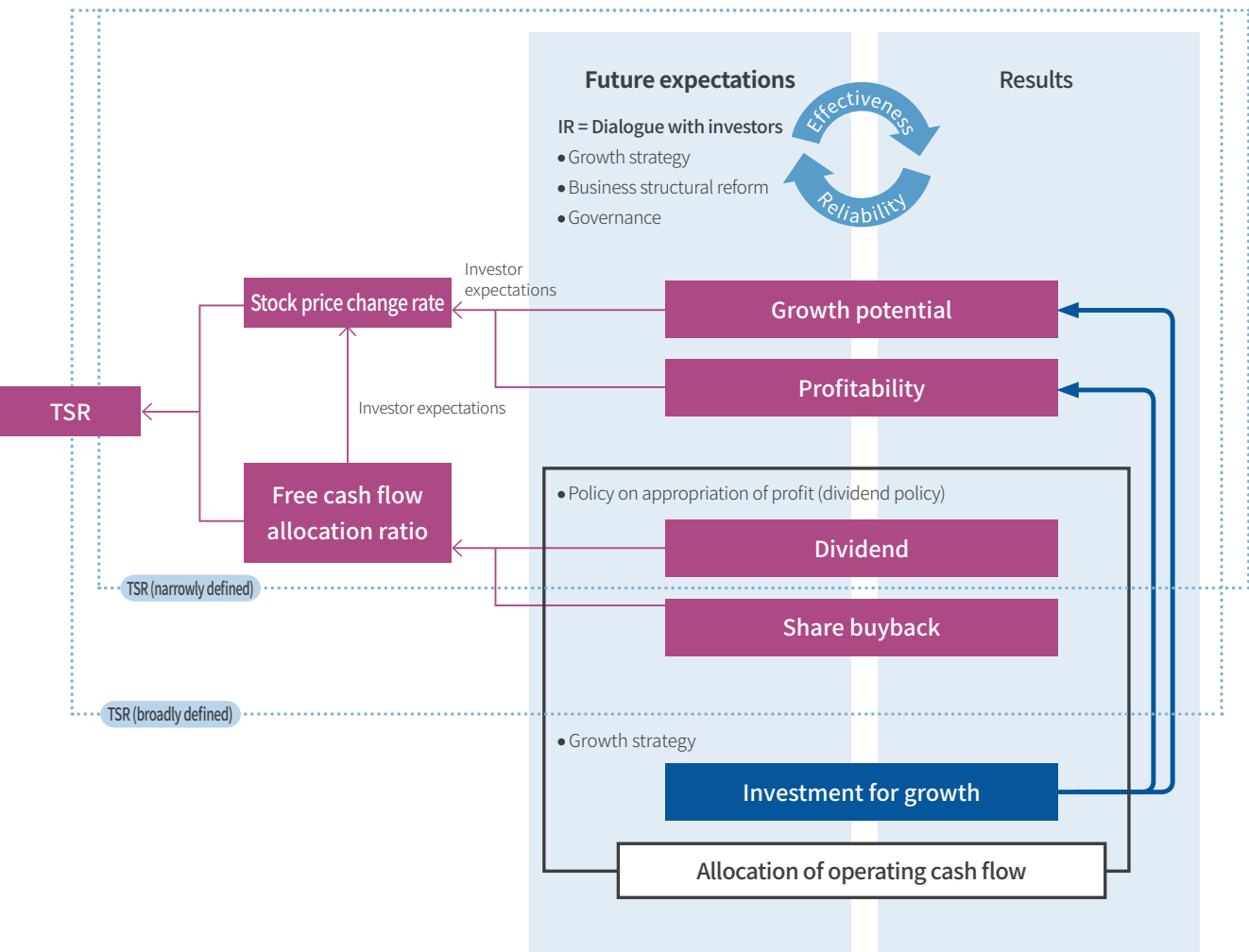
Return on sales (ROS) was 8.6%, a 0.6% increase from the fiscal year 2017 level.

Return on equity (ROE) was 10.1%, a 2.0% increase from the fiscal year 2018 level, surpassing the mid-term target, due in part to extraordinary gains from the sale of assets. Yokogawa will continue its efforts to maintain an ROE of at least 10%.

Fiscal year 2019—the interim year of TF2020—will be a crucial year for achieving the key performance indicators targeted under TF2020. Going forward, Yokogawa will accelerate the transformations identified in the TF2020 plan and endeavor to maximize its corporate value, with the aim of realizing robust profitability that is not impacted by the market environment.

Capital Policy and Financial Strategy

Basic Approach



Under the TF2020 plan, Yokogawa is seeking to maximize cash flows. The Company intends to prioritize allocation of the cash that it generates to investments for growth with the goal of maximizing corporate value. Through these investments Yokogawa will aim to enhance its growth potential and profitability and further augment cash flows to continuously enhance its corporate value. The Company also aims to realize a total shareholder return (TSR)* that exceeds shareholders' cost of equity. Yokogawa intends to vigorously enhance shareholder return, providing that the Company remains on a sound financial footing. It will seek to secure a consolidated payout ratio of at least 30% and an increase in dividend payments aligned with increased profits. Yokogawa will strive to maintain stable dividend payments based on

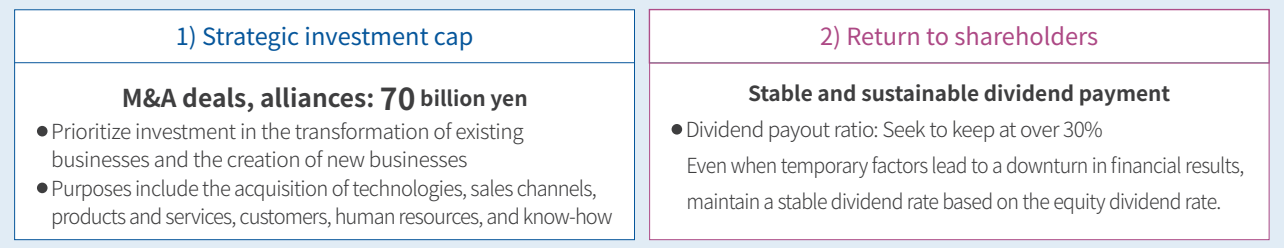
dividends on equity (DOE) even if a large loss is expected due to some temporary factor.

To realize strategic investments for growth and aggressive shareholder returns, maintaining a sound financial footing is crucial. The Company needs to anticipate discontinuous risks such as drastic changes in the external business environment. In our view, an optimal capital structure is achieved by maintaining a shareholders' equity at a level needed to retain an A rating and securing investment funds to ensure future growth even if risks materialize. In fiscal year 2019, Yokogawa will continue to actively allocate its funds while maintaining an optimal capital structure.

*TSR: Total shareholder return



Prerequisite: Keep shareholders' equity at a level that can maintain an A rating



1) Capital investments for growth (strategic investments)

Assuming that it maintains an optimal capital structure, the Company will set aside 70 billion yen for capital investments such as M&As and alliances over the three-year period of the TF2020 plan.

2) Dividend policy (basic policy on allocation of profits)

The Company will also actively improve dividend payments based on the following dividend policy.

The distribution of earnings to shareholders is a top priority for Yokogawa. By improving profitability, the Company aims to secure the funds needed to continue increasing its dividend payments. Specifically, Yokogawa will strive to exceed a 30% consolidated dividend payout ratio while ensuring it retains the financial base required to make the investments needed to maximize business performance, deliver value to shareholders over the mid- to long-term, and ensure continued growth. The Company also aims to maintain a stable dividend based on the dividend on equity (DOE) ratio, even when business performance deteriorates due to temporary factors.

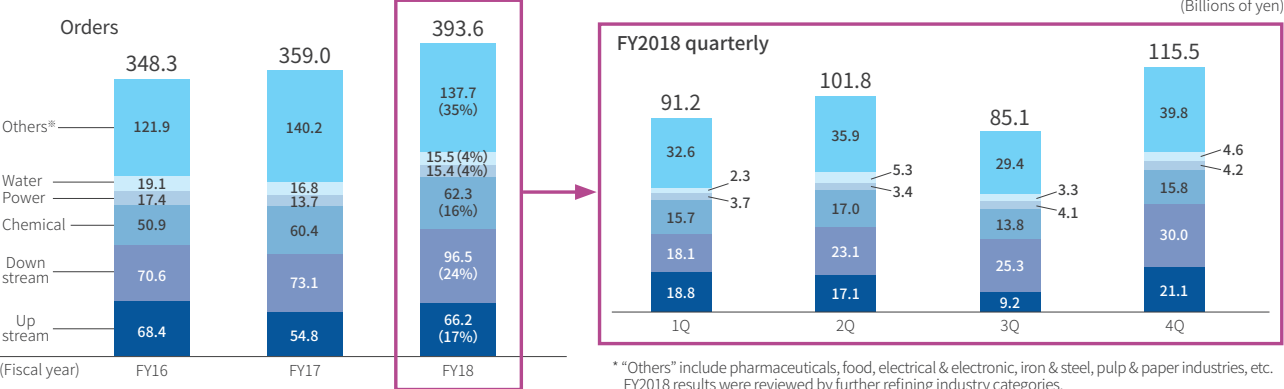
Reference data

Industrial automation and control business by region

Orders	FY2017 (A)	FY2018 (B)	YOY (B) - (A)
Japan	107.3	111.4	4.1
Asia	118.0	124.5	6.5
[Southeast Asia and Far East]	[66.5]	[64.3]	[(2.2)]
[China]	[39.7]	[42.6]	[2.9]
[India]	[11.8]	[17.6]	[5.8]
Europe/CIS	52.6	53.2	0.6
Middle East/Africa	43.7	56.7	13.0
North America	29.3	38.2	8.9
South and Central America	8.1	9.6	1.5
Subtotal Outside Japan	251.7	282.2	30.5
Total	359.0	393.6	34.6
Exchange rate to 1 U.S. dollar	110.70 yen	111.07 yen	0.37 yen

Orders	FY2017 (A)	FY2018 (B)	YOY (B) - (A)
Japan	107.0	109.4	2.4
Asia	115.5	120.3	4.8
[Southeast Asia and Far East]	[67.4]	[67.3]	[(0.1)]
[China]	[35.5]	[40.5]	[5.0]
[India]	[12.6]	[12.5]	[(0.1)]
Europe/CIS	52.2	49.5	(2.7)
Middle East/Africa	52.3	49.0	(3.3)
North America	28.5	28.5	0.0
South and Central America	7.8	8.1	0.3
Subtotal Outside Japan	256.3	255.4	(0.9)
Total	363.3	364.8	1.5
Exchange rate to 1 U.S. dollar	110.70 yen	111.07 yen	0.37 yen

Industrial and automation and control business by industry



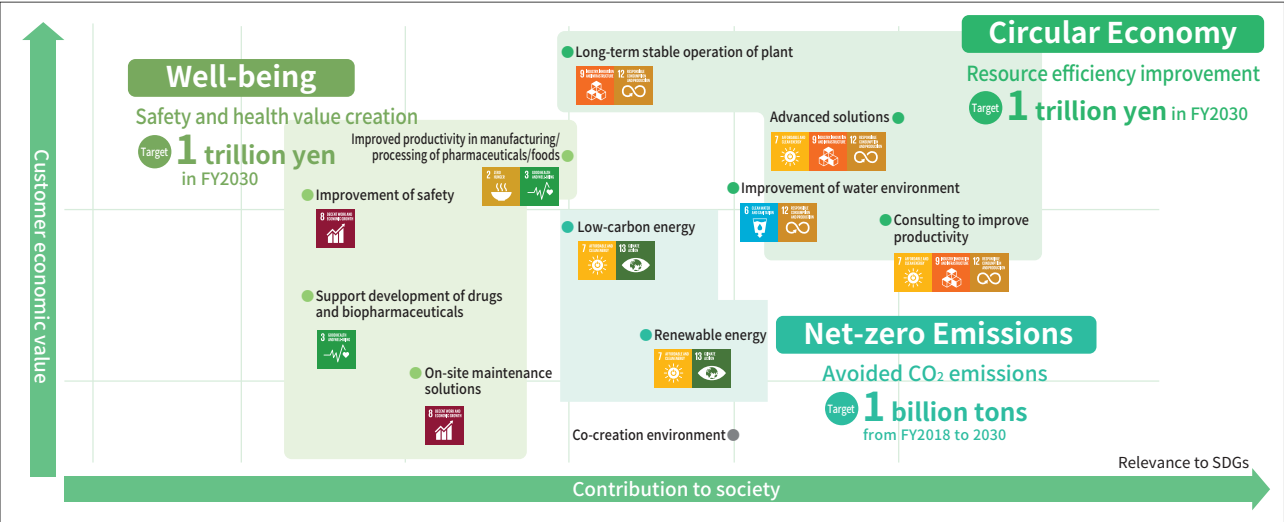
Initiatives for Achieving Sustainability Goals

To achieve the “Three goals,” Yokogawa’s sustainability goals, and thus contribute to the accomplishment of the SDGs, Yokogawa has set concrete medium-term sustainability targets to be achieved in its three business focus areas.

In the period up to 2020, for value creation themes, which are consistent with our TF2020 mid-term business plan, we will execute a PDCA (Plan-Do-Check-Action) cycle using key performance indicators (KPIs) such as the number of projects and net sales.



Business focus areas and value creation themes



Vision toward 2050 (Three goals)		Stopping climate change	Quality life for all				Circulation of resources and efficiency		
<div>Environmental</div> <div>Social</div> <div>Economic</div> <div>Achieve net-zero emissions</div> <div>Ensure well-being</div> <div>Make transition to circular economy</div>		<div>Net-zero Emissions</div>	<div>Well-being</div>				<div>Circular Economy</div>		
<div>Mid-term targets for 2030</div>		Avoided CO ₂ emissions: <div>1 billion tons</div> <div>(Cumulative from FY2018 to 2030)</div>	Safety and health value creation: <div>1 trillion yen</div> <div>(FY2030)</div>				Resource efficiency improvement: <div>1 trillion yen</div> <div>(FY2030)</div>		
Business focus areas and overview of value creation stories		<div>Renewable and low-carbon energy</div> <div>Contribute to avoid CO₂ emissions through offering of renewable energy and LNG solutions</div>	<div>Life innovation and safety</div> <div>Support people's health and prosperity through provision of life-innovation solutions assurance of safe and comfortable workplaces</div>				<div>Energy saving and resources</div> <div>Contribute to sustainability and economic growth through stable and efficient operation and resource regeneration</div>		
Value creation themes		<div>Renewable energy</div> <div>Low-carbon energy</div>	Improved productivity in manufacturing/processing of pharmaceuticals/foods	Support development of drugs and biopharmaceuticals	Improvement of safety	On-site maintenance solutions	Improvement of water environment	Advanced solutions	Long-term stable operation of plant
KPI		Avoided CO ₂ emissions (cumulative from FY2018)	Amount of productivity improvement of pharmaceuticals and food customers (compared to FY2017)	Number of provided drug discovery systems (compared to FY2017)	Number of shipped safety instrumented system controller units	Number of provided on-site maintenance solutions	Number of provided water environment improvement solutions	Amount of improvement effect proposed to customers (compared to FY2017)	Maintenance service sales amount (compared to FY2017)
Targets for FY2020		60 million tons	2 times	20 times	3,200 systems	850	190	2 times	1.3 times
FY2018 results		23.98 million tons	1.6 times	1.7 times	2,543 systems	339	144	The same level	1.1 times

■ Joined Global 100 Most Sustainable Corporations in the World Index for the First Time

For the first time, Yokogawa was included in the 2019 Global 100 Most Sustainable Corporations in the World Index, which is one of the leading sustainability indexes of the world. The Global 100 is a list of the world's most sustainable corporations selected from among approximately 7,500 large companies across the globe based on criteria such as ESG (environmental, social and governance) initiatives, diversity practices, and innovation capabilities. Eight Japanese companies, including Yokogawa, were listed in the Global 100.

● For further details, see the report by Corporate Knights (Canada): <https://www.corporateknights.com/reports/2019-global-100/2019-global-100-results-15481153/>

■ Yokogawa's Contribution to Sustainability through Business Activities

Net-zero Emissions

Stopping climate change

SDGs

7 AFFORDABLE AND CLEAN ENERGY

13 CLIMATE ACTION



Building a future city utilizing forest resources

The Shimokawa town, Hokkaido, where 88% of the total area is occupied by forest, is developing a forest-friendly community. Using energy resources derived from local forest resources, the town is pursuing initiatives to revitalize local economies and reduce CO₂ emissions. Due to its cold climate, Shimokawa has been dependent on fossil fuels, producing high levels of CO₂ emissions. Now, 70% of heating demand in its public facilities is met by boilers fueled by woody biomass, and Shimokawa is steadily shifting toward renewable energy using local natural resources. Yokogawa is supporting Shimokawa's initiatives by providing an energy management solution for district heating using woody biomass boilers.

Well-being

Quality life for all

SDGs

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

8 DECENT WORK AND ECONOMIC GROWTH



Contributing to drug R&D and life-science studies through industry-academia consortium

Yokogawa and research groups based in the University of Shizuoka established a Single Cellome* Co-innovators' Consortium jointly with several universities, research institutions, and pharmaceutical companies. In the past, Yokogawa successfully conducted single-cell mass spectrometry by developing a device capable of automatically extracting the components of a target cell with high precision while observing the cell and retaining their positional information using a confocal scanner unit. Going forward, Yokogawa will endeavor to further advance this technology/equipment by contributing to research in the life-science field with the aim of delivering safer and more effective pharmaceuticals and medical technologies to patients and the healthcare industry as quickly as possible through R&D efforts in the consortium.

*Single cellome research: research conducted to gain a comprehensive understanding of molecular information of an organism in each cell

Circular Economy

Circulation of resources and efficiency

SDGs

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Helping an industrial wastewater plant conserve energy

Yokogawa realized energy savings for an industrial wastewater treatment plant located in an industrial area in the northeastern region of China by installing its distributed control system (DCS). By using big data to determine process data characteristics of wastewater and the plant's operational characteristics and constructing models based on the data to achieve complete automation, Yokogawa realized a sophisticated control system and an optimum treatment process. In addition to achieving an energy saving of 25%, Yokogawa helped create value for the customer by realizing consistency in treatment water quality, enhanced operational efficiency, and reduced operational costs.

■ Contribution to local communities

Human resources development and job creation in Saudi Arabia

Yokogawa has signed a memorandum concerning human resources education with King Fahd University of Petroleum & Minerals and three other universities in Saudi Arabia to provide educational assistance primarily in the engineering field. Yokogawa's local subsidiary employs many engineers, including women.



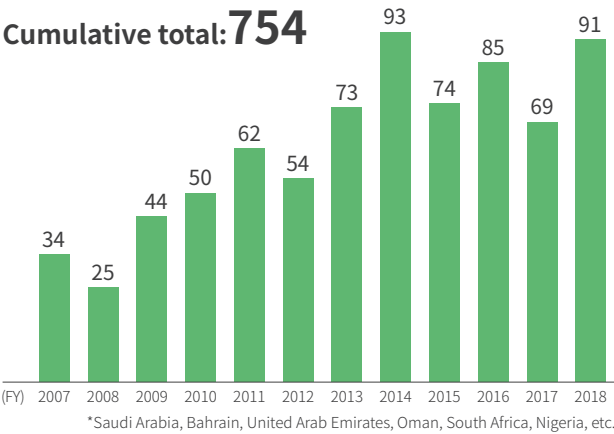
Class held at King Fahd University of Petroleum & Minerals



Engineering department of Yokogawa's local subsidiary, where many women work

Changes in the number of participants in engineering and other educational programs in the Middle East and Africa*

(unit: number of persons)



In March 2017, Japan and Saudi Arabia announced the Saudi-Japan Vision 2030, a guiding document for a new strategic partnership that will lay the foundation for the development of Saudi Arabia and Japan. In June 2019, the countries announced Saudi-Japan Vision 2030 2.0, which summarized collaborative projects which have achieved significant progress and expansion. Yokogawa's initiatives are introduced under "2. Projects, 2. Competitive Industries."

■ Yokogawa supports recommendations of the Task Force on Climate-related Financial Disclosures

Yokogawa expressed its support for recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), which was established by the Financial Stability Board (FSB) to promote the disclosure of climate-related financial information. The Yokogawa Group's expression of support for the TCFD demonstrates the

Group's determination to confront climate issues and prepare itself for the future. Going forward, we will make Group-wide efforts to evaluate business risks and opportunities arising from climate change, reflect them to our business strategies, evaluate their financial impacts, and disclose relevant information.

■ Support for the United Nations Global Compact

In 2009, Yokogawa approved and signed the United Nations Global Compact, an international initiative proposed by the United Nations, and has been endorsing and putting into practice its ten universal principles in the areas of human rights, labor, the environment, and anti-corruption. The Company is sharing these principles with its group companies and business partners worldwide.

We will continue to strive to fulfill our responsibilities as a global company that develops business worldwide.

Hitoshi Nara, President and CEO, Yokogawa Electric Corporation



Industrial Automation and Control Business

Based on the ideals set forth in its Synaptic Business Automation concept, Yokogawa helps its customers respond to dramatic changes in their business environment and achieve the transformations needed to prevail in today's highly competitive marketplace. To accomplish this, Yokogawa aims to work with its customers as a trusted partner.

The industrial automation and control business consists of three main business headquarters: Digital Enterprise Business Headquarters, IA Systems and Service Business Headquarters, and IA Products and Service Business Headquarters.

Goal

To Be the Most Trusted Partner

Business concept

Synaptic Business Automation™



- The Synaptic Business Automation concept is **all about creating sustainable value for our customers by linking everything within their organizations**. To accomplish this, Yokogawa makes use of both its business and domain knowledge and its digital automation technologies to engage in co-innovation with customers that will drive a transformation in their business processes.
- Synaptic is a **reference to the synapse, a structure in the nervous system** that plays a role in the transfer of signals throughout the body. This indicates our determination to help our customers strengthen their competitiveness by linking everything within their organizations, from knowledge, data, and systems to entire supply chains.
- Business Automation refers to a process that goes beyond simple industrial processes to include the **automation of all an enterprise's business processes**, and it seeks through their comprehensive optimization to **enhance our customers' corporate value**.

Value of Synaptic Business Automation

Based on the Synaptic Business Automation concept, Yokogawa engages with its customers to sustain the creation of value on their behalf. We work closely with them to identify issues that must be addressed to improve profitability, and co-create solutions and services based on the following three elements:

First, we aim for Resilient Operation, namely the achievement of robust operations in the presence of safety, security, and environmental risks that are a threat to business continuity. Second, we aim for optimized production to improve the reliability and productivity of

manufacturing operations and thereby optimize both TOTEX* and profitability. And third, we aim for business innovation, which aims through the facilitation of connections with our customers to create further value both for them and their customers and business partners. Through the co-creation of value, Yokogawa aims to be a trusted business partner that helps its customers improve profitability and sustain growth.

* Total expenditure throughout the business lifecycle; this is the sum of capital expenditure (CAPEX) and operating expenses (OPEX).

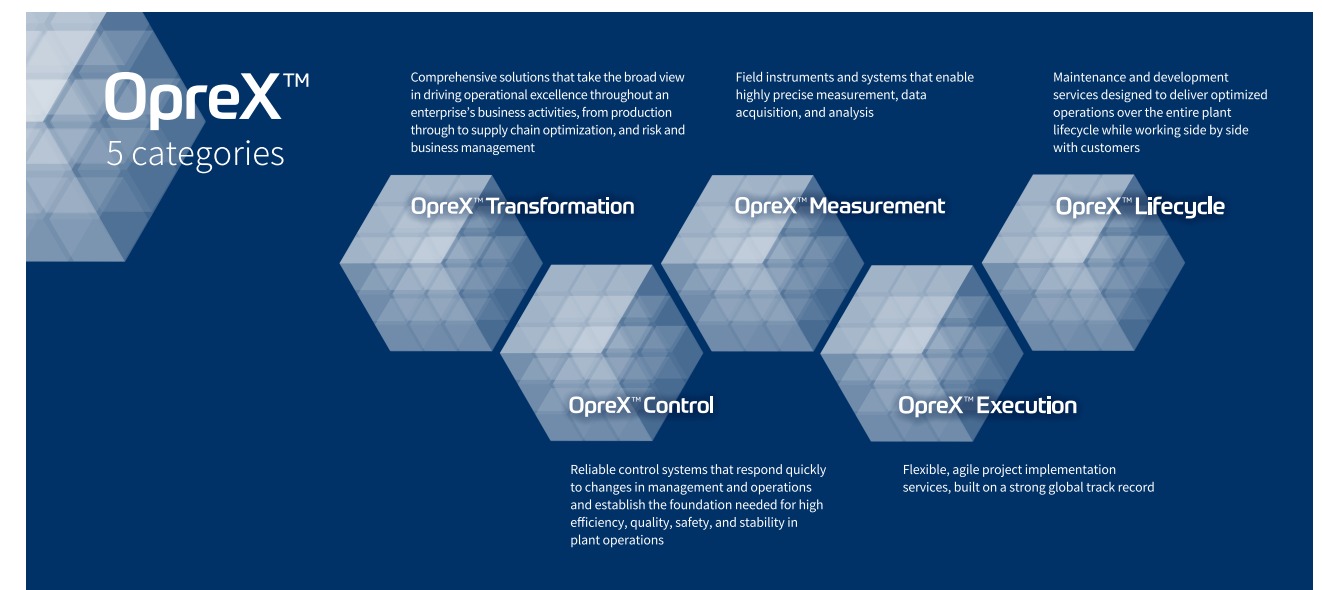
Profitable and Sustainable Growth



Comprehensive solutions, from business to operations

Based on the concept of Synaptic Business Automation, Yokogawa offers comprehensive solutions to its customers. From strategic management consulting services for improving customers' overall management practices to a broad range of automation solutions extending from the executive suite to the plant floor, Yokogawa's solutions are optimized for every phase of the plant lifecycle.

The Company will continue to enhance its industrial automation portfolio under the OpreX brand, which embodies the excellence of the technology and solutions that have been cultivated through the co-creation of value and which covers all of the Company's products, services, and solutions related to industrial automation.



Yokogawa's value proposition

Yokogawa's most important value proposition is our commitment to maximizing customer satisfaction by seeing everything through to a successful completion and keeping our word. The following four points express what makes our delivery of value unique.

Long-term partnerships based on a shared vision

Yokogawa is always ready and willing to listen to its customers and propose optimal solutions to whatever issues they may face. We take a long-term perspective based on a shared vision for the future. That is our corporate culture.

Best-in-class operating performance & robust technology, from sensor to enterprise

From sensor to enterprise, Yokogawa provides best-in-class solutions that are based on its industrial domain knowledge and robust technology. With comprehensive solutions that ensure safe and stable operations, we help our customers sustain growth and generate profits.

Sustainable support through global reach and local delivery

With its global service network, Yokogawa is able to ensure the stable and reliable delivery of support services to its customers wherever they may be, covering the entire business lifecycle and encompassing the entire value chain. We have a trusted workforce of service engineers all over the world. These are just a few of the reasons why Yokogawa has been able to achieve sustained success over the past century.

Secure system integration based on a solid track record in project management

With a proven workforce of project engineers who have successfully carried out control system projects all over the world, Yokogawa is able to deliver integrated automation solutions of all sizes and complexity levels. Since delivering the first main automation contractor (MAC) project back in 2000, we have become a leading MAC and continue to develop innovative new engineering services.

Digital Enterprise Business Headquarters

Digital Enterprise Business Headquarters was launched in April 2019 to accelerate the pace of transformation in Yokogawa's industrial automation and control business. By providing a total solution that optimizes its customers' value chain and drives collaborative value creation, the new organization helps customers optimize their businesses and maintain growth. Yokogawa also supports its customers' efforts in transforming their management processes by capitalizing on the domain knowledge, solution proposal capabilities, automation technologies, and cutting-edge digital technologies of Yokogawa and KBC.

Business outlook

Today, the business environment in which our customers operate is undergoing dramatic changes, including intensifying market competition, stakeholders' expectations for an environmentally responsible management practice, new environmental and safety regulatory requirements, and labor shortages. To better adapt to the evolving business environment, customers are aggressively pursuing initiatives to digitize their management processes and are undertaking company-wide corporate reforms. To meet our customers' latent needs such as these, we provide a total solution based on our Synaptic Business Automation concept. This approach allows us to organically connect people, systems, data, services, and supply chains, optimize operations, and help our customers realize digital transformation. By capitalizing on Yokogawa's sophisticated technologies, solution proposal capabilities, automation technologies, and cutting-edge digital technologies cultivated over many years and by bringing together our knowledge of target industries to meet our customers' needs, we will help expand Yokogawa's solutions business and achieve the targets of TF2020 plan.



Dai Yu
Director and Senior Vice President, Head of Digital
Enterprise Business Headquarters

IA Systems and Service Business Headquarters

In the area of platform products supporting the control system, the IA Systems and Service Business Headquarters is focusing on initiatives aimed at enhancing the availability, efficiency, and utilization of the system as a whole to help our customers realize Synaptic Business Automation. New product releases include a server integration solution developed based on PC virtualization technology, a redundancy solution, and a compact field enclosure enabling the distribution of field instruments.

Business outlook

In fiscal year 2018, we had an increase in sales due to signs of bottoming out in the energy industry mainly in the oil and gas sectors, despite the impact of yen appreciation against emerging-market currencies. The expansion of high value-added businesses in the OPEX field is a key strategy identified in TF2020 plan. In this regard, the Japanese market release of our Digital Plant Operation Intelligence, a quality stabilization solution designed to enhance customers' production quality, received overwhelming response. We are also undertaking unprecedented initiatives that lead directly to solutions of issues facing our customers, such as by starting to offer them Profit-driven Operation, a solution made possible by integrating KBC's domain knowledge and Yokogawa's control know-how through digital transformation (DX).

In fiscal year 2019, we can expect a further growth in orders as a result of the recovery in investment particularly among major oil companies and oil and gas producing countries. We will take advantage of this opportunity to not only win new facility construction projects (CAPEX) but also expand our high value-added operation and maintenance businesses for existing plants (OPEX). Meanwhile, tough price competition continues in the CAPEX business environment. We will strive to further enhance our profit levels by streamlining project execution. This will be achieved by means such as remote project execution, which is made possible through digital transformation (DX), and modularization, which is aimed at reusing engineering elements.



Shigeyoshi Uehara
Vice President, Head of IA Systems and Service Business
Headquarters

IA Products and Service Business Headquarters

The IA Products and Service Business Headquarters is contributing to resolving social and environmental issues as well as challenges facing the industry by delivering products that support the foundation of digital transformation. We will further strengthen our organizational collaboration with related businesses, providing products that help address issues facing our customers and enhance their value, while seeking to further expand our business opportunities. In addition, we will endeavor to expand the portfolio of products that help resolve social issues such as SDGs, which are common global challenges.

Business outlook

While some products were impacted by the conditions of semiconductor markets in fiscal year 2018, orders and sales increased in the business as a whole due to a steady increase in orders for field instruments and analyzers, our core products, and a strong market for on-board battery components. By region, businesses related to core products grew overall, particularly in China.

In fiscal year 2019, we will continue to strengthen our efforts to expand product businesses while pursuing initiatives consistent with strategies of TF2020 plan. As we shift our product concept from traditional "sensing" to "sensemaking," we will focus on initiatives to integrate unique digitalization solutions into sensors used in field instruments by capitalizing on our proprietary technologies and to provide such new sensors to our customers. We will then help our customers further maximize their value by creating new added value through collaboration with other related businesses.

Further, we will work to expand our lineup of products that help resolve social issues including SDGs. While continuing to strengthen our businesses that target the growing on-board battery market, we will contribute to the realization of a sustainable society by launching analyzers and other instruments for environmental measurement and efficient combustion.



Kenji Hasegawa
Vice President, Head of IA Products and Service Business
Headquarters



Probe type Tunable Diode Laser
Spectrometer TDLS8100



Multi Channel 4-wire Liquid Analyzer
FLXA402

Topics

Workshop on the industrial automation and control business held at Yokogawa's six key locations

We reviewed the direction of transformations to be achieved in the industrial automation and control business as identified in the Transformation 2020 mid-term business plan, and developed a common understanding of the direction of our strategies including Synaptic Business Automation, a business concept developed for the industrial automation and control business. We then discussed solutions, initiatives, and challenges based on the directions identified. The workshops were attended by members of Yokogawa Solution Service Corporation, a pioneer in the total solution service business, as well as members of KBC Advanced Technologies Limited, which has a highly specialized consulting practice.



Yokogawa recognized with Frost & Sullivan Global Customer Value Leadership Award in the integrated performance management field

Yokogawa has received the 2019 Global Customer Value Leadership Award in the integrated performance management field from Frost & Sullivan*, an international market research and consulting firm. The solution for which Yokogawa received the award integrates its DCS technologies and KBC's domain knowledge and is an innovative initiative that helps customers realize digital transformation.

* Frost & Sullivan is an international market research and consulting firm. As well as contracted research, information gathering, and consultation, it also conducts proprietary market research and technological analysis. Based in California, Frost & Sullivan has research and sales offices at over 40 sites around the world.

Life Innovation Business

Focus on Well-being

With the broad aim of ensuring well-being that is one of Yokogawa's three sustainability goals, and in accordance with its TF2020 mid-term business plan, Yokogawa launched a life innovation business in fiscal year 2018 and has been active in the field since.



Hiroshi Nakao
Vice President
Head of Life Innovation
Business Headquarters

Establishment of the life innovation business

Amid issues such as global population growth and aging populations not only in the developed world but also in certain emerging countries, the pharmaceuticals and food industries are playing increasingly crucial roles in ensuring quality of life. At the same time, the market environment is undergoing changes, including the wider adoption of biotechnologies as a result of progress in genome and digital technologies and changing attitudes toward health, food, and medicine.

Focusing on pharmaceuticals and food industries, where Yokogawa can leverage its strengths, we aim to establish a service business that enhances the productivity of the entire value chain from research and development to production and logistics.

Core Solutions

Live cell imaging

Yokogawa supports state-of-the-art research around the world by equipping developers and researchers working in the pharmaceuticals and food fields with confocal scanner units that enable 3D observation of components of cells, as well as high-content screening systems capable of automatically conducting an experiment to evaluate cultured cells.

The CSU-W1 SoRa, a super-resolution confocal scanner unit released in August 2018, was developed by equipping the previous CSU-W1 series with a super-resolution feature. The CSU-W1 SoRa allows users to switch between confocal observation and super-resolution observation while imaging. CSU-W1 SoRa is used to capture images of cells cultured by MAHOL, a robot system for automating lab work developed by the Artificial Intelligence Research Center (AIRC) of the National Institute of Advanced Industrial Science and Technology (AIST).

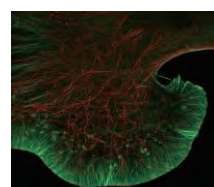


Image courtesy of: Dr. Kaoru Kato, National Institute of Advanced Industrial Science and Technology (AIST)

Solutions for cell-based manufacturing

In recent years, pharmaceutical companies have focused on the research and development of biological products such as antibodies and protein drugs made from living cells, in addition to conventional drugs produced by chemical synthesis.

Yokogawa is developing products that enable the stable and efficient operation of the cell culture process. The conventional culture process is operated while monitoring the environment where cell cultures are prepared, including the pH level and oxygen concentration of the culture medium. The monitoring technology Yokogawa is currently developing based on its predictive control technology cultivated over the years is capable of predicting changes in cell conditions resulting from cell proliferation, so that nutrients can be provided whenever necessary to keep the culture environment in optimum condition.

Yokogawa aims to contribute to enhance the production efficiency of the cell culture process by capitalizing on its advanced measurement and predictive control technologies.



Biological Contamination Management

Yokogawa is working to develop products capable of quickly identifying microbial contamination by conducting genetic biological testing. This method shortens the amount of time required to test microbial contamination, helping food (beverage) and pharmaceutical product users reduce operational costs and waste.



NKS Corporation

In December 2018, NKS Corporation ("NKS") joined the Yokogawa Group.

NKS specializes in the validation of facilities for pharmaceuticals, food, and cosmetic industries and the calibration of measuring instruments, with a proven track record in providing services to more than 7,000 sites. With its goal of realizing a productivity revolution throughout customers' entire value chains, Yokogawa aims to provide solutions in a broad range of fields by combining its capabilities with NKS's technologies and know-how.

Test and Measurement Business / Aviation and Other Businesses

Test and measurement business

- Generate healthy profits by focusing on competitive products
- Enter new growth markets

Aviation and other businesses

- Leverage proprietary technologies and our customer base to improve profitability



Masaharu Yamazaki
Senior Vice President
Head of Aerospace Products Business
Headquarters
President, Yokogawa Test & Measurement Corporation

Test and Measurement Business

Positioning fiscal year 2018—the first and important year of the new TF2020 mid-term business plan—as the first year of a shift toward a growth trajectory for the measurement business, we began to strive for discontinuous growth (expansion of business scope and geographical areas) over the next 10 years, while further strengthening existing businesses and maintaining a sound financial footing. As part of our effort to strengthen existing businesses, we expanded our market share by releasing the WT5000 precision power analyzer which has a world-class measurement accuracy of $\pm 0.03\%$ and the DLM3000, a premium-quality, compact oscilloscope series. Regarding the expansion of business scope, we targeted markets such as electric vehicles, connected cars and 5G mobile communication systems that are centers for innovation, and are proceeding smoothly with proposals for integrated solutions that make use of new measurement technology,

software and peripheral equipment while keeping an eye out for opportunities to collaborate and partner with other companies. As for geographic expansion, we focused on India, in view of its potential for growth, and reinforced our sales organization there.

In fiscal year 2019, we will not only further accelerate our activities but also endeavor to expand our pressure instrument business in expanding our business scope. While we released a pressure sensor with a range extended up to 70MPa in fiscal year 2018, we will focus on benchtop measurement instruments and endeavor to expand our business with a view to offering pressure calibrators for laboratory in fiscal year 2019. In expanding our geographical areas, while strengthening our sales organization in India, we will reinforce our efforts in Southeast Asia and direct our attention to South America, which has strong growth potential.



Aviation and Other Businesses

In fiscal year 2018, despite commercial aviation business remained firm, orders, net sales and operating income were down from the previous year due in part to the impact of the transfer of Yokogawa Denshikiki Co., Ltd., which mainly engaged in the marine navigation equipment business.

While the business environment for the aviation business targeting government offices remains challenging, net sales of commercial aviation business continue to grow year after year. As we focus our resources on the aircraft-related business following this transfer of the subsidiary, in fiscal year 2019, we will develop and expand sales of next-generation products with high customer needs while capitalizing on our proprietary advanced technologies. Further, we will endeavor to strengthen our business foundations and restore our profitability to a sound level with the aim of enhancing corporate value.

In the aviation business, safety comes first. High reliability is essential in the flat-panel displays that are used in cockpits and other types of navigation systems. For its customers in the airline and aircraft manufacturing industries, Yokogawa will supply the state-of-the-art technology needed to ensure the safe transportation of passengers and cargo.



Key Themes for Co-Creation of Value

— Innovation —

Research and Development (R&D)

R&D activities at Yokogawa are classified into two types. Firstly, product development and advanced research activities are geared to meeting customer needs and target a relatively foreseeable future. Secondly, innovation activities are conducted from a longer-term perspective, involve greater uncertainty, and are directed toward the identification and generation of new business opportunities. Whereas business headquarters are mainly responsible for the former, the latter is primarily the task of the Innovation Center.

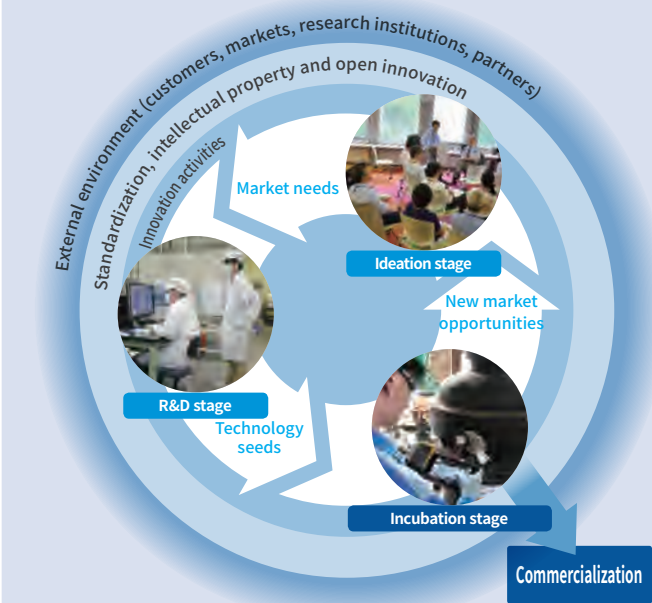
- The mission of the Innovation Center is twofold:
- 1. Research and develop new technologies that complement those of each business headquarters and address customer issues, leading to expansion of the business scope.
 - 2. Prepare for an uncertain and unpredictable future and open a path to the creation of new businesses by working with customers to uncover latent issues and find ways of addressing them.

R&D structure at Yokogawa



Innovation Activities

By engaging in innovation activities, Yokogawa not only provides systems but also creates technologies and solutions together with customers that prompt them to change their perspectives and approaches. The innovation process consists of three concentric layers as shown in the figure below. The outermost layer, consisting of information from the field and signs of change obtained by scanning the external environment, such as markets and customers, is reflected in standardization, intellectual property and open innovation, which constitute the second layer that supports innovation activities, the innermost layer. In innovation activities, we generate ideas, refine them through R&D and incubate them. Repeated execution of these three stages leads to commercialization.



- 1 Ideation stage**
We acquire insights into the future through the use of methodologies such as scenario planning and scanning. Based on scenarios that assume shortages of food, energy, and water will occur in the near future, the Innovation Center has elected to focus on biology, energy, and materials, and is coming up with ideas for activities that can be carried out in these fields.
- 2 R&D stage**
We identify and then refine promising research themes from the various possibilities that emerge at the ideation stage. At this stage, researchers whose duties normally focus on the R&D of new technologies also examine the feasibility of the identified research themes, analyze markets, and, if necessary, engage in cultivation of markets.
- 3 Incubation stage**
When an R&D project reaches an advanced stage and the goal comes into sight, the incubation stage starts. At the incubation stage, researchers develop a strategy with support from sales and marketing operations for commercialization. Then, a demonstration is conducted in collaboration with the customer to ascertain whether the developed solution offers value. If it does, the project proceeds to the commercialization stage.

Introduction of Innovation Activities for Commercialization

Case Sensing Technology

Yokogawa is developing a high-sensitivity, high-speed molecular spectroscopy technology capable of detecting small changes in condition caused by molecular interactions, with the aim of realizing indicators and their numerical expressions that offer new value to our customers in fields such as medicine, food production, and life science. For example, the absorption (effectiveness) of lycopene contained in tomatoes depends on how well it blends with oil at the molecular level. It is essential that a sensing technology is capable of not only identifying components and their respective content levels but also objectively demonstrating the interactions between substances (molecules) that generate functions and benefits. Yokogawa's technology brings together the high-sensitivity, high-speed, and non-destructive characteristics of measurement instruments and is expected to contribute to many industries with potential for growth. Applications include minimally invasive medical testing such as blood tests for cancer screening and DNA testing, as well as visualization of chemical reaction processes in peptide pharmaceuticals. The Company is challenging itself to develop a sensing technology with a measuring capability for non-physical quantities including functions and benefits, which have been difficult to express numerically until now.

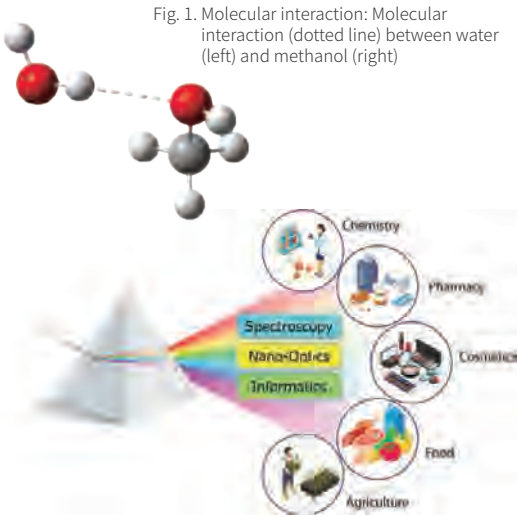


Fig. 1. Molecular interaction: Molecular interaction (dotted line) between water (left) and methanol (right)
Fig. 2. Expanding our horizons through molecular interaction analysis: Yokogawa's technology offers an objective measure of functions and benefits in spectroscopic analysis, nano-optics, and infomatics.

Activities Supporting the Innovation Process

Intellectual Property

Yokogawa positions intellectual property as an essential asset for maintaining the high value of its products and solution services and providing value to all customers. Based on this, we have developed an intellectual property strategy in linked to our business strategies and R&D activities. Yokogawa will acquire rights for and use intellectual properties created at the Company in accordance with the above-mentioned intellectual property strategy. In the context of these activities, Yokogawa positions intellectual property rights not only as legal rights but also as marketable assets. The Company will continue to provide unique and unrivaled products and solution services.

Yokogawa's intellectual property rights							(as of March 31, 2019)
	In Japan			Outside Japan			Total
	Registered	Pending	Subtotal	Registered	Pending	Subtotal	
Patents	1,939	430	2,369	1,111	669	1,780	4,149
Designs	111	22	133	158	91	249	382
Trademarks	339	6	345	722	335	1,057	1,402
Total	2,389	458	2,847	1,991	1,095	3,086	5,933

Open Innovation

Yokogawa is vigorously promoting open innovation, the use of external seeds and resources (e.g., advanced technologies, know-how, human resources), and collaboration with other parties for innovation. Instead of relying solely on our own technologies, we are working to deliver superior value to our customers by forming strategic relationships and collaborating with partners all over the world, including universities, research institutes, and start-ups.

Standardization

International standards have an important bearing on our business strategy since they have an impact on whether a product or solution service will be able to establish dominance at the global level. International standards are also an important part of the research and development strategy since they determine whether the technology in which the Company has made prior investment will find support in the market. Yokogawa actively engages in international standardization activities as members of many international standardization organizations such as IEC and ISO in a broad range of fields while linking its activities with the Company's R&D and intellectual property strategies. Due to their inherent nature, however, international standards may conflict with intellectual property and lead to patent disputes. Yokogawa puts priority on enhancing value for its customers and focuses on international standards that set forth requirements on interoperability in telecommunication technologies and software. The Company's policy is to disclose its intellectual property if needed or issue a license through a licensing agreement.

Human Resources Management

Human Resources Management

A diverse workforce is an indispensable resource and a key driver for Yokogawa's growth and creation of value. To achieve the targets of the Transformation 2020 mid-term business plan, whose overall goal is the creation of new value through co-innovation with our customers, Yokogawa is pursuing a human resources strategy that is focused on transformation through the strengthening of human resources, promotion of diversity and inclusion, and management of health and productivity. Moreover, to be a good partner, a good corporate citizen, a going concern, a good brand, and a good employer, we will work to establish a productive, healthy, and rewarding work environment throughout the Yokogawa Group.

Transformation through the strengthening of human resources:
Creating a corporate culture in which the Company and its employees continue to grow together

Yokogawa University is established to realize a "Learning Company"

With the goal of ensuring Yokogawa can continue to create greater value for our customers and society in a fast-changing world, in October 2018 we established Yokogawa University, an in-house institution, to provide our employees an environment to learn and increase the level of expertise and skills in a broad range of areas. E-learning is the primary method of training to give our employees around the globe an equal opportunity to learn without any limitations from time or locations. Also, we are developing instructors at each region who can deliver the trainings at all our locations. By offering employees opportunities to take up new challenges and supporting motivated employees to learn while cultivating a corporate culture where employees can learn from each other ("Learning Company"), Yokogawa aims to transform itself into an enterprise that is able to achieve sustained growth through employee growth and development.

Expanding the program content with a focus on business contribution

Programs offered at Yokogawa University are divided into three major themes: Business literacy, which is a set of basic skills in leadership, finance, and other areas expected of a professional; themes based on functional areas of business such as sales and services needed to transform existing businesses and to impart knowledge; and themes based on new technologies and other resources needed to create new businesses and transform business models. External e-learning resources have also been incorporated to expand the programs. A cross-departmental steering committee plays a central role in preparing each program while keeping in mind how an employee will be able to contribute to the Company's business by taking the program. While the University started with some 120 programs when it opened in October 2018, the number of programs were increased to about 680 by the end of March 2019, with more on the way. Employees will apply what they learned from the programs to work and generate more value, so as to realize growth for the Company.

Establishment of a global talent management system

In its effort to achieve sustained growth and enhance its corporate value over the mid to long term, Yokogawa has placed cultivating leaders capable of guiding the Company to global success among its top management

priorities. In fiscal year 2018, Yokogawa launched a committee dedicated to systematically discovering and cultivating future leaders who will shoulder the management of the Company. Yokogawa will make group-wide efforts to strengthen its human resources by assigning personnel and cultivate talents strategically to drive sustainable corporate management.

Promotion of diversity and inclusion

Yokogawa will actively hire, develop, and promote people from a variety of backgrounds who differ in terms of experience, knowledge, sensibility, perspective, cultural background, and values, and in so doing will not discriminate based on ethnicity, nationality, gender, religion, age, social position, or disability. By utilizing digital technology and cultivating a safe working environment, we make it possible for every employee to demonstrate his or her full potential and to work comfortably, with a flexible workstyle. Good communication and constructive collaboration based on mutual respect facilitates the co-creation of new value. Companies throughout the Yokogawa Group are collaborating in the promotion of various diversity and inclusion initiatives, and this includes the monitoring of progress and sharing of information.

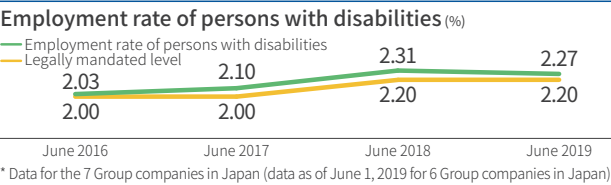
Management of health and productivity

The individual circumstances and priorities of our employees may change over time as they pass through different life phases. Yokogawa provides a comfortable working environment including a friendly and safe workspace for all employees tailored to their evolving circumstances, so that they can continue to perform to the best of their abilities in their optimum physical and mental conditions. We look after the well-being of everyone in the Yokogawa family by promoting good physical and mental health and seeking to ensure that they stay motivated and content.

Following the adoption of a health declaration in 2016, Yokogawa was recognized as an Outstanding Health and Productivity Management Organization and designated a "White 500" company for three consecutive years since 2017. Yokogawa Solution Service Corporation, a Group company, was also recognized as a White 500 enterprise in 2018. Going forward, Yokogawa will position health and productivity management as a key element of its management practices and seek to expand the scope of its initiatives to include other companies within the Group.

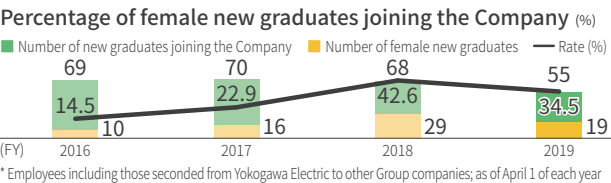
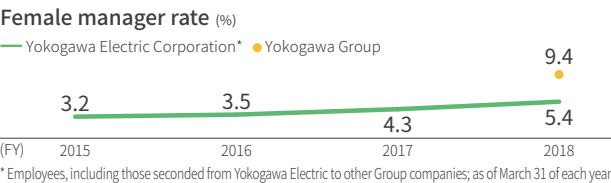
Promoting the active participation of persons with disabilities

Yokogawa has been actively hiring persons with disabilities since 1992, and such individuals have been working in various capacities within the Company, in functions such as engineering, manufacturing, sales, and administration. As of June 1, 2019, the employment rate of persons with disabilities at Group companies in Japan was 2.27%. Yokogawa will continue to make vigorous efforts in this area by such means as holding briefings for Group companies in cooperation with labor affairs-related institutions and will remain active in hiring persons with disabilities and encouraging their active participation in the workforce.



Promoting the success of women

In April 2015 Yokogawa established a work section that is dedicated to the promotion of diversity, and this unit is actively helping employees achieve success in their jobs by means such as formulating career development plans for each female leader candidate. Moreover, we conduct career development training for female employees as well as seminars to raise awareness among managers concerning the need to empower women. Yokogawa is pursuing its goal of achieving the female manager rate of 7% (non-consolidated) and 12% (global) by fiscal year 2020. In recruitment activities, our target rate for female employees is 30% or more, with the long-term aim of optimizing Yokogawa's workforce gender composition. Women made up 34.5% of the new graduates joining the Company in 2019.



Medium-term sustainability targets

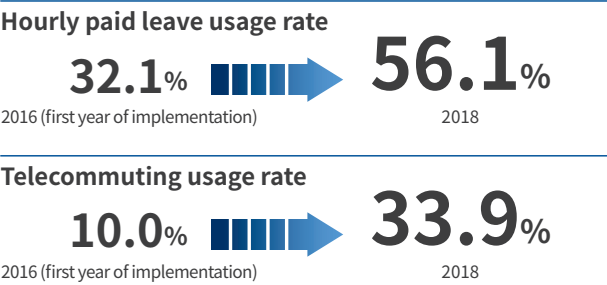
Contribution through the Group's foundation				2018 Review
SDGs	Value creation themes	KPIs	Goals	FY18 Results
	Diversity and inclusion	Female ratio out of total number of managers	12%* (FY2020) *Global	9.4%
		Disability employment rate (Group companies in Japan)	2.3% (FY2020)	2.27% (As of June 1, 2019)
	Talent attraction and engagement	Engagement survey score	Implementation of measures to improve employee engagement	— (Planned Jan-Mar 2020)

Work-style reform

We are carrying out various measures to foster a supportive work environment that allows all members of our diverse workforce to challenge themselves and develop their careers. The establishment of Yokogawa University is one such important measure. At the same time, we are undertaking workstyle reforms that will enhance our co-creation of value by improving productivity, motivating employees, and encouraging personal growth.

To give our employees greater flexibility by minimizing constraints on when and where they work, Yokogawa introduced a flex-time option without core time, an hourly paid leave, and telecommuting systems, and is cultivating a change in mindset that is conducive to the use of these systems. Nursing leave and sick / injured child care leave can be taken on an hourly basis, and the first five days of parental leave are paid. In this and other ways, Yokogawa is helping employees maintain a good work-life balance.

We are also promoting new work practices such as enhancement of our Web conferencing tools by incorporating digital technology as well as introduction of robotic process automation (RPA) and other means to improve operational efficiency. Furthermore, by creating a flexible workspace (a "collaboration area" that encourages employees to work together, a "relaxation area" conducive to new ideas and innovation, and a "focus area" where employees work on their individual tasks), Yokogawa realizes an efficient and comfortable workspace where employees are free to choose where they want to work depending on their circumstances.



— Quality Management / Occupational Health and Safety —

Quality First

Ever since the foundation of the Company, putting quality first has been the fundamental principle of Yokogawa. Thorough customer-focused quality management has fueled Yokogawa’s development. Guided by the quality-first principle, the Yokogawa Group autonomously

implements quality management to ensure uniform quality worldwide responding to changing social demands. Offering products and solutions that achieve customer satisfaction, the Yokogawa Group is making a concerted effort to reinforce the image of Yokogawa brand.

Customer Satisfaction and Quality

The Yokogawa Group’s quality management consists of three basic elements: Quality Assurance (QA), Quality Improvement (QI), and Quality mind (Qm). We believe that we can satisfy our customers’ expectations and build long-lasting bonds of trust only when all of these elements are engaged. The Quality First mindset is critically important for maintaining the high quality of Yokogawa products and services. All employees of the Group recognize the importance of having the Quality First mindset and quality is built into every business process in accordance with the rules and approaches shared throughout the Group.



Occupational Health and Safety

Yokogawa shall, in recognition that good Occupational Health and Safety (OHS) management is essential for the group, autonomously strive to promote the health and safety of its personnel, create and maintain a suitable working environment. The Yokogawa Group implements the Occupational Health and Safety Management System (OHSMS) to promote continual improvements of

occupational health and safety activity level and to reduce and eliminate occupational accidents. Through initiatives to reduce and eliminate potential OHS risks based on OHS risk inventory and evaluation and periodic review of these initiatives by internal audit of Group companies, we are working to enhance the Group’s quality of occupational health and safety step by step.

Initiatives for reduction and elimination of occupational accidents

The Yokogawa Group aims to reduce and eliminate occupational accidents by integrating conventional activities, such as health and safety inspections and use of information on near misses, with occupational health and safety risk

control initiatives. The data on occupational accidents in the Group are aggregated and analyzed quarterly and the lessons learned are shared throughout the Group to prevent recurrence of the same or similar accidents.

Yokogawa Safety Handbook

Yokogawa issued the “Yokogawa Safety Handbook” as part of its effort to achieve its medium-term sustainability targets (reduction of occupational accidents). This guidebook, common to the Group, can be used by all employees working in the Group as reference to ensure safety and safe behavior. The guidebook consists of nine basic safety rules and three important practices pertaining to occupational health and safety. The nine basic safety rules focus on reducing risks of occupational accidents. The three important practices can contribute to a safe work environment.



Medium-term Sustainability Targets

Occupational Health and Safety

Contribution through the Group’s foundation				2018 Review
SDG	Value creation theme	KPI	Goal	FY2018 Result
	Elimination of occupational accidents	Total Reportable Incidents (with lost days) Frequency Rate	Reduction	0.28 incidents/ 1 million hours

— Environmental Management —

Contributions toward a Sustainable Global Environment

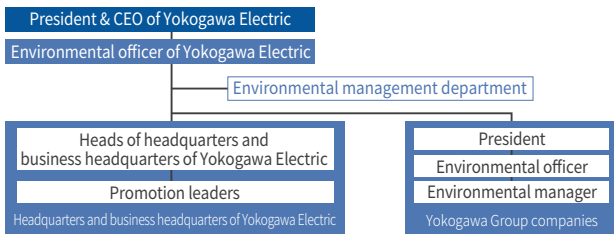
At Yokogawa, we take seriously our responsibility to protect the global environment and, recognizing our responsibility to future generations, practice environmental management from a medium- to long-term perspective. We promote efficient use of resources and significant reductions in greenhouse gas emissions together with our customers and actively work to develop environmentally friendly products and further reduce environmental impacts of the Yokogawa Group’s business operations.



Environmental management promotion structure

Group companies have set environmental targets based on the Yokogawa Group Environmental Policy and are conducting environmental activities closely linked with business activities. In order to promote global environmental management, under the supervision of Yokogawa Electric headquarters, Group companies consider measures and review activities in cooperation with environmental managers of regional headquarters. The Group’s major offices and manufacturing sites around the world are ISO 14001 certified.

Environmental Management Promotion Structure



Efforts to reduce our environmental impact

The Yokogawa Group is promoting measures to save energy and for conversion to renewable energy sources to reduce the Group’s greenhouse gas emissions.

Also, Yokogawa is working to effectively utilize limited water resources, particularly in Asia and the Middle East, where water shortages are pronounced.

Design for environmentally friendly products

Yokogawa has set design and assessment standards for the development and manufacture of environmentally friendly products. At each phase of product design, namely, initial design, intermediate design, and final design, assessment is performed based on standards including energy saving, resource saving, and safety. In addition, we use lifecycle assessment (LCA) standards to evaluate energy consumption and CO₂, NO_x, and SO_x emissions at each stage throughout the product

lifecycle, from materials and parts production to assembly, distribution, use, and disposal, and make the results publicly available. Products that have cleared these standards are considered to be highly environmentally friendly, and help our customers reduce their environmental impact.



*The LCA logo is displayed on the website for applicable products.

Medium-term Sustainability Targets

Environment

Contribution through the Group’s foundation				2018 Review
SDGs	Value creation themes	KPIs	Goals	FY2018 Results
	Promotion of efficient use of water resources	Water usage	Promote measures for water usage efficiency	Water consumption amount: 561 km ³
	Reduction of energy consumption	Energy consumption amount (compared to FY2013)	13% reduction (by FY2020) 18% reduction (by FY2030)	11.1% reduction Energy consumption amount: 1,538,983GJ
	Reduction of greenhouse gas emissions	Greenhouse gas emissions (compared to FY2013)	20% reduction (by FY2020) 34% reduction (by FY2030)	18.9% reduction Greenhouse gas emissions: 83,886t-CO ₂ e



Takashi Nishijima
Chairman

Hitoshi Nara
President and CEO

Special
Feature

Appointment of New President and CEO

We interviewed Chairman Nishijima on this topic as he served last fiscal year as chairperson of the Nomination Advisory Committee.

Q
What approach was taken with the appointment of the new president and CEO?

A In 2014 Yokogawa established the Nomination and Compensation Committee, the majority of whose members were independent outside directors, as a voluntary advisory body for the Board of Directors. In 2015 we established the Nomination Advisory Committee and the Compensation Advisory Committee to make corporate governance more objective and transparent and to take greater advantage of the perspectives of outside directors in management. The Nomination Advisory Committee formulated and has been implementing a leadership training and evaluation program that is dedicated to selecting and training individuals to serve as president and in other executive roles. Through this program we clarified what attributes and qualities were expected of these executives. We selected several candidates and had them attend workshops and participate in challenging projects for training purposes. Based on the results of this training and evaluation, the five members of the Committee—namely four outside directors and myself—engaged in a series of discussions regarding who should be nominated as the next president and when that leadership change should take place, and reached the consensus that Mr. Nara would be appointed as the next president at the beginning of fiscal year 2019. The Committee subsequently reported on their deliberations to the Board of Directors and Mr. Nara was officially appointed.

Q
Why was a new president and CEO appointed?

A To further accelerate the pace of reforms at Yokogawa. The business environment surrounding Yokogawa is undergoing dramatic change, and this is due in part to digital technology innovation and the advancement of globalization. In this fast-changing

world with complex, interacting events, it is becoming increasingly difficult to make accurate predictions. Under these circumstances, the Company must try to anticipate changes and cultivate a mindset that emphasizes responding quickly and flexibly to new challenges. We need to be highly sensitive to changing circumstances and instigate changes before we are overtaken by events. As president I personally made some changes and actively took up new challenges. However, in order to further accelerate the transformations that Yokogawa has set out to achieve, we need new perspectives to look at things from different angles, and the ability to quickly and agilely take on challenges without being tied down by precedents. To accomplish this, and to begin tackling reforms, we felt it would be greatly beneficial to pass on the baton to a new president.

Q
Fiscal year 2019 is the interim year of Transformation 2020 (TF2020), the Company's mid-term business plan. Why the new appointment now?

A The Nomination Advisory Committee held many discussions on the timing of the nomination. Some may have wondered why the new appointment was announced now, just as TF2020 enters its second, and crucial, year. From a slightly longer-term perspective, we can think of fiscal year 2019 not just as an important year for both achieving the fiscal year plan and accelerating the transformations under TF2020, but also as a year in which we will start preparing the next mid-term business plan (for the period commencing in fiscal year 2021) and shift our activities into high gear as we head into fiscal year 2020. Formulating a mid-term business plan is exactly the kind of work the president should lead, so we believed fiscal year 2019 was the best time for this leadership change. I of course have continued to be responsible for the results of the TF2020 initiatives and am working with Mr. Nara, the new president and CEO, to implement reforms.

Q
How would you describe Mr. Nara, who was appointed as new president and CEO?

A Not only does Mr. Nara have the attributes and qualities identified in the leadership training and evaluation program and meet the requirements concerning nomination standards, he is also a very upbeat and positive person and is capable of tackling new challenges without being bogged down by precedents. Having built a successful career at the forefront of sales operations and consistently taking a hands-on approach by working closely with customers, Mr. Nara has earned the trust of many customers. Mr. Nara is best qualified to be the leader of Yokogawa, which seeks to be a trusted partner capable of pursuing co-innovation with customers and partners and working with customers to identify and address issues they are unaware of. He is also good at tapping into other people's talents. He listens to people carefully while openly communicating his views and excels at involving others and promoting good teamwork to accomplish goals. He also has experience serving as president of a local subsidiary in an emerging market. As such, he is well suited to be Yokogawa's new president and CEO, in which positions he will press forward with transformations and pave the way for a new era.



We interviewed Mr. Nara, the new president and CEO.



Q
What goals do you hope to accomplish as the new president and CEO?

A With respect to management, the number one goal is to balance the value that Yokogawa contributes to society with the economic value that it generates to achieve sustainable growth and maximize our corporate value.

The future course of world events is uncertain, and we are in an era of rapid and discontinuous change. It is important to anticipate change and speedily make decisions on what to do. With the goal of realizing robust earnings regardless of what is happening in the market, we will accelerate the pace of our transformations to achieve growth and

improve efficiency. We will endeavor to be a trusted partner who can help our customers achieve breakthroughs in productivity. Based on our digital transformation and the industry knowledge and experience that we have acquired over the years, we will leverage our capability to propose comprehensive solutions, including consulting services, and will accelerate the value creation process and work with our customers to address the issues that they face. Further, we will work to capitalize on the diversity of our workforce while holding true to the corporate culture and values that Yokogawa has cultivated over the past 100 plus years. And to contribute to the realization of a sustainable society, we will aim to create growth opportunities and consolidate the foundation for growth, two goals of the TF2020 plan.

Profile of Hitoshi Nara

Born on January 23, 1963 in Akita Prefecture, and graduated from Rikkyo University School of Law in 1985.

Inspired by Yokogawa's support for a variety of industries and its contributions to society, Mr. Nara joined Yokogawa in 1985.

During his first three years after joining the Company, Mr. Nara gained a broad range of experience working as a service engineer in the sales department. Subsequently he gained experience in the preparation of price quotes for industrial instruments and control systems, engineering, and measuring instrument sales targeting research institutions, and then moved on to handle sales to customers mainly in the chemical industry. As these customers began to expand their operations outside Japan, he was assigned to Yokogawa Engineering Asia and Yokogawa (Thailand) and gained experience in management. Following his return to Japan, he assumed responsibility for petrochemical, chemical, and plant sales in Japan as head of Sales Division I in the Industrial Solutions Business Headquarters. In 2013, as president of Yokogawa Solution Service Corporation, he led the launch of our solution service business. In fiscal year 2018, as head of the Life Innovation Business Headquarters, he was tasked with establishing a service business that delivers enhanced productivity throughout the value chain.

Apr. 1985	Joined the Company	Apr. 2013	Director of the Company, President of Yokogawa Solution Service Corporation
Oct. 2001	Vice President of Yokogawa Engineering Asia Pte. Ltd.	Apr. 2017	Director and Executive Vice President of the Company, Chief Executive for Japan and Korea, President and CEO of Yokogawa Solution Service Corporation
Oct. 2003	President of Yokogawa (Thailand) Ltd.	Apr. 2018	Director and Executive Vice President of the Company, Head of Life Innovation Business Headquarters
Jan. 2007	Head of Sales Division I, Industrial Solutions Business Headquarters of the Company	Apr. 2019	President and CEO
Apr. 2010	Senior Vice President, Head of Industrial Solutions Business Headquarters		
Jun. 2011	Director and Senior Vice President, Head of Industrial Solutions Business Headquarters		

— Message from the Chairman of the Board —



Enhancing Yokogawa's Corporate Value in the Age of Transformation

Noritaka Uji
Outside Director
Chairman of the Board

Outside directors are corporate managers who have a wealth of experience and are able to engage in vigorous discussions from various points of view.

Since I was appointed as an outside director in 2014, corporate governance in Japan has undergone dramatic change. While many companies are seeking to strengthen their corporate governance, Yokogawa's corporate culture has allowed it to actively embrace perspectives from outside the organization despite having a history dating back over a century, ensuring free and vigorous discussions by a Board of Directors that includes outside directors. All outside directors bring a wealth of corporate management experience and are able to engage in wide-ranging discussions of market trends, Yokogawa's strengths, and other topics, and the issues that they debate are given careful consideration and factored into strategy development. To improve the Board of Directors' effectiveness, evaluations are periodically conducted by such means as the distribution by third parties of questionnaires to executives both inside and outside the Company. I expect that such initiatives will enhance Yokogawa's corporate governance.

Accelerating the pace of reform through the integration of OT and IT

As the business environment in which Yokogawa's customers operate undergoes significant change, one could say that a company's sustainability will depend on its ability to transform itself. At Yokogawa, a wide range of initiatives have been carried out as part of previous reforms. Particularly commendable has been Yokogawa's effort to recruit people from outside the Company to work in such important areas as marketing, human resources, and digital transformation-related strategy. In accordance with the TF2020 plan's aims of achieving further transformation, the Company must take on a variety of new challenges and seek to keep ahead of the rapid

changes underway in today's world. As an outside director, I have stressed the importance of integrating both OT*, which is one of Yokogawa's strengths, and IT*. With the rapid advances in digital technologies, it is crucial that the Company's managers stay informed on the latest IT solutions around the world that can help to enhance organizational productivity and deliver value to customers. Training and utilization of personnel, including younger employees, is also essential. Further, Yokogawa shows great potential for finding solutions to environmental problems and helping to achieve the United Nations' Sustainable Development Goals (SDGs). As the need to resolve social problems increases, the Company will need to further expedite its reforms from 2020 onward.

Enhancing the Board's supervision of the achievement of the mid-term business plan and following up with risk management

To support and promote reforms in my capacity as chairman of the Board, I will strive to create an environment that encourages communication between inside and outside directors. This will entail the selection and prioritization of agenda items, the preparation of ample and varied materials, and other activities. It will be essential for the Board of Directors to strengthen their supervisory functions to ensure that the TF2020 initiatives are steadily implemented and that a foundation is laid for future steps to be carried out in a timely manner. With respect to risk management, which is crucial for taking on a variety of challenges, the Board of Directors will not only conduct thorough and global risk analysis but also follow up in a reliable manner to ensure risks can be detected and reported through the reporting line. Going forward, the Board of Directors will seek to enhance Yokogawa's corporate value by strengthening its effectiveness and further heightening the quality of its discussions.

* OT: Operational technology, IT: Information technology

Corporate Governance System

Basic view on corporate governance – governance that supports transformation –

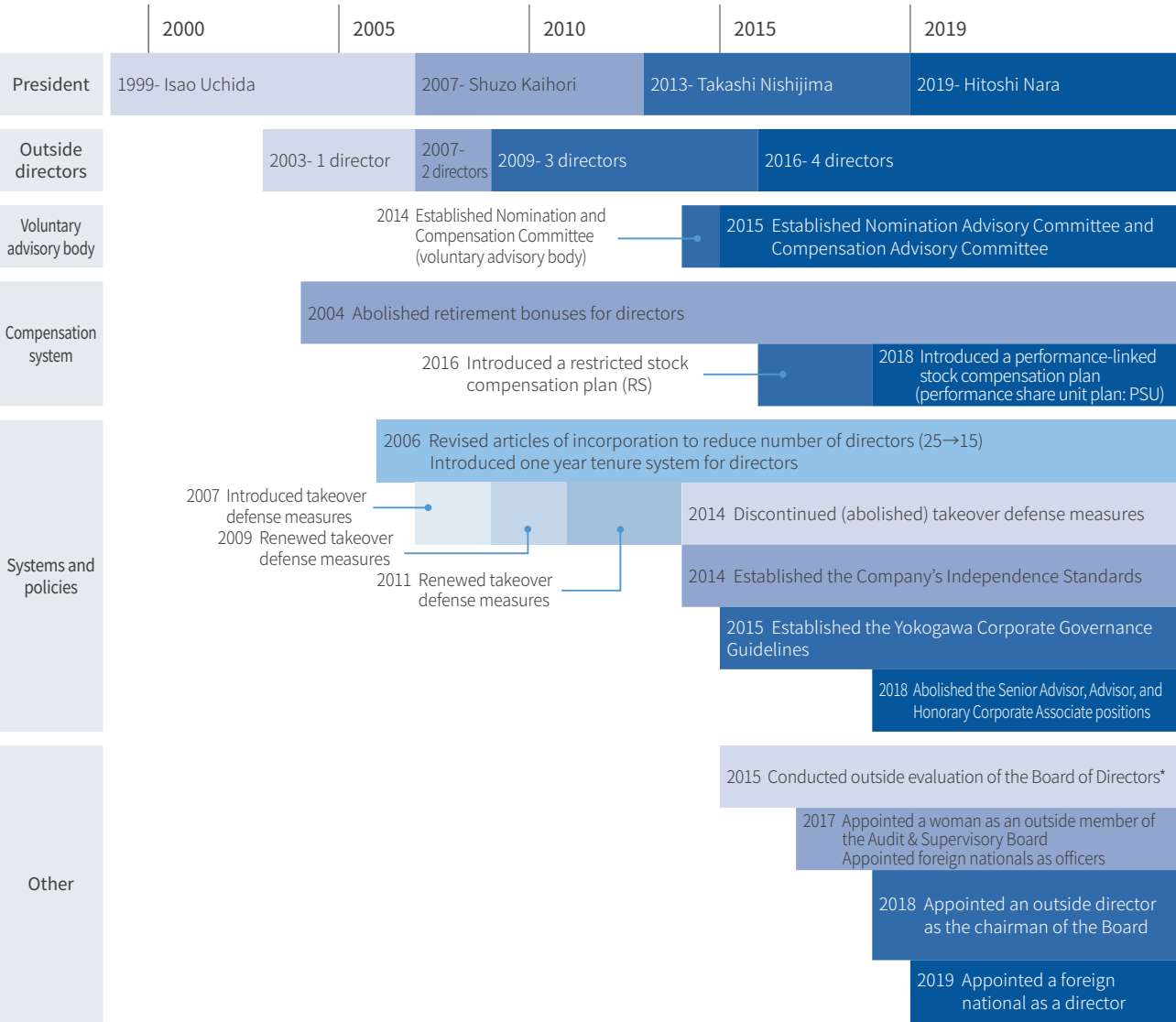
The Group has established a corporate philosophy, the Yokogawa Philosophy, and Standards of Business Conduct for the Yokogawa Group that apply to the entire Group, and strives to have appropriate relationships with all stakeholders as well as aims for sustainable corporate growth and increased corporate value over the medium to long term. In addition, based on the philosophy that “a company is a public entity of society,” the Group positions answering the trust of all stakeholders, including shareholders, customers, business partners, society, and employees, via sound and sustainable growth, as the basic mission of its corporate management.

In order to maximize its corporate value, the Group believes that efforts such as thorough compliance, appropriate risk management, and information disclosure in order to ensure constructive dialogue with shareholders and other stakeholders are important.

The Group formulates and discloses these Yokogawa Corporate Governance Guidelines which serve as the basic policy for continually working on corporate governance in line with the above views.

https://www.yokogawa.com/pr/pdf/cg_guidelines-en.pdf

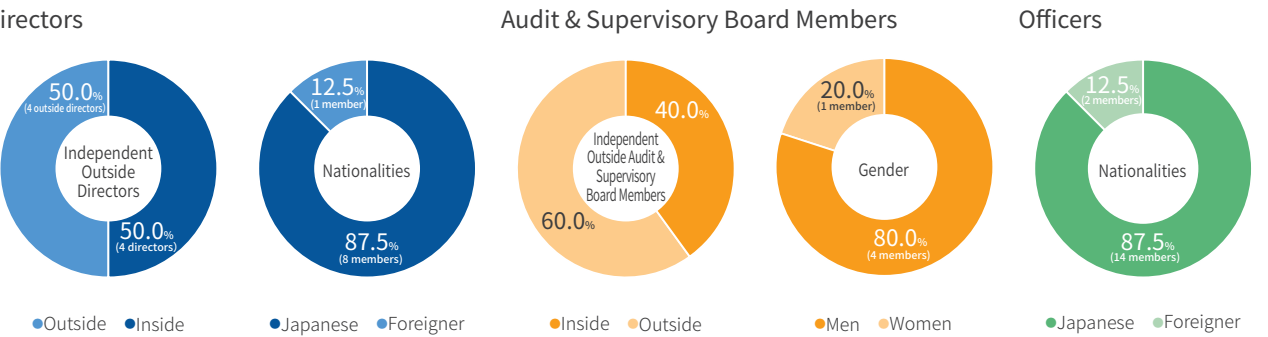
Enhancing Corporate Governance



*Once every three years. Self-evaluation in other years

Corporate Governance Highlights

Composition of the management team (As of July 1, 2019)



Examples of agenda items at the Board of Directors in FY2018

- Progress of measures for transformation under the TF2020 mid-term business plan
- Revision of the executive compensation plan (introduction of the performance share unit plan)
- Progress of KPIs for sustainability (ESG) and disclosure
- Review of responses to the Corporate Governance Code in FY2018
- The composition and functioning of the Board of Directors

Principal activities at the Board of Directors in Fiscal Year 2018

Outside directors	Mitsudo Urano	Provided advice primarily based on his wide knowledge and abundant experience as a corporate manager, and through his expertise in corporate governance.
	Noritaka Uji	Provided advice with high insight based on his wide knowledge and abundant experience as a corporate manager and thorough expertise in technology development and IT/ICT fields.
	Nobuo Seki	Provided advice primarily based on his wide knowledge as a corporate manager, his abundant experience in the engineering business centered on the energy industry, and his extensive expertise in global business.
Outside members, Audit & Supervisory Board	Shiro Sugata	Provided advice primarily based on his wide knowledge as a corporate manager, his abundant experience in the development and marketing of industrial instruments, and his extensive expertise in global business.
	Zenichi Shishido	Provided advice based on experience in a wide range of research activities as an expert in business law and corporate governance.
	Izumi Yamashita*1	Provided advice with high insight based on abundant managerial experience in a wide range of business activities.
	Yasuko Takayama	Provided advice primarily based on her extensive practical experience, including corporate social responsibility, gained when working for a major company in the consumer market, as well as a wealth of experience as a fulltime Audit & Supervisory Board Member and as an outside executive at various companies.
	Makoto Ohsawa*2	Provided advice with high insight based on abundant managerial experience in a wide range of business activities.

*1 For outside member of Audit & Supervisory Board Izumi Yamashita, we have described his advice of the Board of Directors meetings and Audit & Supervisory Board meetings convened before he retired the position on June 26, 2018.
*2 For outside member of Audit & Supervisory Board Makoto Ohsawa, we have described his advice of the Board of Directors meetings and Audit & Supervisory Board meetings convened since he assumed the position on June 26, 2018.

Advisory Committee Members (As of July 1, 2019)

Nomination Advisory Committee		Compensation Advisory Committee	
Chairman Takashi Nishijima (Chairperson)		Chairman Takashi Nishijima	
President and Chief Executive Officer Hitoshi Nara		President and Chief Executive Officer Hitoshi Nara	
Outside Director Noritaka Uji		Outside Director Noritaka Uji (Chairperson)	
Outside Director Nobuo Seki		Outside Director Nobuo Seki	
Outside Director Shiro Sugata		Outside Director Shiro Sugata	
Outside Director Akira Uchida		Outside Director Akira Uchida	

Management Team (As of July 1, 2019)

Directors



Takashi Nishijima
Chairman
Date of birth: Aug. 12, 1957
Number of years since appointment as a director: 8 years



Hitoshi Nara
President and Chief Executive Officer
Date of birth: Jan. 23, 1963
Number of years since appointment as a director: 8 years



Junichi Anabuki
Director, Executive Vice President
Head of Corporate Administration Headquarters
Date of birth: Mar. 18, 1963
Number of years since appointment as a director: 5 years



Dai Yu
Director, Senior Vice President
Head of Digital Enterprise Business Headquarters
Date of birth: Feb. 25, 1963
Number of years since appointment as an outside director: 3 years



Noritaka Uji
Outside Director, Chairman of the Board
Date of birth: Mar. 27, 1949
Number of years since appointment as an outside director: 5 years



Nobuo Seki
Outside Director
Date of birth: Sep. 21, 1944
Number of years since appointment as an outside director: 4 years



Shiro Sugata
Outside Director
Date of birth: Nov. 17, 1949
Number of years since appointment as an outside director: 3 years



Akira Uchida
Outside Director
Date of birth: Oct. 4, 1950



Koichi Chujo
Audit & Supervisory Board Member
Date of birth: Sep. 16, 1954
Number of years since appointment as a member of the Audit & Supervisory Board: 3 years



Kouji Maemura
Audit & Supervisory Board Member
Date of birth: May 21, 1956
Number of years since appointment as a member of the Audit & Supervisory Board: 2 years



Zenichi Shishido
Outside Member, Audit & Supervisory Board
Date of birth: Apr. 20, 1956
Number of years since appointment as a member of the Audit & Supervisory Board: 7 years



Yasuko Takayama
Outside Member, Audit & Supervisory Board
Date of birth: Mar. 8, 1958
Number of years since appointment as a member of the Audit & Supervisory Board: 2 years



Makoto Ohsawa
Outside Member, Audit & Supervisory Board
Date of birth: Feb. 20, 1959
Number of years since appointment as a member of the Audit & Supervisory Board: 1 years

- Senior Vice President Masaharu Yamazaki**
Head of Aerospace Products Business Headquarters
President, Yokogawa Test & Measurement Corporation
- Tsuyoshi Abe**
Head of Marketing Headquarters
- Vice President Hajime Watanabe**
Head of Audit, Compliance and Quality Assurance Headquarters
- Shuji Mori**
Chief Executive for North and South Americas
President, Yokogawa Corporation of America
- Shigeyoshi Uehara**
Head of IA Systems and Service Business Headquarters
- Koji Nakaoka**
Head of Global Sales and Industrial Marketing Headquarters
- Herman van den Berg**
Chief Executive for Europe, Russia and CIS
President, Yokogawa Europe B.V.
- Mikio Matsui**
Head of Human Resources and General Affairs Headquarters
- Tetsuya Murai**
Chief Executive for Japan and Korea
President of Yokogawa Solution Service Corporation
- Kunimasa Shigeno**
Head of Global Business Service Headquarters
- Pierre De Vuyst**
Chief Executive for Middle East, Africa and India
President of Yokogawa Middle East & Africa B. S. C. (C)
- Yukihiro Funyu**
Head of Digital Strategy Headquarters
- Kazuhiko Takeoka**
Chief Executive for ASEAN and Pacific
President, Yokogawa China Co., Ltd.
- Kenji Hasegawa**
Head of IA Products and Service Business Headquarters
- Hiroshi Tomatsu**
President, Yokogawa Manufacturing Corporation
- Hiroshi Nakao**
Head of Life Innovation Business Headquarters

Attendance in Fiscal Year 2018

	Name	Attendance at Board of Directors meetings
	Shuzo Kaihori	100% (4/4)
01	Takashi Nishijima	100% (15/15)
	Satoru Kurosu	100% (15/15)
02	Hitoshi Nara	100% (15/15)
	Masatoshi Nakahara	100% (15/15)
03	Junichi Anabuki	100% (15/15)
	Mitsudo Urano	100% (15/15)
05	Noritaka Uji	100% (15/15)
06	Nobuo Seki	100% (15/15)
07	Shiro Sugata	100% (15/15)

	Name	Attendance at Board of Directors meetings	Attendance at Audit & Supervisory Board meetings
09	Koichi Chujo	100% (15/15)	100% (18/18)
10	Kouji Maemura	100% (15/15)	100% (18/18)
11	Zenichi Shishido	100% (15/15)	100% (18/18)
	Izumi Yamashita	100% (4/4)	100% (6/6)
12	Yasuko Takayama	93% (14/15)	94% (17/18)
13	Makoto Ohsawa	100% (11/11)	100% (12/12)

Board of Directors Audit & Supervisory Board

Note 1: For Director Shuzo Kaihori and outside member of Audit & Supervisory Board Izumi Yamashita, we have described his attendance of the Board of Directors meetings and Audit & Supervisory Board meetings convened before he retired the position on June 26, 2018.
Note 2: For outside member of Audit & Supervisory Board Makoto Ohsawa, we have described his attendance of the Board of Directors meetings and Audit & Supervisory Board meetings convened since he assumed the position on June 26, 2018.

Introducing a New Director

I am Dai Yu, Senior Vice President, Head of Digital Enterprise Business Headquarters (DE BHQ), and recently joined the Board of Directors.

I received a Ph.D. in Industry Automation from a Chinese university and pursued a career in petrochemical industry. Before joining Yokogawa, I used to work at Shell Nanhai PJT and Shell Chemicals Asia Pacific & Middle East Headquarters, during which time I gained the impression that Yokogawa is a global leader in the IA and measurement industry with high-quality products and services, particularly impressed by the excellence of Yokogawa's industrial solutions, its attitude and capability to create values together with its customers.

I am currently in charge of the DE BHQ, which can make the most of this experience and knowledge of my background. In order to achieve TF2020 targets, the DE BHQ aims to co-innovate with its customers to achieve a digital transformation for customers using the total solutions and services. We also manage and develop a global solution portfolio for the control business in cooperation with related CMUs and all RHQs, aiming to grow our solution business and enable global activities in a wider range of industries.

As a person in charge of management, I promise to be agile in the response to business trends, transform our business through TF2020, create new value through co-innovation with customers, maximize the value created by our customers' business activities, achieve sustainable growth, and contribute to increasing YOKOGAWA's corporate value.

Nationality	Singapore
Business Career	Aug. 1990 Joined SINOPEC Yangzi Petrochemical Corporation
	Jan. 1994 Deputy Project Director at Yangzi-BASF Styrenics Company Ltd.
	Jun. 1998 Project Director of BASF/SINOPEC JV Integrated Petrochemical Site (IPS) Project at SINOPEC
	Apr. 2001 GM of Base Chemicals Division at BASF-YPC Company Ltd.
	Jan. 2003 Low Olefins Plant Manager at CNOOC and Shell Petrochemical Company Ltd.
	Nov. 2006 GM of Base Chemicals for Asia Pacific / Middle East at Shell Chemicals
	Jan. 2009 Project GM at Shell China
	Nov. 2012 CEO of Jurong Aromatics Corporation Pte. Ltd.
	Oct. 2015 Joined Yokogawa Electric International Pte. Ltd. GM of China Sales Strategy Center
	Apr. 2016 President of Yokogawa China Investment Co., Ltd. President of Yokogawa China Co., Ltd.
	Apr. 2017 Vice President of the Company, Chief Executive for ASEAN and Pacific, and President of Yokogawa China Investment Co., Ltd.
	Apr. 2019 Senior Vice President of the Company, Head of Digital Enterprise Business Headquarters (present)



Dai Yu Director

Japan's Corporate Governance Code was revised last year, further spurring governance reforms in Japanese corporations. The low profitability of Japanese companies is evidence of the strong need for corporate governance reforms in Japan. Lack of transparency in corporate activities has led many to question whether the companies are managing their businesses properly to ensure that appropriate risks are taken and earnings are commensurate with capital. Yokogawa Electric Corporation has stayed ahead of this trend by increasing the number of outside directors and taking other steps to strengthen the effectiveness of the Board of Directors, while ensuring transparent, sound, and appropriate management practices. It is a great honor to be appointed as an outside director of this company, which has an outstanding track record with such initiatives, but I also feel the weight of a great responsibility.

Governance reform is an endless process, and even a pioneering company like Yokogawa is expected to constantly review its policies to meet the needs of the times and further enhance their effectiveness. And that, I think, is the role expected of outside directors.

I spent 44 years at Toray Industries, Inc., a basic materials company, working primarily in finance and accounting but also undertaking duties in such areas as new project planning, corporate planning, CSR, IR, PR, and advertising. In government conferences and economic organizations, I was given the opportunity to engage in discussions on the topic of corporate governance. I hope to play a role, however small, in contributing to the sustainable development of the Yokogawa Group by applying the expertise I have gained from my experience while remaining mindful of the importance of looking at things from a medium- to long-term perspective.

Business Career	Apr. 1975 Joined Toray Industries, Inc.
	Jun. 1996 Executive Vice President, Toray Industries (America), Inc.
	Jun. 2000 Senior Manager of Corporate Planning 1st Department and Corporate Communications Department, Toray Industries, Inc.
	Jun. 2004 Associate Director of Corporate Planning Department and Investor Relations Department, Toray Industries, Inc.
	Jun. 2005 Vice President (Member of the Board), General Manager of Finance & Controller's Division, Toray Industries, Inc. President of Toray Holding (U.S.A.), Inc.
	Jun. 2009 Senior Vice President (Member of the Board), General Manager of Finance & Controller's Division, Toray Industries, Inc. President of Toray Holding (U.S.A.), Inc.
	Jun. 2012 Senior Vice President (Member of the Board), Chief Investor Relations Officer, Chief Social Responsibility Officer, General Supervisor for General Administration & Legal Division, Corporate Communications Department, Advertising Department, General Manager of Tokyo Head Office, Toray Industries, Inc.
	Jun. 2016 Counselor, Toray Industries, Inc. (retired March 2019)
	Jun. 2019 Director of the Company (present)

Significant concurrent positions
Outside Director, J. FRONT RETAILING Co., Ltd.
Auditor, Suga Weathering Technology Foundation



Akira Uchida Director

Corporate Governance System

Board of Directors

Meetings in 2018

15 Times

The Board of Directors, of which a meeting is held once a month in principle, is comprised of eight Directors including four independent Outside Directors, aiming to achieve sustainable growth and an increase in corporate value of the Group over the medium to long term as a decision-making body. To achieve these goals, the Board of Directors improves profit-earning capability and capital efficiency, and determines the general direction of the Group, including corporate strategies. Also, in addition to monitoring and supervising the execution of business by management, including Directors and officers, the Board of Directors develops provisions related to the execution of duties by Directors, and establishes a framework to take supervision responsibility related to the execution of business.

A non-executive Director shall, in principle, act as the Chairman of the Board of Directors in order to separate the execution and supervision of business, and the Chairman of the Board of Directors shall strive to conduct the meeting of the Board of Directors in a way which creates a place for holding free and open discussions and concrete debates. Currently, Mr. Noritaka Uji, Outside Director, chairs the Board of Directors.

Nomination Advisory Committee

Meetings in 2018

10 Times

With respect to subjects such as nomination of director candidates and audit & supervisory board member candidates, evaluation, appointment and dismissal of representative director and president, appointment and dismissal of officers, proposals for dismissal of directors and audit & supervisory board members, the Nomination Advisory Committee shall provide recommendation to the Board of Directors following deliberations made in accordance with the standard and procedure prescribed to ensure optimal placement for the Group's sustainable growth and corporate governance from the perspective of all stakeholders.

The Nomination Advisory Committee shall be comprised of three or more Directors and a majority of members shall be independent Outside Directors. Currently, there are six members, comprising the Chairman, President and Chief Executive Officer, and four independent Outside Directors, and the role of chairperson is performed by the Chairman, Takashi Nishijima.

Compensation Advisory Committee

Meetings in 2018

4 Times

The Compensation Advisory Committee shall provide recommendation to the Board of Directors so that the compensation system and compensation for Directors and officers promote appropriate challenges targeting the Group's growth, help to hire and retain excellent human resources, and which are suitable from the perspectives of all stakeholders.

The Compensation Advisory Committee shall be comprised of three or more Directors and a majority of members shall be independent Outside Directors. Currently, there are six members, comprising the Chairman, President and Chief Executive Officer, and four independent Outside Directors, and the role of chairperson is performed by Outside Director and chairman of the Board of Directors, Noritaka Uji.

Key Points in Corporate Governance

- 1 Appointed a foreign national as a director for the first time
- 2 The Board of Directors has included multiple outside directors since 2007. At present, four outside directors are serving, thus ensuring management objectivity.

- 3 Outside directors are the majority of the members of the Nomination Advisory Committee and the Compensation Advisory Committee.
- 4 To separate the execution and supervision of business, an outside director who is a non-executive director was appointed as the chairman of the Board of Directors.

Audit & Supervisory Board

Meetings in 2018

18 Times

The Audit & Supervisory Board is comprised of five members in total, which consist of two standing members and three outside members, and its meeting is held once a month in principle. In order to ensure the Group's sustainable growth and corporate soundness, the Audit & Supervisory Board shall make appropriate decisions and express its opinions from an independent and objective standpoint. Also, based on laws and regulations as well as the Auditing Standards for Audit & Supervisory Board Members and the Rules Governing the Audit & Supervisory Board, the Audit & Supervisory Board shall receive reports from each audit & supervisory board member on important matters related to audits, deliberate, and pass resolutions as necessary.

Audit & supervisory board members perform audit & supervisory board member audits in accordance with the annual audit plan that specifies priority audit items. Audit & supervisory board members attend meetings of the Board of Directors and the Management Board and other important meetings, and hold regular meetings with departments that are in charge of internal audits, legal affairs and business ethics which promotes the compliance framework, and exchange and share information about the activities of each, as well as proactively offer opinions.

In addition, the Audit & Supervisory Board members deepen mutual cooperation with the accounting auditor and exchange information with the accounting auditor regularly and as needed to improve the quality of audits by both sides and make the audits more efficient.

Management Board

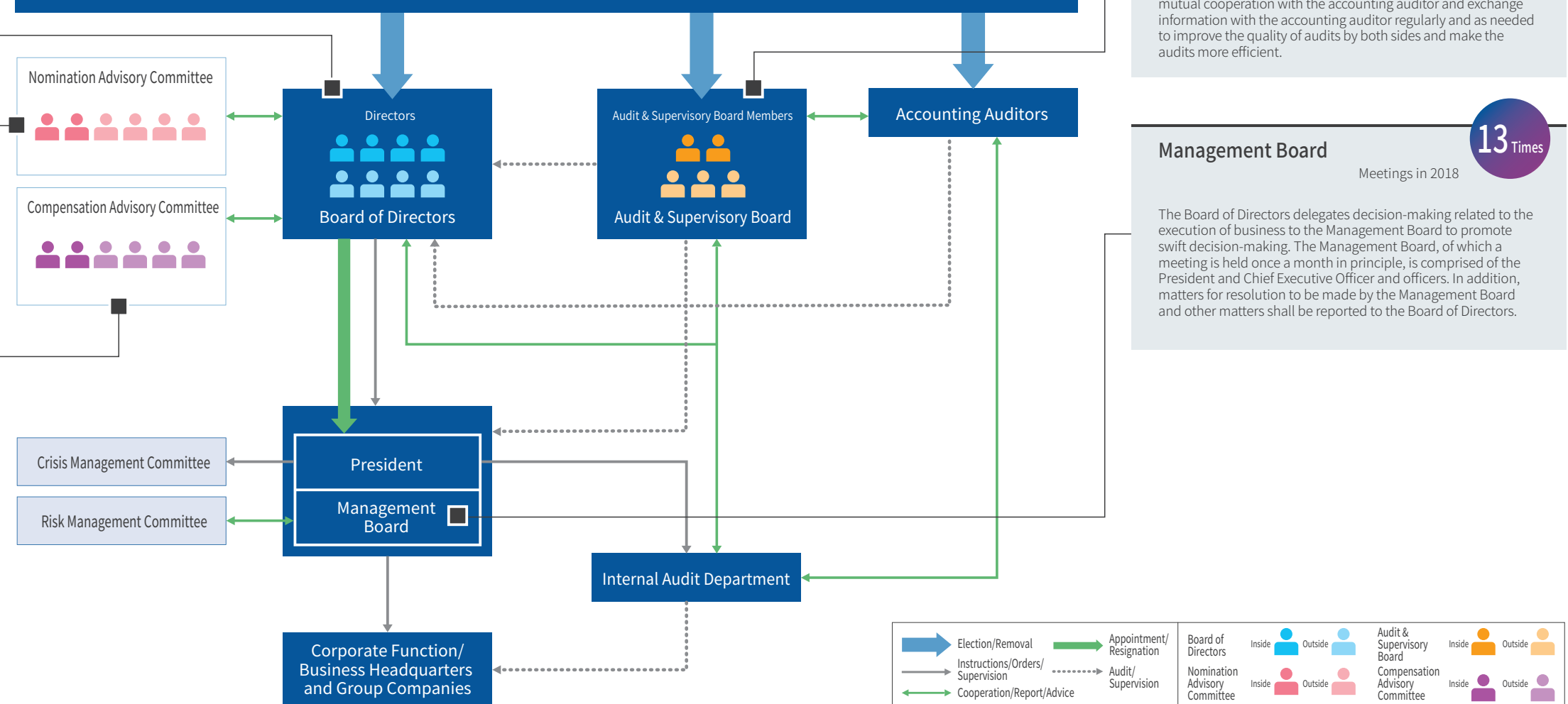
Meetings in 2018

13 Times

The Board of Directors delegates decision-making related to the execution of business to the Management Board to promote swift decision-making. The Management Board, of which a meeting is held once a month in principle, is comprised of the President and Chief Executive Officer and officers. In addition, matters for resolution to be made by the Management Board and other matters shall be reported to the Board of Directors.

Summary of Corporate Governance Structure

General Shareholders Meeting



Business execution and audits

Board of Directors

The Board of Directors shall be composed so as to be well balanced in knowledge, experience, and capabilities to effectively fulfill its roles and responsibilities, and it shall be constituted in such a manner as to achieve both diversity and appropriate size.

In line with the provisions of the Articles of Incorporation, the number of directors shall be no more than 15, and at least one-third of the directors shall be independent outside directors. In order to practice management backed by the trust of shareholders, the term of office for the directors of the Company is set as one year.

At the Board of Directors, transparency and the speed of decision-making are improved through deliberations between directors who are well versed in the Company's business and outside directors who maintain a high degree of independence. In addition, audit & supervisory board members, including outside members of audit & supervisory board, shall work to enhance the management audit function by strictly auditing the

legality and rationality of the work carried out by directors and the validity of their decision making processes.

To increase transparency in the appointment of outside directors and outside Audit & Supervisory Board members, the Board of Directors passed a resolution on the Company's Independence Standards in fiscal year 2014. Evaluation of the Board of Directors is performed every year in order to further enhance appropriateness of the execution of duties by directors and to improve efficiency through objective analysis and evaluation regarding the effectiveness of the Board of Directors.

<About outside directors and outside members of audit & supervisory board >

The Tokyo Stock Exchange requests listed companies to secure at least one independent officer (an outside director or an outside member of the Audit & Supervisory Board who has no conflicts of interest with general shareholders). The Company has four such outside directors and three such outside members of the Audit & Supervisory Board, a

Evaluation of the Board of Directors

Based on the evaluations of each director and audit & supervisory board member, each year the Board of Directors shall identify issues for further boosting the strengths and effectiveness of the Board of Directors. In addition to analysis and evaluations in order to clarify the points that should be emphasized when working on each issue and striving to enhance corporate governance, the overview of the outcomes shall be disclosed in a timely and proper manner. The Board of Directors shall use third-party evaluation organizations as appropriate in order to receive support with analysis and evaluation thereof, as well as resolving issues from these analyses and evaluations.

Status of response to issues identified in fiscal year 2017

In fiscal year 2017, since setting agendas that need to be deliberated from the viewpoint of Outside Directors contributes to an increase in objectivity and transparency and further improvement in corporate governance in the oversight of business execution, implementation of prior deliberation to set the agenda for Board of Directors meetings was identified as an issue. In fiscal year 2018, based on this agenda setting practice, deliberations were conducted with progress of the entire Company's and each department's measures toward transformation in Transformation2020, a mid-term management plan, structure of selling, general and administrative expenses of the Company, and others set as agendas. In addition, deliberations were also conducted on management issues identified at the outside officers' meeting in 2018, which were set as an agenda. The cycle in which contents of deliberations at Board of Directors meetings are feed back to the executive side and the Board of Directors confirms the progress has been implemented.

Method of conducting the evaluation of the Board of Directors in fiscal year 2018

In fiscal year 2018, because three years passed from the last implementation of the evaluation of the Board of Directors using third-party organizations, the evaluation of the Board of directors was conducted under the support of J-Eurus IR, a third-party organization, to maintain objectivity of the evaluation.

In the evaluation, the said company sat in on Board of Directors meetings and inspected the minutes, and then interviewed the Chairman of the Board of Directors. After that, the said company carried out a questionnaire survey of all Directors and Audit & Supervisory Board Members and interviewed all Directors and Audit & Supervisory Board Members based on results of the survey, and then analyzed the current status of the Board of Directors, summed up the findings and reported them to the Board of Directors. The Board of Directors went through the process of discussing the evaluation results, detection of issues and action plans in light of these findings.

Summary of the fiscal year 2018 Board of Directors evaluation results

The summary of results of the evaluation using the third-party organization is as follows:

- A high evaluation regarding composition and general operation of the Board of Directors was received.
- Discussions that drive transformation and encourage sound risk-taking have been held. Going forward, the Board of Directors is expected to conduct discussions more focused on important points by narrowing agendas and other means.
- Outside Directors' statements from the viewpoint of management and the external viewpoint have largely contributed to discussions. Qualifications and composition of members have been highly praised, and such high-level qualifications and composition are expected to be maintained.

As a result of discussing results of the fiscal year 2018 evaluation after confirming, based on the status of response to issues identified in fiscal year 2017, that the Board of Directors has continued to strive to improve its effectiveness, we confirmed that the Board of Directors functions effectively.

Future efforts for improvement

As a result of discussing a future improvement plan with the fiscal year 2018 Board of Directors evaluation results and discussions at the outside officers' meeting also taken into account, we have decided to implement prior deliberations to set the agenda for Board of Directors meetings as well as to continue to set reporting on progress of measures toward transformation in Transformation 2020, a mid-term business plan, and oversee it at the Board of Directors in fiscal year 2019. Furthermore, we are also working to make effective use of time for deliberations to focus on discussions about important points, and improve the quality of discussions. In addition, to maintain the high-level qualifications and compositions of Outside Directors as well as Outside Audit & Supervisory Board Members, the Nomination Advisory Committee is also making efforts to deepen discussions on the process of electing replacements for Outside Directors and Outside Audit & Supervisory Board Members.

Going forward, we will continue to conduct an evaluation of the current status of the Board of Directors annually and strive to improve effectiveness of the Board of Directors.

total of seven independent officers who are registered with the Tokyo Stock Exchange (as of June 25, 2019).

Audit & Supervisory Board

The Audit & Supervisory Board shall be composed so as to be well balanced in knowledge, experience, and capabilities to effectively fulfill its roles and responsibilities, and it shall be constituted in such a manner as to achieve both diversity and appropriate size. It is particularly prescribed that the Audit & Supervisory Board shall appoint at least one audit & supervisory board member with sufficient knowledge of finance and accounting.

In line with the provisions in the Articles of Incorporation, the number of audit & supervisory board members shall be no more than five, and at least one-half of the audit & supervisory board members shall be independent outside audit & supervisory board members. The Audit & Supervisory Board shall be comprised entirely of all the audit & supervisory board members.

Based on its resolution, the Audit & Supervisory Board shall appoint at least one standing member of the Audit & Supervisory Board.

Nomination Advisory Committee and Compensation Advisory Committee

The Company has established both the Nomination Advisory Committee and the Compensation Advisory Committee as voluntary advisory bodies to give opinions in response to

consultations from the Board of Directors regarding nominating Directors and determining compensation.

<Nomination Advisory Committee>

The Nomination Advisory Committee makes decisions on items set forth below.

- (1) Details of the agenda item to be discussed at a meeting of the Board of Directors concerning the appointment of officers or dismissal of officers or the Representative Director
- (2) Establishment, amendment or abolition of necessary basic policies, regulations, procedures, etc. to enable a decision by the committee regarding a matter stated in item (1).
- (3) Other matters that the committee recognizes as important in relation to the appointment of candidates, dismissal of officers or removal of the Representative Director stated in item (1).

<Compensation Advisory Committee>

The Compensation Advisory Committee makes decisions on items set forth below.

- (1) Policy in relation to decisions concerning the details of compensation, etc. for directors and executive officers
- (2) Details of compensation, etc. for each director and executive officer, individually
- (3) Establishment, amendment or abolition of necessary basic policies, regulations, procedures, etc. to enable a decision by the committee regarding a matter stated in item (2).
- (4) Other matters that the committee recognizes as important in relation to compensation, etc. pertaining to item (1) or item (2).

The policy and procedure for the appointment and dismissal of Directors, Audit & Supervisory Board Members and officers

Policy for nomination of Director and Audit & Supervisory Board Member candidates, and appointment of officers

The Board of Directors shall be composed so as to be well balanced in knowledge, experience, and capabilities to effectively fulfill its roles and responsibilities, and it shall be constituted in such a manner as to achieve both diversity and appropriate size.

Under this premise, human resources that contribute to improvement of corporate governance are nominated as Director and Audit & Supervisory Board Member candidates. Furthermore, human resources that are familiar with the Group's business and contribute to the appropriate execution of business and supervision of highly effective management and that have experience and knowledge required for formulation of management strategies aiming at an increase in the Company's corporate value over the medium to long term and contribute to right management decisions and supervision of highly effective management are nominated as Director candidates, while human resources that are familiar with the Group's business and contribute to appropriate auditing of management of the Company and Group companies and that have knowledge on accounting, finance, legal affairs and corporate management and contribute to appropriate auditing of management are nominated as Audit & Supervisory Board Member candidates. Officers are appointed after confirmations of whether the candidate has sufficient experience, knowledge, etc. and whether he or she has an intention and attitude suitable for the management are made.

Procedure for nomination of Director and Audit & Supervisory Board Member candidates, and appointment of officers

With respect to nomination of Director candidates and Audit & Supervisory Board Member candidates as well as appointment of officers, the Company has established the Nomination Advisory Committee, which is a voluntary advisory body comprised of at least three Directors, of whom a majority are independent Outside Directors based on the resolution of the Board of Directors, in order to enhance the objectivity and transparency of the nomination and appointment.

Matters with respect to nomination of Director candidates and appointment of officers are resolved by the Board of Directors on the basis of recommendation from the Nomination Advisory Committee prepared through deliberations made in accordance with the prescribed standard and procedure for new appointment or reappointment. Matters with respect to nomination of Audit & Supervisory Board Member candidates are resolved by the Board of Directors on the basis of recommendation from the Nomination Advisory Committee prepared through deliberations made in accordance with the prescribed standard and procedure for new appointment and reappointment, upon having gained consent of the Audit & Supervisory Board.

Policy and procedure for dismissal of Directors and Audit & Supervisory Board Members

The Nomination Advisory Committee has prescribed the standard and procedure for dismissal of Directors and Audit & Supervisory Board Members. In reference to the deliberation and recommendation from the Nomination Advisory Committee based on the dismissal standard and procedure, the Board of Directors deliberates proposals of dismissal of the Directors and Audit & Supervisory Board Members.

Policies and procedures for evaluation, new appointment, reappointment, and dismissal of President and Chief Executive Officer

The Nomination Advisory Committee has also prescribed the standard and procedure for new appointment, reappointment, and dismissal of President and Chief Executive Officer. The evaluation of President and Chief Executive Officer is conducted every year and takes into account basic evaluation criteria that have a quantitative aspect including business performance. The Nomination Advisory Committee ensures objectivity, timeliness, and transparency of processes by recommendations on new appointment, reappointment and dismissal presented to the Board of Directors following deliberation based on the prescribed standard and procedure for new appointment, reappointment, and dismissal in reference to evaluation results and succession plan.

Policy and procedure for dismissal of officers

Dismissal of officers is also resolved by the Board of Directors based on the Nomination Advisory Committee's recommendation and in reference to the prescribed standard and procedure.

Executive compensation and others
<Method for determining executive compensation and others>

The Company positions its executive compensation plan as an important item in corporate governance, and to increase the objectivity and transparency of Director compensation, has formed a Compensation Advisory Committee, which comprises three or more Directors, based on the resolution of the Board of Directors, with the majority being Outside Directors. This committee deliberates the plans for Director compensation, and reports the result to the Board of Directors as well as decides the amount of individual payments within the limit approved by the General Meeting of Shareholders (*1). The Board of Directors also respects this report upon determining the plan. Audit & Supervisory Board Member compensation is also determined through discussions among Audit & Supervisory Board Members within the limit approved by the General Meeting of Shareholders (*2).

(*1) The annual limit for Director compensation was set at 1,600 million yen by resolution of the 2018 Annual General Meeting of Shareholders convened on June 26, 2018. This does not include employee salaries. The number of the Company's Directors is no more than 15 in accordance with the provision of the Articles of Incorporation.
(*2) The annual compensation limit for Audit & Supervisory Board members was set at 150 million yen by resolution of the 2004 Annual General Meeting of Shareholders convened on June 25, 2004. The number of the Company's Audit & Supervisory Board members is no more than 5 in accordance with the provision of the Articles of Incorporation.

<Position, authority and activities of the Compensation Advisory Committee>

The Compensation Advisory Committee makes decisions on the items set forth below in order to ensure that the compensation system and compensation for Directors and Executive Officers promotes the appropriate challenging attitude toward the Group's growth, enables hiring and retention of excellent human talent, and fosters a perspective that is held in common with all stakeholders.

(1) Policy in relation to decisions concerning the details of compensation, etc. for directors and executive officers

(2) Details of compensation, etc. for each director and executive officer, individually

(3) Establishment, amendment or abolition of necessary basic policies, regulations, procedures, etc. to enable a decision by the committee regarding a matter stated in item (2).

(4) Other matters that the committee recognizes as important in relation to compensation, etc. pertaining to item (1) or item (2).

Executive categories	(a)Basic compensation	(b) performance-linked compensation		Remarks
		(b)-1 Annual Incentive	(b)-2 Mid- to Long-Term Incentive	
Directors (excluding Outside Directors and Non-executive Directors)	○	○	○	Executive compensation and employee salaries
Outside Directors and Non-executive Directors	○	—	—	Executive compensation
Audit & Supervisory Board Members	○	—	—	Executive compensation
Outside Audit & Supervisory Board Members	○	—	—	Executive compensation
Non-Director officers	○	○	○	Employee salaries

Note: The performance-linked compensation covers Directors and Non-Director officers and excludes Outside Directors. This is because variable compensation such as performance-linked compensation is not appropriate for Outside Directors and Audit & Supervisory Board Members, who maintain a position independent from the performance of duties, and as such only fixed compensation is paid, identically for non-executive Directors

The Compensation Advisory Committee is currently comprised of six members, which consist of the Chairman, President and Chief Executive Officer, and four Outside Directors, and is chaired by Mr. Noritaka Uji, the Outside Director and Chairman of the Board of Directors.

In the fiscal year ended March 31, 2019, the committee conducted a total of four deliberations, examined appropriateness of performance indicators and formulas for the amounts of performance-linked compensation paid in July 2018 and July 2019 and of the total compensation amount in fiscal year 2019, confirmed the basic policy on executive compensation, and conducted other activities.

<Approach to executive compensation>

- (1) Basic policy of the Executive Compensation Plan
- (a) Plan that promotes sustainable, medium- to long-term improvement in corporate value
- (b) Plan that reflects the medium- to long-term management strategy and strongly motivates the achievement of medium- to long-term management objectives
- (c) Plan that prevents bias toward short-term thinking
- (d) Plan and monetary amounts that secure and maintain excellent human resources
- (e) Plan that includes transparency, fairness, and rationality for stakeholders, decided through an appropriate process to ensure these factors
- (2) Composition of executive compensation
- Compensation for the Company's Directors and officers is composed of (a) base compensation, which is fixed component, and (b) performance-linked component ((b)-1 annual incentives and (b)-2 medium- to long-term incentives), and levels of compensation are set through a comparison with companies from the same industry and of the same scale as well as in consideration of the Company's financial conditions.
- The specific composition of compensation for executives and officers shall be as follows in accordance with the executive categories.
- (a) Base compensation
- With regard to base compensation, the amount is determined in accordance with the role and position as Directors and officers and paid.
- (b) Performance-linked compensation
- The Company's basic approach to the executive compensation plan is as follows.

1. The ratio of performance-linked compensation in total compensation is higher.
2. The ratio of performance-linked compensation in total compensation is higher the higher the seniority of the Director, with the President and Chief Executive Officer's ratio of performance-based compensation exceeding 50%.
3. The ratio for the share compensation in total compensation is higher than the average level for companies from the same industry and of the same scale.
- (b)-1 Annual Incentive
- Part of the performance-linked compensation, the annual incentive, is calculated and paid based on an evaluation of the entire company's results and the individual's results for the individual year. As 100% at the time of achievement of performance objectives, the amount paid is designed to vary in the range of 0% to 200%.
- Based on the idea that performance objectives that lead to an evaluation of the entire company's results for the individual year in the annual incentive are significant indicators for the Group to measure sustained growth, the performance objectives have been set for "consolidated sales" and "consolidated return on sales (ROS)."
- Performance objectives and results in the fiscal year ended March 31, 2018, one of determinant factors for performance-linked compensation, are as follows:

Performance objectives set for the fiscal year ended Mach 31, 2018		Results in the fiscal year ended March 31, 2018
Consolidated sales	¥400 billion	¥406.6 billion
Consolidated return on sales	9.0%	8.0%

Note: At the time of achievement for the business performance targets, the ratio of the base compensation to the annual incentive is designed to be 1:0.5 on average if the performance objectives are achieved, though the ratio varies according to the position. This ratio may vary in the range of 1:0 to 1:1, depending on the extent to which performance objectives are achieved.

Figure 1 (image)

Basic compensation 1	Annual Incentive 0.5 (0~1)
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(b)-2 Mid- to Long-Term Incentive

With regard to medium- to long-term incentive, part of the performance-linked compensation, at the 142nd Annual General Meeting of Shareholders convened on June 26, 2018, the Company introduced the performance share unit plan (the "PSU Plan"), a performance-linked stock compensation plan, under which payment of the Company's shares and cash is made in accordance with the extent to which the Company's consolidated return on equity (consolidated ROE) target and other targets have been achieved in the final fiscal year of the period covered by the mid-term business plan. The current period covered by the PSU Plan is the period covered by "Transformation 2020" ("TF2020"), a three-year mid-term business plan for fiscal year 2018 through fiscal year 2020.

After the end of the period of TF2020, on the premise of performance objectives and other requirements established beforehand by the Company's Board of

Directors in TF2020, the Company will decide on the amount of compensation based on the medium- to long-term incentive for each respective Directors and officers who are eligible for the payment calculated by multiplying base amounts of stock compensation determined for each position of the eligible Directors and officers by coefficients established beforehand by the Company's Board of Directors in accordance with the conditions for achievement of performance objectives (the "Payment Rate"), and deliver Company shares equivalent to the value for the amount corresponding to 60% of the compensation amount and pay cash equivalent to the value for the amount corresponding to 40%. The Payment Rate is as follows and designed to vary in the range of 0% to 100% in accordance with the extent to which performance objectives are achieved.

In addition, the amount of medium- to long-term incentive paid is designed so that 0.5 medium- to long-term incentive is added to 1 base amount compensation in principle when the Payment Rate is 100%.

Actual ROE	Payment Rate
Less than 8%	0%
From 8% to less than 11%	(Actual ROE × 100 − 8) / 3 × 25%
From 11% to less than 14%	(50 + (Actual ROE × 100 − 11) / 3 × 50)%
14% or higher	100%

The Company considers that performance objectives in medium- to long-term incentive are based on the linkage with the mid-term business plan. Among several business objectives set in TF2020, the Company has currently chosen "return on equity (ROE)," an indicator showing efficiency of management, for the performance objective based on the idea that it is a significant indicator in an increase in both corporate value and shareholder value.

As aforementioned, the PSU Plan are made generally upon conclusion of a target period, largely in accordance with the conditions for achievement of performance objectives. Accordingly, at this point in time, which is during the period of TF2020, the Company will not determine whether or not to deliver the Company's shares or make payment of cash, nor will the Company determine the number of the Company's shares to deliver or the amount of cash to pay in the event of any delivery or payment thereof.

Furthermore, under the PSU Plan, the Company has established clawback provisions enabling it to demand uncompensated refund of all or part of compensation paid as the compensation amount pertaining to the PSU Plan, if a situation arises involving substantial amounting improprieties or significant losses.

Note: In the fiscal year of payment of the medium- to long-term incentive, the ratio of the base compensation to the annual incentive and the medium- to long-term incentive is designed to be 1:0.5:0.5 on average if the respective performance objectives for those incentives are achieved, though the ratio varies according to the position. This ratio may vary in the range of 1:0:0 to 1:1:0.5, depending on the extent to which the respective performance objectives for the annual incentive and the medium- to long-term incentive are achieved.

Figure 2 (image)

Basic compensation 1	Annual Incentive 0.5 (0~1)	Mid- to Long-Term Incentive 0.5 (0~0.5)
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Internal Control Systems

The Company has established the Yokogawa Group Internal Control System to ensure the reliability of financial statements and the validity of the decision-making process. As systems that ensure that directors comply with laws, ordinances, and the Articles of Incorporation of the Company, as well as a system required by a Ministry of Justice ordinance that ensures the appropriateness of corporate operations and the operations of the corporate group comprising the Company and its subsidiaries, the Company has the internal control system to ensure proper and efficient execution of the Group’s operations in place.

Moreover, as a part of the system to ensure the effectiveness of audits by Audit & Supervisory Board members, the Audit & Supervisory Board has now entered into an advisory agreement with attorneys.

As part of the Yokogawa Internal Control System, a supply chain management system is in place for overall business processes that include its relationship with customers and suppliers. For the procurement processes in the supply chain, Yokogawa Group’s “Group Purchasing Procurement Code” has been defined based on its Corporate Philosophy and Standards of Business Conduct, to ensure fair and equitable transactions. Yokogawa observes the local ordinances of the country and regions with whom we do business, began working on the issue of conflict minerals, and focuses on establishing a supply chain that considers environmental protection and human rights. In order to efficiently and effectively implement supply chain management of environmental and social issues, we are participating in committees of industry groups such as the Materials Committee of JEITA* and working with other companies.

* JEITA: Japan Electronics and Information Technology Industries Association

Risk Management

The Risk Management Policy has been set forth for the purpose of establishing a basis for the effective and efficient conduct of enterprise risk management by the Yokogawa

Group. Based on this policy, the Risk Management Committee shall decide the significant risks which shall be managed preferentially as the Yokogawa Group and decide the monitoring method for its risks and report them to the Board of Directors. The president shall be responsible for supervising all matters in relation to the risk management as the chairperson of the Risk Management Committee.

Respective organizational units of the Yokogawa Group shall perform the identification and assessment of risks followed by the preparation and implementation of the countermeasures against risks. The department in charge of internal audit shall evaluate the effectiveness of the Yokogawa Group risk management process and reports important findings to the Board of Directors and the Audit & Supervisory Board members.

Crisis situations are to be responded to as set forth in the Group Policy for Crisis Management. As the head of the Crisis Management Committee, the president controls the communication of information and issuance of instructions in the event that the Group is in a crisis, and works to ensure safety and minimize economic losses.

Regarding information security, the Group’s policies on the handling and protection of confidential information are set forth in the Group Information Security Management Code.

Compliance

Yokogawa has set forth its basic compliance policies in the [Yokogawa Group Code of Conduct](#) and directors take the lead in working to see that business ethics are upheld and embraced throughout the Group.

The Yokogawa Group Code of Conduct is a set of guidelines for business conduct and consists of the Basic Policy and the Standards of Conduct.

In addition, the Yokogawa Group Compliance Guidelines which include supplementary Anti-bribery Guidelines set out how employees should respond to a variety of issues encountered on the job.

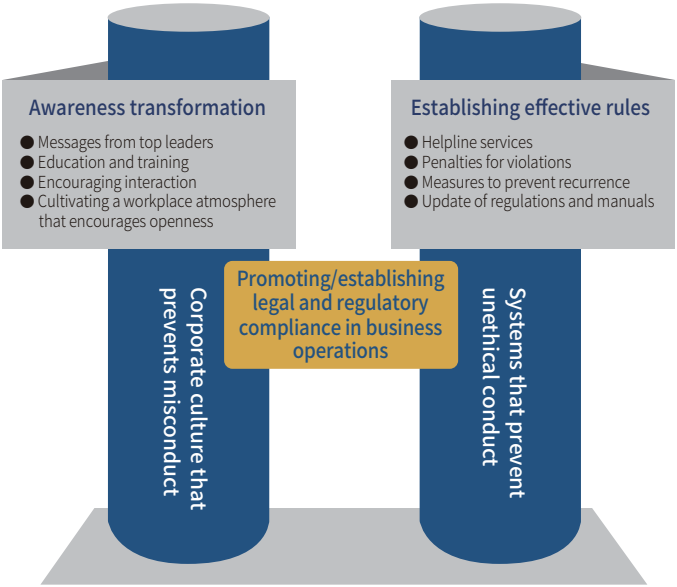
Moreover, we have established a department in charge

of business ethics that is charged with the identification and resolution of issues pertaining to the compliance system. The Company is strongly promoting compliance management. It aims to be healthy and open, with both a culture that encourages and enforces proper ethical conduct and a system for preventing misconduct and scandals before they occur. In so doing, we will meet the expectations of investors and other stakeholders.

See the Yokogawa Group Code of Conduct on p. 66 for more information



Moreover, we have established a department in charge of business ethics that is charged with the identification and resolution of issues pertaining to the compliance system. The Company is strongly promoting compliance management. It aims to be healthy and open, with both a culture that encourages and enforces proper ethical conduct and a system for preventing misconduct and scandals before they occur. In so doing, we will meet the expectations of investors and other stakeholders.



Comment of Hitoshi Nara, President and CEO
Continuing to be a good citizen is our top priority. Not only complying with laws and regulations but also living up the trust and expectations of society, we behave with a clear awareness of the need for compliance.

Examples of Compliance Promotion Initiatives

Awareness Raising and Training Activities:

Over 200 group training programs and e-learning with approx. 8,500 employees participating

In order to raise and inculcate awareness about compliance throughout the Group, the Company and Group companies in and outside Japan conducted compliance training again in fiscal year 2018. In addition, training corresponding to positions was conducted in Japan, taking opportunities such as promotion to managerial positions, appointment to positions outside Japan, and joining the Company.

The Company and Group companies in Japan are also working to deepen understanding and increase awareness of compliance by holding a Compliance Week campaign annually, offering e-learning-based study programs for all employees, and soliciting compliance slogan entries from employees.

Compliance Awareness Surveys: Over 95% response rate

We annually conduct compliance awareness surveys for all employees in order to determine how prevalent compliance awareness is among employees and to improve promotion activities. Survey results are shared throughout the Group. In addition, we analyze the survey data by workplace and function, and use the results when formulating compliance measures in the subsequent fiscal year.

Compliance Hotlines: 95% awareness rate

To rapidly identify and address compliance issues, we have established compliance hotlines, which we actively encourage our employees to use. Specifically, in Japan we have established both an internal hotline and an external hotline that is operated by attorneys. These compliance hotlines maintain strict confidentiality in their operations and respond promptly to caller concerns.

<PDCA cycle for improvement of compliance>



Detailed Explanation: Yokogawa Group Code of Conduct



Having established the Yokogawa Group Code of Conduct in 1994, the Group is striving to ensure that business ethics are upheld and embraced throughout the Group. In recent years, over and above ensuring compliance with laws and regulations and rules, companies are urged to address compliance in a wider scope, for example, by respecting

international guidelines, such as the United Nations Global Compact, and by respecting human rights. In these circumstances, the Group reviewed the configuration and the content of the Yokogawa Group Code of Conduct in July 2019.

Yokogawa Group Code of Conduct

Chapter 1: Basic Policy

1.1 (Realizing corporate philosophy)

We act in accordance with our corporate philosophy of “As a company, our goal is to contribute to society through broad-ranging activities in the areas of measurement, control and information. Individually, we aim to combine good citizenship with the courage to innovate.”

1.2 (Compliance with laws and regulations and cooperation with society)

- (1) We observe the laws and regulations of each country and region, respect social norms and international guidelines, and act with high ethical standards.
- (2) We respect the cultures and customs of each country and region.

1.3 (Respect for human rights)

- (1) We support internationally recognized human rights standards and respect the dignity and human rights of all people.
- (2) We strive to ensure that our business activities do not infringe on human rights, and if we discover such situations, we will respond quickly.

1.4 (Fair business practices)

- (1) We do not engage in any form of corruption, such as the payment of bribes or kickbacks, and conduct our business in a fair and sincere manner, maintaining sound relationships with all stakeholders.
- (2) We reject unjust and unlawful demands, and we do not engage in activities or organizations that pose a threat to the order and safety of civil society or foster criminal conduct.

1.5 (Contributing to society and the environment)

- (1) We contribute to the realization of a sustainable society through our business activities, including developing and providing safe, socially useful products and service solutions for our customers.
- (2) We understand that realizing a sustainable society is a common concern for all humankind and essential for the continued existence of the company, and act on our own initiative to address this challenge.

1.6 (Relationship of mutual trust with all our stakeholders)

We disclose information appropriately and fairly to all stakeholders, and build and foster trust-based relationships with them by maintaining a constructive dialogue.

Chapter 2: Standards of Conduct

2.1 (Relationship with customers)

- (1) Providing safe, high-quality products and services
By providing safe, high-quality products and service solutions, we aim to build long-term partnerships with our customers and grow together with them.
- (2) Accurately providing essential information
We accurately and appropriately provide essential information to ensure the safe and satisfactory use of our products and services by our customers.
- (3) Customer entertainment and gifts
We neither offer nor receive gifts or money to/from customers or sales partners that are in violation of sound business practices and deviate from societal and international norms.

2.2 (Relationship with shareholders)

- (1) Timely and appropriate information disclosure
We actively disclose necessary information to shareholders in a timely and appropriate manner and aim for highly transparent management that wins the trust of the market.
- (2) Prohibition on the provision of unjust benefits
We provide no incentives whatsoever with regard to the exercise of shareholders’ rights, and maintain a sound and transparent relationship with all shareholders.

2.3 (Relationship between the company and employees)

- (1) Prohibition of forced and child labor
We do not allow the use of forced or child labor in any workplace, wherever that may be around the world.
- (2) Eliminating discrimination and creating a comfortable working environment
We do not discriminate on the basis of race, color, sex, religion, political opinion, country of origin, social origin, disability, or other circumstances. We also strive to improve the abilities of our employees, foster workstyles that respect individual differences, and provide a pleasant work environment that is healthy and safe.
- (3) Respect of workers’ rights
We observe labor laws and agreements and respect the rights of workers, including the freedom to participate in labor unions. We also strive through good communication to maintain and develop a relationship of trust between labor and management.
- (4) Prohibition of harassment
We build a corporate culture that encourages employees to treat each other with respect and does not tolerate sexual, power, and other forms of harassment.

2.4 (Relationship with local communities and society)

- (1) Environmental protection
We work with our customers to protect the environment by reducing the environmental impact of our products and services. We also observe environmental laws and regulations and are guided in our actions by the need to protect the environment.
- (2) Contribution to local development
As a good citizen, we build cooperative relationships with local communities, and through the provision of employment and other means, we contribute to the sustainable development of the countries and regions in which we operate.

2.5 (Relationship with suppliers)

- (1) Prohibition of unfair transactions
We engage in fair business transactions based on trust with our suppliers. We do not discriminate against suppliers or use advantages to impose unilateral conditions on them.
- (2) Entertainment or gifts from suppliers
We refuse to accept offers of entertainment or gifts from suppliers.

2.6 (Relationship with competitors)

- (1) Fair and free market competition
We promote fair and free competition by complying with the laws and regulations concerning fair competition and fair trade stipulated in each country and region, and we do not participate in cartels and other anti-competitive arrangements or any type of unfair trade practice.
- (2) Respecting intellectual property rights
Just as we protect our own intellectual property from infringement, we respect the intellectual property rights of others, and ensure that our intellectual property rights do not infringe on others.

2.7 (Relations with politics and government)

- (1) Prohibition on provision of entertainment and gifts to public officials
We maintain sound and transparent relationships with politicians and civil servants and never pay bribes or provide anything of value that could be construed as a bribe
- (2) Regulation of political contributions
We comply with laws and regulations concerning political contributions and do not make contributions that go beyond legally permissible limits.

2.8 (Compliance in international transactions)

- (1) Security trade controls
We comply with laws and regulations related to security trade control and cooperate in maintaining international peace and security. When exporting or providing goods or technology that may be used or diverted for weapons or the development of weapons, and when exporting or providing regulated goods or technology, we observe the relevant procedures and do not commit any act in violation thereof.
- (2) Proper tax payment
We contribute to public finances by complying with tax laws around the world, providing products and services at an appropriate price and properly paying taxes to the tax authorities in each country.

2.9 (Proper use and management of Group assets)

- (1) Proper use and preservation of Group property
We make proper use of the Yokogawa Group’ s tangible and intangible assets in our business activities and do not divert them for personal or third-party use.
- (2) Thorough information security management
We have the duty to maintain the confidentiality of all confidential information held by the Yokogawa Group, including information belonging to any third party that has come into our possession through the course of our business activities. Confidentiality shall be maintained not only during employment but also after one has retired from a position with the Group.
With the use and operation of information devices and other information systems, we comply with the company’ s security regulations and endeavor to prevent data theft and damage.
- (3) Prohibition on conflicts of interest
We do not harm or endanger the company by acting in our own personal interests or the interests of a third party. We conduct all business activities in the best interests of the Yokogawa Group.

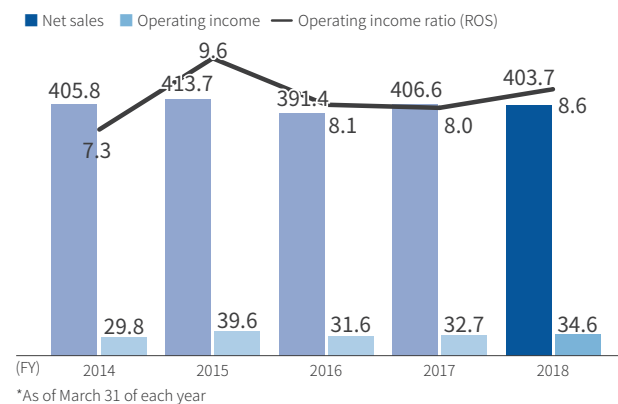
2.10 (Management responsibility)

The management takes the initiative in conducting sound business operations in accordance with this Code of Conduct. In the event of any violation of this Code of Conduct, the management will promptly take corrective and preventive measures, and strictly punish the offending individuals, regardless of their position within the company.

Earnings

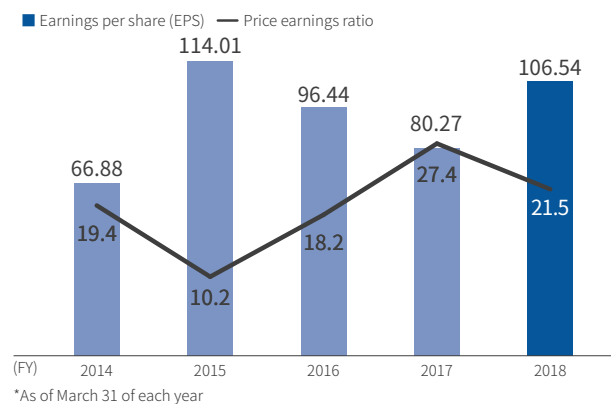
Net sales (Billions of yen) / Operating income (Billions of yen) / Operating income ratio (ROS) (%)

Net sales **¥403.7** billion ROS **8.6** %



Earnings per share (EPS) (Yen) / Price earnings ratio (%)

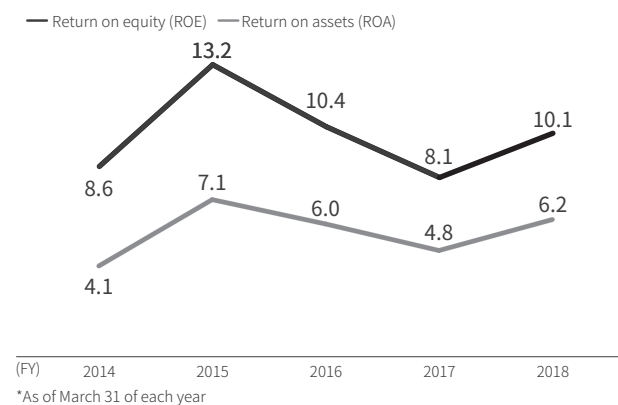
EPS **¥106.54**



Efficiency

Return on equity (ROE) (%) / Return on assets (ROA) (%)

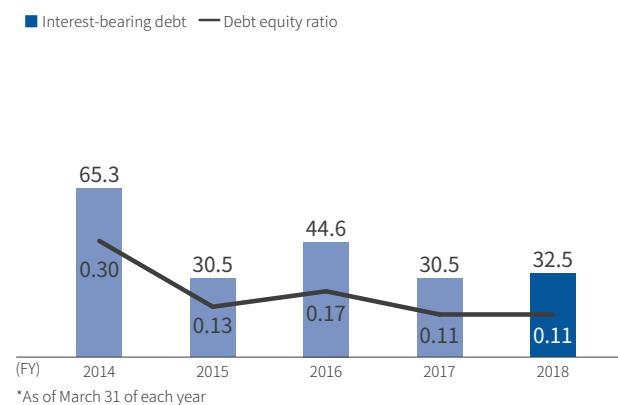
ROE **10.1** %



Soundness

Interest-bearing debt (Billions of yen) / Debt equity ratio (Times)

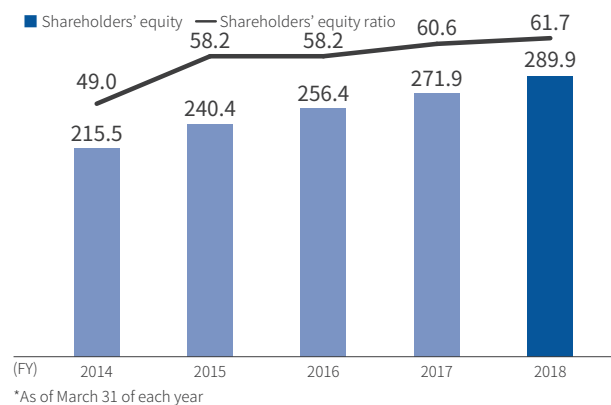
Debt equity ratio **0.11** times



Soundness

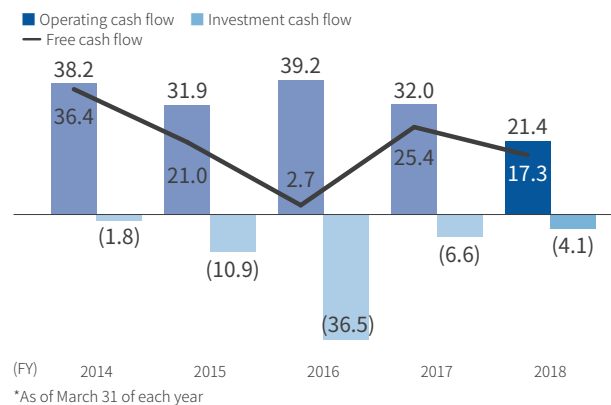
Shareholders' equity (Billions of yen) / Shareholders' equity ratio (%)

Shareholders' equity ratio **61.7** %



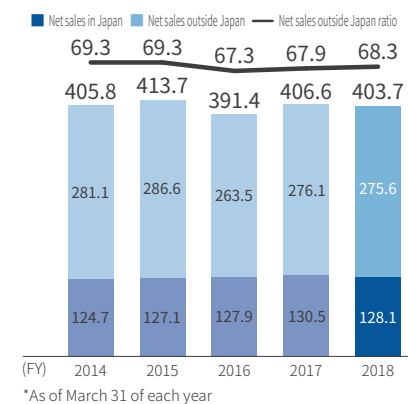
Cash flows (Billions of yen)

Free cash flow **¥17.3** billion



Net sales in Japan and outside Japan (Billions of yen) / Net sales outside Japan ratio (%)

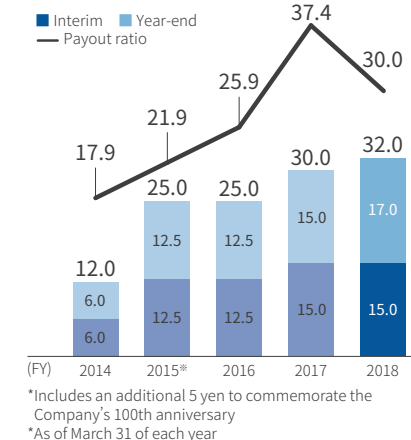
Net sales outside Japan **68.3** %



Distribution of Earnings

Dividend per share (Yen) / Payout ratio (%)

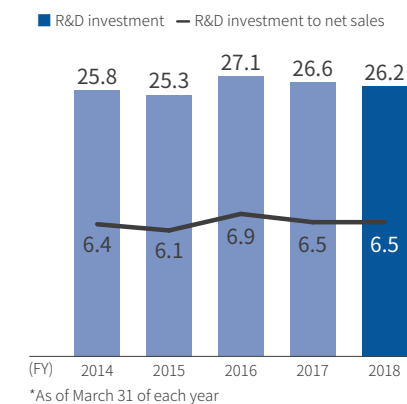
Payout ratio **30.0** %



R&D

R&D investment (Billions of yen) / R&D investment to net sales (%)

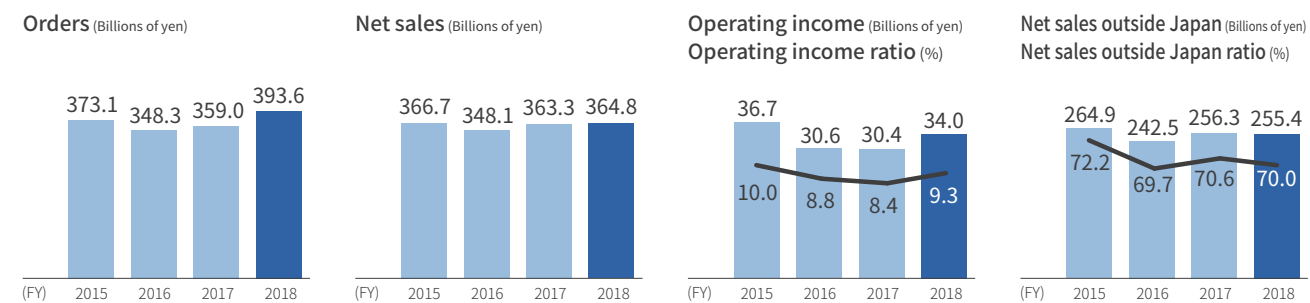
R&D investment to net sales **6.5** %



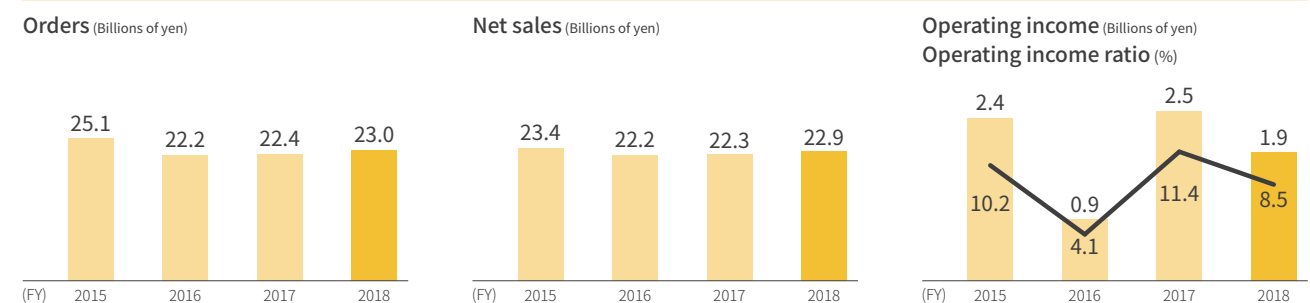
Highlights by Segment

*As of March 31 of each year

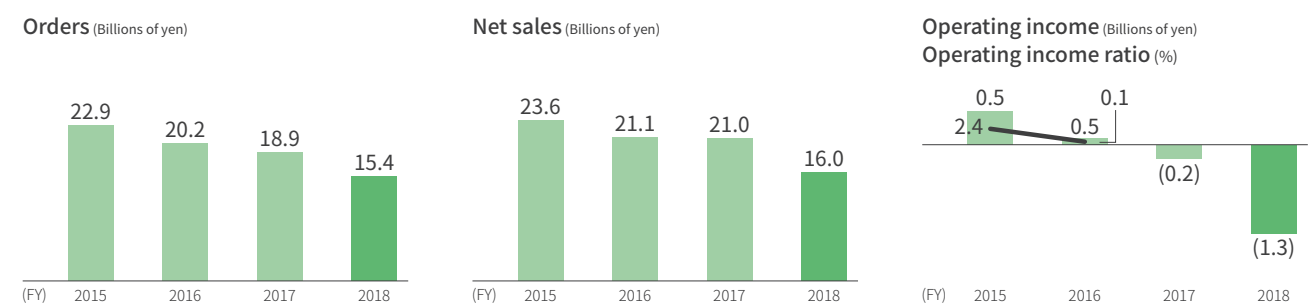
Industrial Automation and Control Business



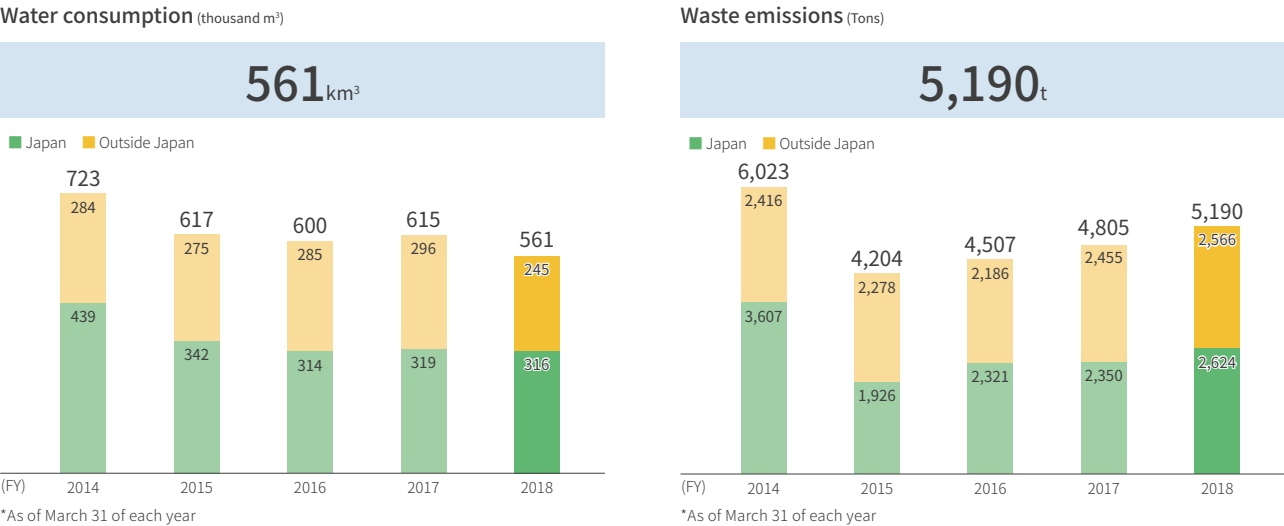
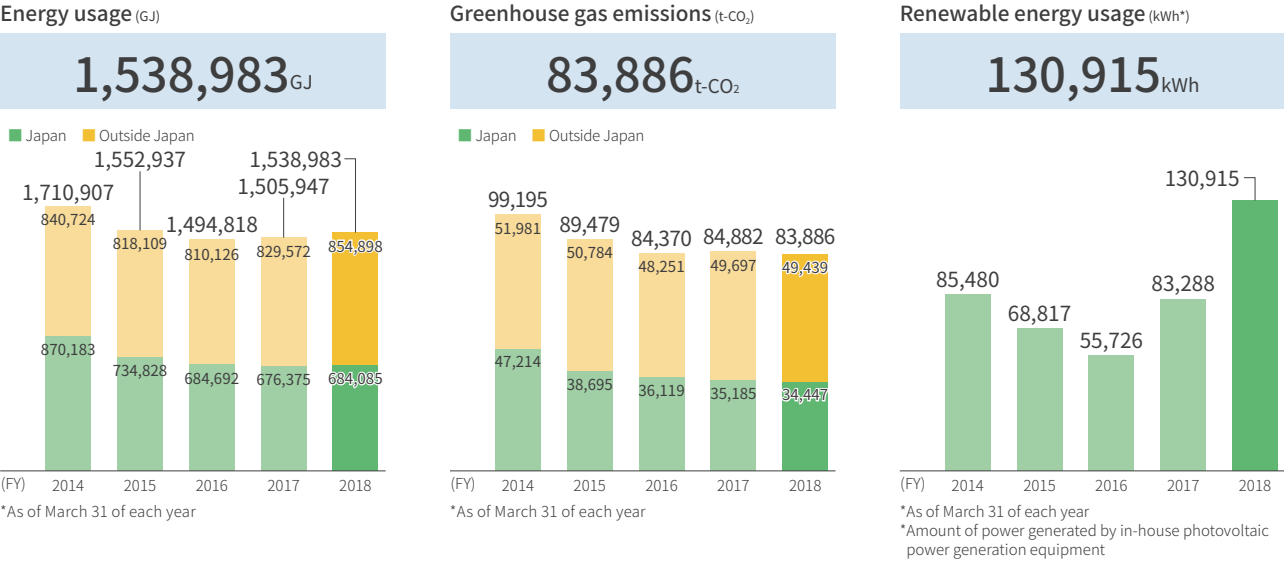
Test and Measurement Business



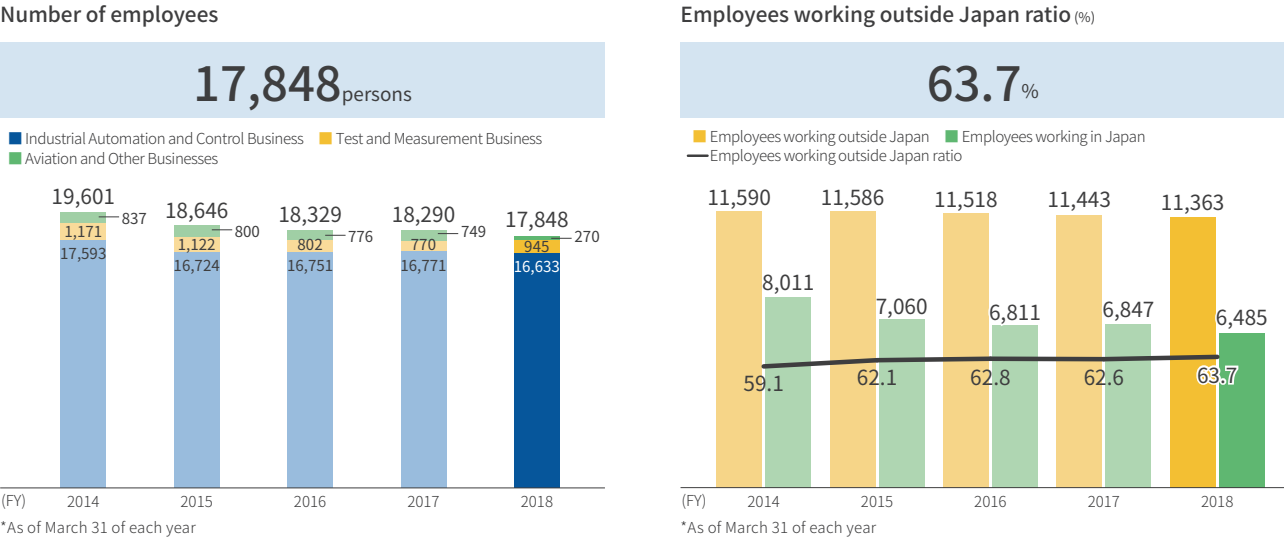
Aviation and Other Businesses



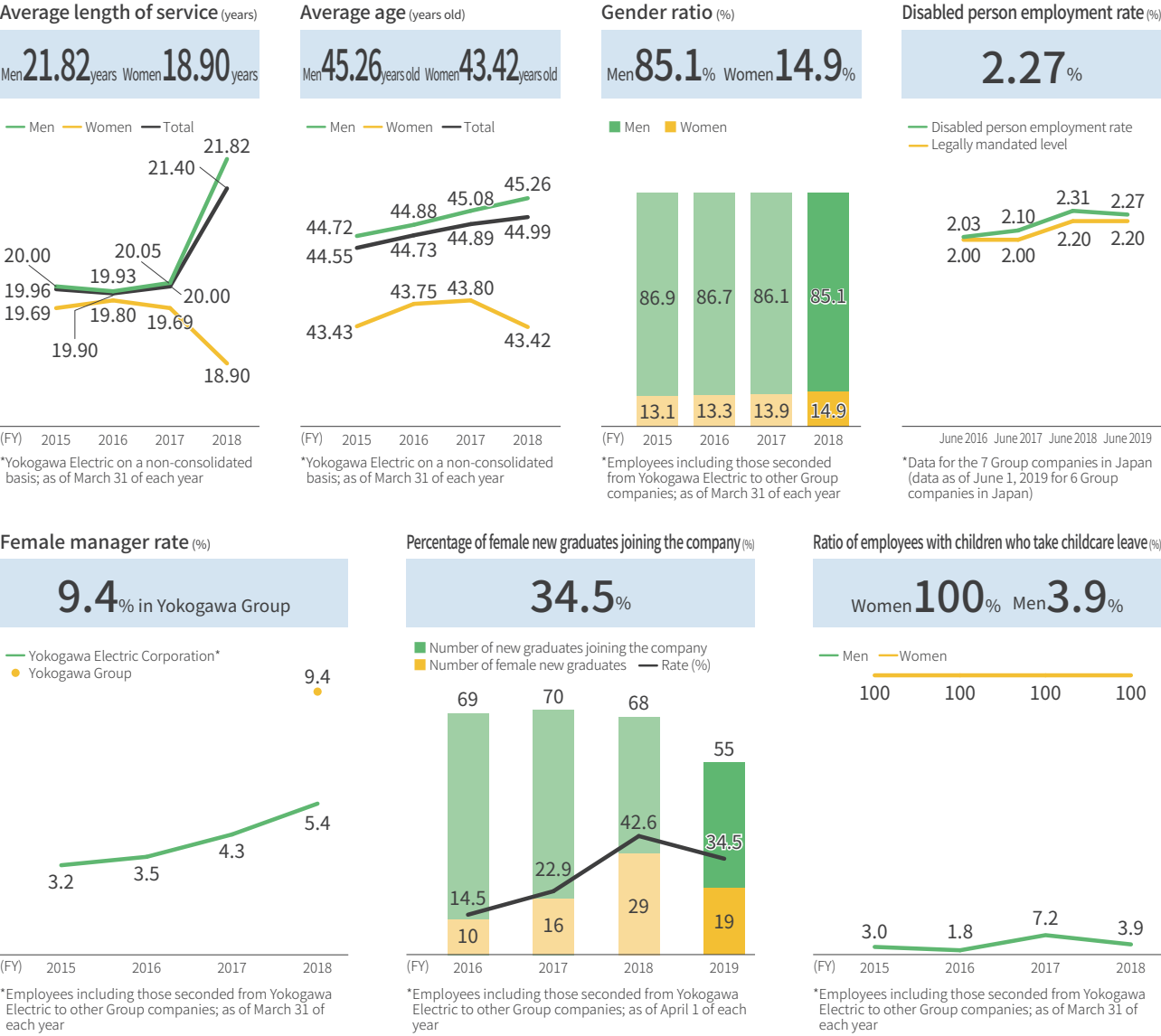
Environment



Employees



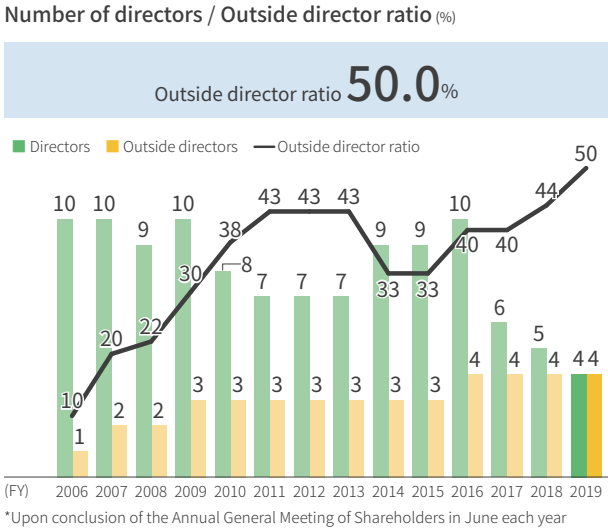
Employees



Occupational Health & Safety



Outside directors



Consolidated 11-Year Summary

	(Billions of yen)										(Millions of US dollars)	
Fiscal year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2018
Financial data												
Orders	374.3	315.2	334.1	344.1	354.5	406.0	417.1	421.1	390.7	400.3	432.0	3,892
Net sales	376.5	316.6	325.6	334.7	347.9	388.5	405.8	413.7	391.4	406.6	403.7	3,637
(Net sales outside Japan)	206.4	177.3	184.7	198.9	213.9	259.4	281.1	286.6	263.5	276.1	275.6	2,483
Cost of sales	253.0	214.5	215.1	195.4	206.6	229.3	236.6	236.9	222.3	231.3	230.6	2,078
Selling, general and administrative expenses	118.8	99.5	99.4	122.6	122.8	133.3	139.4	137.1	137.5	142.6	138.5	1,248
Operating income	4.7	2.6	11.1	16.6	18.4	25.9	29.8	39.6	31.6	32.7	34.6	312
Profit (loss) attributable to owners of parent	(38.4)	(14.8)	(6.7)	6.0	14.7	12.3	17.2	30.2	25.8	21.4	28.4	256
Capital expenditures	26.8	11.1	11.3	11.1	13.5	14.0	14.1	15.4	14.2	13.2	15.0	135
Depreciation and amortization	21.6	16.0	13.8	12.8	13.5	13.6	14.5	15.1	18.0	18.3	17.7	159
Research and development costs	37.2	28.8	29.2	27.5	25.5	25.8	25.8	25.3	27.1	26.6	26.2	236
Cash flow from operating activities	24.5	21.4	16.2	12.9	17.4	30.1	38.3	31.9	39.2	32.0	21.4	193
Cash flow from investing activities	(24.1)	(13.2)	(8.0)	(7.8)	(7.5)	(13.9)	(1.8)	(10.9)	(36.5)	(6.6)	(4.1)	(37)
Free cash flow	0.4	8.2	8.2	5.1	9.9	16.2	36.5	21.0	2.7	25.4	17.3	156
Cash flow from financing activities	28.4	11.1	(25.7)	(8.0)	(8.0)	(21.6)	(20.2)	(26.9)	6.5	(22.4)	(7.0)	(63)
At year-end												
Total assets	401.0	398.8	361.2	359.5	379.9	398.9	440.0	412.8	440.5	448.8	470.1	4,236
Interest-bearing debt	124.3	137.1	111.0	103.3	98.6	81.4	65.3	30.5	44.6	30.5	32.5	293
Shareholders' equity	167.2	153.4	141.7	145.7	168.4	187.3	215.5	240.4	256.4	271.9	289.9	2,612
Financial indicators												
Operating income ratio (ROS)	1.3	0.8	3.4	5.0	5.3	6.7	7.3	9.6	8.1	8.0	8.6	
Debt equity ratio (Times)	0.74	0.89	0.78	0.71	0.59	0.44	0.30	0.13	0.17	0.11	0.11	
Return on equity (ROE)	(19.8)	(9.2)	(4.5)	4.1	9.4	6.9	8.6	13.2	10.4	8.1	10.1	
Return on assets (ROA)	(9.1)	(3.7)	(1.8)	1.7	4.0	3.1	4.1	7.1	6.0	4.8	6.2	
Shareholders' equity ratio	41.7	38.5	39.2	40.5	44.3	46.9	49.0	58.3	58.2	60.6	61.7	
Per share data												
Earnings per share (EPS)	(149.26)	(57.45)	(25.98)	23.11	57.03	47.92	66.88	114.03	96.44	80.27	106.54	0.96
Cash dividends	16.00	2.00	0	5.00	10.00	12.00	12.00	25.00	25.00	30.00	32.00	0.29
Shareholders' equity	649.20	595.42	550.19	565.69	653.83	727.09	836.94	900.75	959.58	1,017.40	1,085.88	9.78
Stock information												
Stock price at the end of the term (Yen / US dollars)	394	814	634	837	946	1,667	1,295	1,163	1,752	2,198	2,291	20.64
Market capitalization (Billions of yen / Millions of US dollars)	1,058	2,187	1,703	2,248	2,541	4,478	3,479	3,124	4,706	5,904	6,154	5,545
Number of issued shares (shares)	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	—
Exchange rate information												
Average yen / US dollar exchange rate during the year	100.66	92.61	85.13	78.82	83.33	100.67	110.58	119.99	108.95	110.70	111.07	

Note: Figures are rounded down to the nearest 100 million yen.

Non-financial data¹												
Number of employees (by segment)	20,247	19,574	19,334	19,437	19,685	19,837	19,601	18,646	18,329	18,290	17,848	
Industrial Automation and Control Business	15,960	15,995	16,159	16,672	17,188	17,669	17,593	16,724	16,751	16,771	16,633	
Test and Measurement Business	2,350	2,469	2,288	1,968	1,667	1,328	1,171	1,122	802	770	945	
Aviation and Other Businesses	1,937	1,110	887	797	830	840	837	800	776	749	270	
Environmental data												
Energy usage (GJ)				1,906,665	1,850,857	1,732,042	1,710,907	1,552,937	1,494,818	1,505,947	1,538,983	
Greenhouse gas emissions (t-CO ₂)				94,244	102,312	103,411	99,195	89,479	84,370	84,882	83,886	
Renewable energy usage (kWh) ²				89,066	96,856	86,442	85,480	68,817	55,726	83,288	130,915	
Water consumption (thousand m ³)				813	846	737	723	617	600	615	561	
Waste emissions (Tons)				6,706	6,343	5,143	6,023	4,204	4,507	4,805	5,190	
Occupational health & safety												
Frequency rate of accidents resulting in lost workdays (calendar year) ³				0.29	0.32	0.39	0.53	0.41	0.46	0.33	0.26	

Notes: 1. For environmental data for fiscal year 2017, certification by Lloyd's Register Quality Assurance Limited has been obtained based on third-party assessment.

2. Amount of power generated by in-house photovoltaic power generation equipment.

3. Frequency rate of accidents resulting in lost workdays = Number of accidents resulting in lost workdays ÷ Aggregate number of work-hours × 1,000,000

Risks Relating to the Group's Business

Described below are matters related to the Group's business that are considered to be main sources of risk or that could have a significant effect on investor decision-making. Recognizing the possibility that such risks may materialize, the Group will work to avoid these risks and take appropriate measures should they occur. However, investment decisions regarding Yokogawa's securities should be made carefully by evaluating the matters stipulated below along with matters mentioned in other sections of this document.

The risks described below include forward-looking statements that are based on judgments made by the Group at the end of fiscal year 2018 and are subject to uncertainties. Actual results may therefore vary from the statements.

1. Risks Relating to the Business Environment

a. Impact of changes in the external business environment

The Group conducts its business activities around the world, and changes in economic and other external conditions in each region could adversely affect its business results and financial condition. Specifically, the following risks are involved:

- Political and economic climate
- Fluctuations in currency exchange rates and interest rates
- Impact of government regulations such as taxation and trade restrictions
- Differences in commercial practices
- Social disruption arising from wars, riots, terrorist attacks, epidemics, new infectious diseases, strikes, and other factors
- Cyber-attacks against the Company's products, services, and internal infrastructure
- Impact of natural disasters such as earthquakes, tsunamis, and typhoons
- Incomplete understanding of country-specific regulations, sanctions, patents, and other legal requirements including those related to environmental protection, and new laws and regulatory amendments

While the Group strives to prevent and avoid these risks by means such as gathering information throughout the Group and signing a contract with external organizations, any of these developments could impact the Group's business results and financial condition as well as its overall business activities, including R&D and production.

b. Changes in the value of assets owned

Changes in the value of shares, etc., owned by the Group could adversely affect its business results and financial condition. In addition, regarding the fixed assets owned by the Group, a decrease in asset value accompanying a decline in their market value or a fall in profitability could adversely affect its business results and financial condition.

2. Risks Relating to Business Activities

a. Industrial automation and control business

The industrial automation and control business is

mainly expected to grow outside Japan in the medium to long term due to increased demand for energy in emerging and resource-rich countries. To increase its share of the global market and bolster sales and income, the Group has focused its resources on this business and strengthened systems related to R&D, production, sales, engineering, and service as well as deployment of M&As and alliances.

Against this background, the Group faces intensifying competition with respect to projects of a certain scale such as the construction of new facilities and system modernization and therefore an even greater need to reduce costs. At the same time, the recent rise of nationalism in resource-rich nations and emerging markets is giving rise to an urgent need for the localization of production and procurement of workforce and services.

While the Group is continuously investing in R&D on technological and service innovation to maintain its competitiveness, its R&D investments may not succeed if the Group is unable to grasp market trends in product and service areas with growth potential. Even if the Group's R&D investments meet market needs, they may not produce innovative technologies, yield anticipated results, or are forestalled by competitors' technological development. Further, the Group may not be able to respond effectively to market demands for cost reduction, including the reduction of production costs and SG&A expenses. In such cases, the Group's business results and financial condition may be adversely affected.

Meanwhile, there is a greater need to enhance production efficiency throughout value chains and lifecycles using AI and other digital technologies, and the Group must meet this need through its businesses. Competitors as well as corporations in IT, heavy electric machinery, and other sectors are stepping up their activities in these areas, and the Group may not be able to match its competitors in cost competitiveness or unexpected new technologies. Further, as we focus on its industrial automation and control business, the Group may not be able to procure parts or execute production for its core products as planned due to some unforeseen circumstances and supply may be delayed or stopped. In such cases the Group's business results and financial condition could be adversely affected.

b. Strategic investment

As the Group focuses on the industrial automation and control business, it continues to invest in new businesses with future potential. In addition to completing a full range of M&A deals and forming alliances, the Group continues to invest aggressively in the life innovation business to realize production improvements in the extensive value chains of the pharmaceuticals and food industries. In its effort to evolve from being a provider of equipment and engineering technologies, the Group also continues to invest in consultation- and simulation-driven advanced services with added value, MES* and other solutions, and other areas aimed at expanding such services.

The Group has in place a complete system to launch new businesses following an M&A transaction. However, if the expected outcome cannot be achieved because of unanticipated change in the business environment or for any other reasons, or the anticipated outcome cannot be achieved because businesses are not launched swiftly following an M&A transaction, the Group's business results and financial condition could be adversely affected.

*Manufacturing Execution System: Information system that visualizes and manages the production process and provides support and instructions to operators.

c. Securing and training human resources

The Group's growth is supported by its talented and capable personnel. The technical personnel that support its leading-edge technology in the fields of measurement, control, and information, and who assure high levels of product quality, are particularly important. Further, in the industrial automation and control business, the importance of personnel with solutions proposal capabilities as well as personnel with the project management and engineering capabilities required to work in the international market is increasing.

The Group continues to recruit personnel in and outside Japan. There is a risk, however, that the Group will be unable to secure the necessary personnel. While the Group continues to develop the personnel it has recruited through education and training, it may face personnel shortages or may not be able to achieve the employee development as planned. If the Group is unable to address such issues satisfactorily, its business results and financial condition could be adversely affected.

d. Product quality

The Group provides its customers highly reliable products and services based on technologies and expertise that have been built up over many years and a rigorous quality control system. If by any chance a defect should occur in one of its products or services, and if this defect causes any damage, then this could adversely affect the Group's business results and financial condition, and could also impact its overall business activities.

e. R&D activities

The Group has positioned basic research in the measurement, control, and information fields and the development of advanced technologies and digital technologies such as IIoT and AI as its most important management issues and is continuously developing new technologies with an eye to the future. The Group is also strengthening its initiatives toward achieving its sustainability goals including SDGs* in response to changes in international standards and regulations. However, if R&D investments do not match future market needs and goals as planned, this could adversely affect the Group's business results and financial condition.

*Sustainable Development Goals: Development goals established by the United Nations made up of 17 global goals and 169 targets set forth in the 2030 Agenda for Sustainable Development, which aims to transform our world

3. Other Risks

a. Intellectual property

The Group has built a complete management system for protecting its intellectual property rights and preventing infringement of the rights of other companies in the course of developing proprietary products and services. However, if such intellectual property rights are infringed upon by a third party and the Group is therefore unable to make an expected profit, or if the Group is deemed to have infringed upon the intellectual property rights of another company due to a difference in viewpoint or some other reason, there is a risk that it will be subsequently disadvantaged by its inability to use important technology and/or may be held liable for compensation, which could adversely affect its business results and financial condition.

b. Information security

Through its business activities, the Group acquires personal or otherwise confidential information on its customers and trading partners. It therefore establishes systems to manage this information and provides employees training on information security. However, in the event that information is leaked or abused due to some unforeseen circumstance, there is a risk the Group will be held liable for compensation or the corporate image will be drastically tarnished, which could adversely affect the Group's business results and financial condition.

c. Breakdown in production of core products due to social instability caused by natural disasters, etc.

A natural disaster, such as an earthquake, fire, flood, or tsunami; the outbreak of war; a terrorist attack; a cyber-attack; or a disruption in the supply chain caused by any of the aforementioned factors that makes it difficult to procure electronic parts or other materials and therefore to manufacture its core products could impact the Group's overall business activities, including its production activities.

d. Changes in the market environment due to impact of SDGs

Society's intensifying expectations concerning social and environmental issues, including SDGs, are impacting the strategies of the Group's customers. The Group is conducting its business activities by setting short-, mid-, and long-term plans for sustainability goals. If, however, the demands of society and customers significantly exceed its initial projections and the Group is unable to meet its customer expectations, the Group's business results and financial condition could be adversely affected.

Financial Section

Consolidated Balance Sheet

Yokogawa Electric Corporation and its Consolidated Subsidiaries
March 31, 2019

	Millions of yen		Thousands of US dollars (Note 1)
	2019	2018	2019
ASSETS			
Current Assets:			
Cash and cash equivalents (Notes 9 and 15)	¥85,701	¥75,836	\$772,156
Receivables (Notes 4, 9 and 15)			
Trade notes and accounts	171,084	153,646	1,541,438
Other	2,459	3,202	22,162
Less: Allowance for doubtful accounts	(4,130)	(3,534)	(37,218)
Net receivables	169,413	153,313	1,526,382
Inventories (Notes 5 and 6)	36,841	32,255	331,935
Other	14,603	14,931	131,577
Total current assets	306,560	276,337	2,762,052
Property, Plant and Equipment (Notes 7 and 8):			
Land	15,750	15,811	141,909
Buildings and structures—net	45,721	45,730	411,940
Machinery, equipment and vehicles—net	6,492	7,000	58,500
Tools, furniture and fixtures—net	5,875	5,729	52,938
Construction in progress	1,102	2,141	9,935
Lease assets-net (Note 14)	198	318	1,787
Total property, plant and equipment	75,141	76,731	677,012
Investments and Other Assets:			
Investment securities (Notes 3, 9 and 15)	33,316	35,671	300,177
Investments in and advances to unconsolidated subsidiaries and affiliated companies (Note 15)	9,233	8,020	83,195
Goodwill (Note 8)	6,608	7,246	59,540
Software (Note 8)	15,798	17,780	142,337
Other intangible assets (Note 8)	11,650	12,765	104,973
Deferred tax assets (Note 12)	6,606	4,979	59,522
Other	7,214	7,823	65,000
Less: Allowance for doubtful accounts	(2,016)	(2,737)	(18,168)
Total investments and other assets	88,412	91,548	796,579
Total Assets	¥470,114	¥444,617	\$4,235,643

See notes to consolidated financial statements.

	Millions of yen		Thousands of US dollars (Note 1)
	2019	2018	2019
LIABILITIES AND EQUITY			
Current Liabilities:			
Short-term loans payable (Notes 9, 15 and 17)	¥3,568	¥1,363	\$32,153
Current portion of long-term debt (Notes 9 and 15)	10,537	493	94,940
Payables (Notes 9 and 15)			
Trade notes and accounts	25,130	25,466	226,421
Electronically recorded obligations-operating	9,966	10,569	89,795
Other	13,530	12,058	121,906
Income taxes payable (Note 15)	4,332	4,947	39,037
Accrued expenses	27,429	27,202	247,139
Advance received	36,891	32,173	332,388
Provision for contract loss (Notes 6 and 18)	7,806	5,881	70,337
Other	8,475	8,965	76,358
Total current liabilities	147,669	129,124	1,330,479
Long-term Liabilities:			
Long-term debt (Notes 9 and 15)	18,872	29,349	170,035
Liability for retirement benefits (Note 10)	4,050	3,586	36,490
Deferred tax liabilities (Note 12)	1,914	2,676	17,247
Other	1,457	1,175	13,127
Total long-term liabilities	26,293	36,789	236,901
Commitments and Contingent Liabilities (Notes 14, 16 and 17)			
Equity (Notes 11 and 22):			
Common stock, authorized, 600,000,000 shares; issued, 268,624,510 shares in 2019 and 2018	43,401	43,401	391,035
Capital surplus	54,602	54,560	491,959
Retained earnings	193,468	173,034	1,743,117
Treasury stock, 1,689,149 shares in 2019 and 1,397,149 shares in 2018	(1,397)	(1,393)	(12,591)
Accumulated other comprehensive income			
Net unrealized gain on available-for-sale securities	9,431	11,873	84,975
Deferred gain (loss) on derivatives under hedge accounting	20	(29)	183
Foreign currency translation adjustments	(8,314)	(8,426)	(74,913)
Defined retirement benefit plans	(1,351)	(1,112)	(12,180)
Total	(214)	2,305	(1,935)
Non-controlling interests	6,290	6,796	56,677
Total equity	296,150	278,704	2,668,263
Total Liabilities and Equity	¥470,114	¥444,617	\$4,235,643

	Millions of yen		Thousands of US dollars (Note 1)
	2019	2018	2019
Net Sales	¥403,711	¥406,590	\$3,637,372
Cost of Sales (Notes 13 and 18)	230,641	231,262	2,078,037
Gross profit	173,070	175,328	1,559,334
Selling, General and Administrative Expenses (Notes 13 and 18)	138,475	142,623	1,247,641
Operating income	34,594	32,705	311,692
Other Income (Expenses):			
Interest and dividend income	2,323	2,333	20,933
Interest expense	(480)	(501)	(4,326)
Loss on valuation of investment securities	(176)	(86)	(1,590)
Net gain on sales of investment securities and investment in affiliated companies (Note 3)	716	3,691	6,458
Foreign exchange loss-net	(545)	(1,913)	(4,912)
Net (loss) gain on disposal of property, plant and equipment (Note 18)	(346)	1,865	(3,119)
Loss on impairment of long-lived assets (Note 8)	(113)	(9,199)	(1,020)
Equity in earnings of affiliates	1,086	869	9,790
Net gain on sale of investment in a subsidiary (Note 23)	1,576		14,207
Other-net	(208)	(375)	(1,880)
Other income (expenses)-net	3,833	(3,315)	34,538
Income before Income Taxes	38,428	29,389	346,231
Income Taxes (Note 12):			
Current	10,784	10,737	97,165
Deferred	(2,530)	(4,127)	(22,800)
Total income taxes	8,253	6,610	74,365
Net income	30,174	22,779	271,866
Net income attributable to non-controlling interests	1,727	1,297	15,568
Net income attributable to owners of the parent	¥28,446	¥21,481	\$256,297
	Yen		US dollars (Note 1)
Per Share of Common Stock (Note 20):			
Basic net income	¥106.54	¥80.39	\$0.96
Cash dividends applicable to the year	32.00	30.00	0.29

2019 Yokogawa Report

Consolidated Statement of Comprehensive Income

	Millions of yen		Thousands of US dollars (Note 1)
	2019	2018	2019
Net Income	¥30,174	¥22,779	\$271,866
Other Comprehensive (Loss) Income (Note 19):			
Net unrealized (loss) gain on available-for-sale securities	(2,449)	1,398	(22,065)
Deferred gain (loss) on derivatives under hedge accounting	49	(31)	448
Foreign currency translation adjustments	(5)	(112)	(51)
Defined retirement benefit plans	(162)	124	(1,464)
Share of other comprehensive loss in affiliates	(93)	(27)	(842)
Total other comprehensive (loss) income	(2,661)	1,350	(23,976)
Comprehensive Income	¥27,513	¥24,129	\$247,889
Total Comprehensive Income Attributable to:			
Owners of the parent	¥25,926	¥22,777	\$233,593
Non-controlling interests	1,586	1,352	14,295

2019 Yokogawa Report

Consolidated Statement of Changes in Equity

Yokogawa Electric Corporation and its Consolidated Subsidiaries
Year Ended March 31, 2019

	Millions of yen												
	Outstanding number of shares of common stock	Accumulated other comprehensive income									Total	Non-controlling interests	Total equity
		Common stock	Capital surplus	Retained earnings	Treasury stock	Net unrealized gain on available-for-sale securities	Deferred gain (loss) on derivatives under hedge accounting	Foreign currency translation adjustments	Defined retirement benefit plans				
Balance, April 1, 2017	267,207,887	¥43,401	¥54,494	¥158,901	¥ (1,409)	¥10,450	¥2	¥(8,286)	¥(1,156)	¥1,009	¥6,107	¥262,503	
Net income attributable to owners of the parent				21,481								21,481	
Cash dividends, ¥30 per share				(7,348)								(7,348)	
Purchase of treasury stock	(3,026)				(6)							(6)	
Disposal of treasury stock	22,500		18		22							40	
Change in the parent's ownership interest due to transactions with non-controlling interests			48									48	
Net change in the year						1,422	(31)	(139)	44	1,295	689	1,984	
Balance, March 31, 2018	267,227,361	¥43,401	¥54,560	¥173,034	¥ (1,393)	¥11,873	¥(29)	¥(8,426)	¥(1,112)	¥2,305	¥6,796	¥278,704	
Net income attributable to owners of the parent				28,446								28,446	
Cash dividends, ¥32 per share				(8,012)								(8,012)	
Purchase of treasury stock	(292,000)				(4)							(4)	
Other			41									41	
Net change in the year						(2,442)	49	111	(239)	(2,519)	(506)	(3,026)	
Balance, March 31, 2019	266,935,361	¥43,401	¥54,602	¥193,468	¥(1,397)	¥9,431	¥20	¥(8,314)	¥(1,351)	¥(214)	¥6,290	¥296,150	

	Thousands of US dollars (Note 1)										
	Accumulated other comprehensive income										Total equity
	Common stock	Capital surplus	Retained earnings	Treasury stock	Net unrealized gain on available-for-sale securities	Deferred gain (loss) on derivatives under hedge accounting	Foreign currency translation adjustments	Defined retirement benefit plans	Total	Non-controlling interests	
Balance, April 1, 2018	\$391,035	\$491,581	\$1,559,010	\$(12,554)	\$106,981	\$(265)	\$(75,922)	\$(10,025)	\$20,767	\$61,238	\$2,511,079
Net income attributable to owners of the parent			256,297								256,297
Cash dividends, \$0.29 per share			(72,190)								(72,190)
Purchase of treasury stock				(36)							(36)
Other		377									377
Net change in the year					(22,005)	448	1,008	(2,155)	(22,703)	(4,560)	(27,264)
Balance, March 31, 2019	\$391,035	\$491,959	\$1,743,117	\$(12,591)	\$84,975	\$183	\$(74,913)	\$(12,180)	\$(1,935)	\$56,677	\$2,668,263

See notes to consolidated financial statements.

Consolidated Statement of Cash Flows

Yokogawa Electric Corporation and its Consolidated Subsidiaries
Year Ended March 31, 2019

	Millions of yen		Thousands of US dollars (Note 1)
	2019	2018	2019
Operating Activities:			
Income before income taxes	¥38,428	¥29,389	\$346,231
Adjustments for:			
Income taxes paid	(11,664)	(9,787)	(105,092)
Depreciation and amortization	16,126	16,689	145,295
Goodwill amortization	880	1,623	7,934
Equity in earnings of affiliates	(1,086)	(869)	(9,790)
Net loss (gain) on disposal of property, plant and equipment	346	(1,865)	3,119
Gain on sales of investment securities and investment in affiliated companies	(716)	(3,691)	(6,458)
Loss on valuation of investment securities		86	
Gain on sale of investment in a subsidiary	(1,576)		(14,207)
Loss on impairment of long-lived assets	113	9,199	1,020
Changes in assets and liabilities:			
Increase in trade notes and accounts receivable	(15,733)	(11,885)	(141,756)
Increase in inventories	(9,017)	(1,521)	(81,244)
Increase in trade notes and accounts payable	1,860	3,753	16,761
Increase in allowance for doubtful accounts	52	3,443	474
Increase (decrease) in liability for retirement benefits	406	(290)	3,662
Other assets and liabilities	940	321	8,470
Other-net	2,051	(2,613)	18,481
Total adjustments	(17,018)	2,591	(153,329)
Net cash provided by operating activities	21,410	31,980	192,902
Investing Activities:			
Net decrease in time deposits	1,568	306	14,131
Purchases of property, plant and equipment	(7,890)	(6,565)	(71,092)
Proceeds from sale of property, plant and equipment	174	3,202	1,573
Acquisitions of intangible assets	(5,593)	(7,018)	(50,399)
Proceeds from sale of investment securities	1,100	4,660	9,918
Purchases of investment securities	(1,392)		(12,550)
Purchases of investments in subsidiaries with changes in consolidation scope	(194)	(1,391)	(1,752)
Proceed from sale of investments in a subsidiary with changes in consolidation scope	8,027		72,326
Other-net	112	158	1,010
Net cash used in investing activities	(4,088)	(6,648)	(36,833)
Forward	¥17,322	¥25,332	\$156,068

(Continued)

Consolidated Statement of Cash Flows

	Millions of yen		Thousands of US dollars (Note 1)
	2019	2018	2019
Forward	¥17,322	¥25,332	\$156,068
Financing Activities:			
Net increase (decrease) in short-term loans payable	2,481	(3,935)	22,361
Repayments of long-term debt	(176)	(10,088)	(1,585)
Cash dividends paid	(8,008)	(7,344)	(72,157)
Cash dividends paid to non-controlling shareholders	(773)	(637)	(6,972)
Other-net	(511)	(423)	(4,608)
Net cash used in financing activities	(6,988)	(22,428)	(62,961)
Foreign Currency Translation Adjustments on Cash and Cash Equivalents	(469)	(631)	(4,225)
Net Increase in Cash and Cash Equivalents	9,864	2,273	88,881
Cash and Cash Equivalents, Beginning of Year	75,836	73,563	683,274
Cash and Cash Equivalents, End of Year	¥85,701	¥75,836	\$772,156

See notes to consolidated financial statements.

Notes to Consolidated Financial Statements

Yokogawa Electric Corporation and its Consolidated Subsidiaries
Year Ended March 31, 2019

1. Basis of Presentation of the Consolidated Financial Statements

The accompanying consolidated financial statements have been prepared in accordance with the provisions set forth in the Japanese Financial Instruments and Exchange Act and its related accounting regulations and in accordance with accounting principles generally accepted in Japan (“Japanese GAAP”), which are different in certain respects as to application and disclosure requirements of the International Financial Reporting Standards.

In preparing these consolidated financial statements, certain reclassifications and rearrangements have been made to the consolidated financial statements issued in Japan in order to present them in a form which is more familiar to readers outside Japan. In addition, certain reclassifications have been made in the 2018 consolidated financial statements to conform to the classifications used in 2019.

The consolidated financial statements are stated in Japanese yen, the currency of the country in which Yokogawa

Electric Corporation (the “Company”) is incorporated and operates. The translations of Japanese yen amounts into US dollar amounts are included solely for the convenience of readers outside Japan and have been made at the rate of ¥110.99 to \$1, the approximate rate of exchange at March 31, 2019. Such translations should not be construed as representations that the Japanese yen amounts could be converted into US dollars at that or any other rate.

Japanese yen figures less than a million yen and U.S. dollars figures less than a thousand dollars are rounded down to the nearest million yen and thousand dollars, except for per share data. As a result, totals in millions of yen and thousands of U.S. dollars may not add up exactly. Japanese yen figures less than a million yen as of March 31, 2018 and for the year then ended are also rounded down to the nearest million yen, which is different from the previous disclosure.

2. Summary of Significant Accounting Policies

● **a. Consolidation**—The consolidated financial statements as of March 31, 2019 include the accounts of the Company and its 108 (109 in 2018) significant subsidiaries (together, the “Group”). Changes include i) purchase of NKS Corporation; ii) establishment of Yokogawa Norge A.S.; iii) sales of Yokogawa Denshikiki Co., Ltd. and Yokogawa Shanghai Instrumentation Co., Ltd.; iv) liquidation of Suzhou Yokogawa Meter Company.

Under the control and influence concept, those companies in which the Company, directly or indirectly, is able to exercise control over operations are fully consolidated, and those companies over which the Group has the ability to exercise significant influence are accounted for by the equity method.

Investments in 1 (1 in 2018) unconsolidated subsidiary and 3 (2 in 2018) affiliated companies are accounted for by the equity method. Yokogawa Shanghai Instrumentation Co., Ltd., which had been a consolidated subsidiary in 2018 was excluded from the scope of consolidation and included in the scope of equity method due to partial sale of its shares.

The excess of the cost of an acquisition over the fair value of the net assets of the acquired subsidiary at the date of acquisition is being amortized on a straight-line basis over a period of up to 20 years. When the amount is not material, the excess of the cost of an acquisition over the fair value of the net assets of the acquired subsidiary is charged to income at the date of acquisition.

All significant intercompany balances and transactions have been eliminated on consolidation. All material unrealized profit included in assets resulting from transactions within the Group is also eliminated.

● **b. Unification of Accounting Policies Applied to Foreign Subsidiaries for the Consolidated Financial Statements**—Under Accounting Standards Board of Japan (the “ASBJ”) Practical Issues Task Force (“PITF”) No. 18, “Practical Solution on Unification of Accounting Policies Applied to Foreign Subsidiaries for the Consolidated Financial Statements,” the accounting policies and procedures applied to a parent company and its subsidiaries for similar transactions and events under similar circumstances should in principle be unified for the preparation of the consolidated financial statements. However, financial statements prepared by foreign subsidiaries in accordance with either International Financial Reporting Standards or generally accepted accounting principles in the United States of America (Financial Accounting Standards Board Accounting Standards Codification—“FASB ASC”) tentatively may be used for the consolidation process, except for the following items which should be adjusted in the consolidation process so that net income is accounted for in accordance with Japanese GAAP unless they are not material: (1) amortization of goodwill; (2) scheduled amortization of actuarial gain or loss of pensions that has been directly recorded in equity through other comprehensive income; (3) expensing capitalized development costs of R&D; and (4) cancellation of the fair value model accounting for property, plant, and equipment and investment properties and incorporation of the cost model of accounting.

● **c. Business Combinations**—Business combinations are accounted for using the purchase method. Acquisition-related costs, such as advisory fees or professional fees are accounted for as expenses in the periods in which the costs are incurred. If the initial accounting for a business combination is incomplete by the end of the reporting period in which the business combination occurs, an acquirer shall report in its financial statements provisional amounts for the items for which the accounting is incomplete. During the measurement period, which shall not exceed one year from the acquisition, the acquirer shall retrospectively adjust the provisional amounts recognized at the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date and that would have affected the measurement of the amounts recognized as of that date. Such adjustments shall be recognized as if the accounting for the business combination had been completed at the acquisition date. The acquirer recognizes the bargain purchase gain in profit or loss immediately on the acquisition date after reassessing and confirming that all of the assets acquired and all of the liabilities assumed have been identified after a review of the procedures used in the purchase price allocation. A parent's ownership interest in a subsidiary might change if the parent purchases or sells ownership interests in its subsidiary. The carrying amount of non-controlling interest is adjusted to reflect the change in the parent's ownership interest in its subsidiary while the parent retains its controlling interest in its subsidiary. Any difference between the fair value of the consideration received or paid and the amount by which the non-controlling interest is adjusted is accounted for as capital surplus as long as the parent retains control over its subsidiary.

● **d. Cash Equivalents**—Cash equivalents are short-term investments that are readily convertible into cash and are exposed to insignificant risk of changes in value. Specifically, cash equivalents represent time deposits that mature within three months of the date of placement.

● **e. Inventories**—Inventories are stated at the lower of cost or the net selling value. Cost is mainly determined by the specific identification method for finished goods and work in process, and by the average method for merchandise, raw materials and supplies.

● **f. Investment Securities**—Investment securities are classified and accounted for, depending on management's intent, as follows:

- i) held-to-maturity debt securities, which are expected to be held to maturity with the positive intent and ability to hold to maturity, are reported at amortized cost; and
- ii) available-for-sale securities, which are not classified as the aforementioned securities, are reported at fair value, with

unrealized gains and losses, net of applicable taxes, reported under accumulated other comprehensive income in a separate component of equity. Costs of securities sold are calculated primarily by moving average method.

Non-marketable available-for-sale securities are stated at cost determined by the moving-average method. For other-than-temporary declines in fair value, investment securities are reduced to net realizable value by a charge to income.

● **g. Property, Plant and Equipment**—Property, plant and equipment are stated at cost less accumulated depreciation and any impairment in value. Depreciation of property, plant and equipment is mainly calculated by the straight-line method over their estimated useful lives.

The estimated useful lives range principally from 3 to 50 years for buildings, and from 4 to 10 years for machinery and equipment. The estimated useful lives for leased assets are the terms of the respective leases.

● **h. Intangible Assets**—Intangible assets consist mainly of software, technology assets, customer-related intangible assets and goodwill. Depreciation of intangible assets is mainly calculated by the straight-line method over their estimated useful lives. The estimated useful lives range principally from 5 to 10 years for software for internal use, from 10 to 15 years for customer-related intangible assets and mainly 7 to 10 years for technology assets.

● **i. Long-lived Assets**—The Group reviews its long-lived assets for impairment whenever events or changes in circumstance indicate the carrying amount of an asset or asset group may not be recoverable. An impairment loss is recognized if the carrying amount of an asset or asset group exceeds the sum of the undiscounted future cash flows expected to result from the continued use and eventual disposition of the asset or asset group. The impairment loss is measured as the amount by which the carrying amount of the asset exceeds its recoverable amount, which is the higher of the discounted cash flows from the continued use and eventual disposition of the asset or the net selling price at disposition.

● **j. Allowance for Doubtful Accounts**—The allowance for doubtful accounts is stated in amounts considered to be appropriate based on the Group's past credit loss experience and an evaluation of potential losses in the receivables outstanding.

● **k. Retirement and Pension Plans**—The Company and most of its consolidated subsidiaries have defined contribution plans, and some other consolidated subsidiaries have defined benefit plans for employees.

The main method used to attribute expected benefits to

each period is the benefit formula basis.

Actuarial gains or losses are amortized on a straight-line basis over a period within the average remaining years of service of the employees from the following year in which they arise.

Prior service cost is amortized on a straight line basis over a period within the average remaining years of service.

● **l. Research and Development Costs**—Research and development costs are charged to income as incurred.

● **m. Bonuses to Directors**—Bonuses to directors are accrued at the end of the year to which such bonuses are attributable.

● **n. Revenue Recognition**—Overseas subsidiaries have adopted International Financial Reporting Standards ("IFRS") No. 15, "Revenue from Contracts with Customers," from the beginning of the year ended March 31, 2019. The effects of applying IFRS No. 15 are immaterial.

● **o. Construction Contracts**—Construction revenue and construction costs are recognized by the percentage-of-completion method, if the outcome of a construction contract can be estimated reliably. The outcome of a construction contract can be estimated reliably when total construction revenue, total construction costs and the stage of completion of the contract at the balance sheet date can be reliably measured. If the outcome of a construction contract cannot be reliably estimated, the completed-contract method should be applied. When it is probable that the total construction costs will exceed total construction revenue, an estimated loss on the contract should be immediately recognized by providing for a loss on such construction contracts.

● **p. Income Taxes**—The provision for income taxes is computed based on the pretax income included in the consolidated statements of income. The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Deferred taxes are measured by applying currently enacted income tax rates to the temporary differences.

The Company and some domestic subsidiaries file their tax returns under the consolidated corporate tax system, which allows these companies to base tax payments on the combined profits or losses of the parent company and its wholly owned subsidiaries in Japan.

On February 16, 2018, the ASBJ issued ASBJ Statement No. 28, "Partial Amendments to Accounting Standard for Tax Effect Accounting," which requires deferred tax assets and deferred tax liabilities to be classified as investments and other assets

and long-term liabilities, respectively. Deferred tax assets were previously classified as current assets and investments and other assets, and deferred tax liabilities were previously classified as current liabilities and long-term liabilities under the previous accounting standard. The revised accounting standard is effective for annual periods beginning on or after April 1, 2018. The Company retrospectively applied the revised accounting standard effective April 1, 2018, and deferred tax assets of ¥7,579 million and deferred tax liabilities of ¥286 million which were previously classified as current assets and current liabilities, respectively, as of March 31, 2018, have been reclassified as investments and other assets and long-term liabilities, respectively, in the accompanying consolidated balance sheet. Further, total assets decreased by ¥4,510 million due to offsetting deferred tax assets and deferred tax liabilities within one tax paying entity.

Certain information is added to Note 12. Income Taxes as described in note 8 (excluding total amount of valuation allowance) and note 9 of explanatory notes to the "Accounting Standard for Tax Effect Accounting" as prescribed in Paragraphs 3 through 5 of the Partial Amendments to Tax Effect Accounting. However, information for the year ended March 31, 2018 is not presented in accordance with the transitional treatment prescribed in Paragraph 7 of the Partial Amendments to Tax Effect Accounting.

● **q. Foreign Currency Transactions**—Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are translated into Japanese yen at the exchange rate as of that date. The foreign exchange gains and losses from translation are recognized in the consolidated statement of income.

● **r. Foreign Currency Financial Statements**—The balance sheet accounts of the consolidated subsidiaries outside Japan are translated into Japanese yen at the prevailing exchange rate as of the balance sheet date except for equity, which is translated at the historical rate. Differences arising from such translation are shown as "Foreign currency translation adjustments" under accumulated other comprehensive income in a separate component of equity. Revenue and expense accounts of consolidated subsidiaries outside Japan are translated into yen at the average exchange rate.

● **s. Derivatives and Hedging Activities**—The Company and certain consolidated subsidiaries use a variety of derivative financial instruments, including foreign currency forward contracts, currency options, and interest rate swaps, as a means of hedging foreign currency and interest rate risks. The Group does not enter into derivatives for trading or speculative purposes.

Derivative financial instruments and foreign currency

transactions are classified and accounted for as follows: a) All derivatives other than those which qualify for hedge accounting are measured at fair value, and gains or losses are recognized in the consolidated statement of income. b) Derivatives used for hedging purposes, if the derivatives qualify for hedge accounting because of high correlation between the hedging instruments and the hedged items, gains or losses are deferred until maturity of the hedged transactions. These amounts are shown as “Deferred gain on derivative under hedge accounting” under accumulated other comprehensive income in a separate component of equity.

Foreign currency forward contracts are utilized to hedge the foreign currency risk of trade receivables denominated in foreign currencies. If the forward contracts qualify for hedge accounting, these trade receivables are translated at the contracted rates. Interest rate swaps are utilized to hedge the interest rate risk of long-term debt. Those interest rate swaps that qualify for hedge accounting and meet specific matching criteria are not re-measured at market value, but the differential paid or received under the swap agreements is recognized and included in interest expense or income.

● **t. Per Share Information**—Basic net income per share is computed by dividing net income attributable to common shareholders by the weighted-average number of common shares outstanding for the period.

Cash dividends per share presented in the accompanying consolidated statement of income are dividends applicable to the respective years including dividends to be paid after the end of the year.

● **u. New Accounting Pronouncements**—On March 30, 2018, the ASBJ issued ASBJ Statement No. 29, “Accounting Standard for Revenue Recognition” and ASBJ Guidance No. 30, “Implementation Guidance on Accounting Standard for Revenue Recognition.” The core principle of the standard and guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. An entity should recognize revenue in accordance with that core principle by applying the following steps:

- Step 1: Identify the contract(s) with a customer
- Step 2: Identify the performance obligations in the contract
- Step 3: Determine the transaction price
- Step 4: Allocate the transaction price to the performance obligations in the contract
- Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation

The accounting standard and guidance are effective for annual periods beginning on or after April 1, 2021. Earlier application is permitted for annual periods beginning on or after April 1, 2018.

The Company expects to apply the accounting standard and guidance for annual periods beginning on or after April 1, 2020, and is in the process of measuring the effects of applying the accounting standard and guidance in future applicable periods.

IFRS No. 16, “Leases,” was issued by the International Accounting Standards Board on January 13, 2016 and has a mandatory effective date of January 1, 2019. IFRS No. 16 requires a lessee to recognize assets and liabilities for substantially all leases on its balance sheet. Overseas consolidated subsidiaries of the Company expect to apply IFRS No. 16 for annual periods beginning on or after April 1, 2019, and are in the process of measuring the effects of applying the accounting standard in future applicable periods.

3. Investment Securities

Investment securities as of March 31, 2019 and 2018 consisted of the following:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Non-current:			
Equity securities	¥33,316	¥35,671	\$300,177

The cost and aggregate fair values of investment securities at March 31, 2019 and 2018 were as follows:

	Millions of yen			
	Cost	Unrealized gain	Unrealized loss	Fair value
March 31, 2019				
Securities classified as:				
Available-for-sale:				
Equity securities	¥7,946	¥12,871	¥55	¥20,763

March 31, 2018				
Securities classified as:				
Available-for-sale:				
Equity securities	¥8,190	¥15,881	¥0	¥24,072

	Thousands of US dollars			
	Cost	Unrealized gain	Unrealized loss	Fair value
March 31, 2019				
Securities classified as:				
Available-for-sale:				
Equity securities	\$71,598	\$115,974	\$498	\$187,073

The information for available-for-sale securities sold during the years ended March 31, 2019 and 2018 was as follows:

	Millions of yen		
	Proceeds	Realized gain	Realized loss
2019			
Available-for-sale:			
Equity securities	¥1,102	¥718	¥(2)

	Millions of yen		
	Proceeds	Realized gain	Realized loss
2018			
Available-for-sale:			
Equity securities	¥4,663	¥3,731	¥(39)

	Thousands of US dollars		
	Proceeds	Realized gain	Realized loss
2019			
Available-for-sale:			
Equity securities	\$9,937	\$6,477	\$(18)

Impairment losses are recognized for marketable available-for-sale securities if declines in fair value are 50% or more. If declines in fair value are 30% to 50%, impairment losses may be recognized for amount deemed to be irrecoverable considering the declines are other-than-temporal. Impairment losses for non-marketable available-for-sale securities may be recognized for amount deemed to be irrecoverable if declines in fair value are 30% to 50% considering the declines are other-than-temporal.

The impairment losses on available-for-sale equity securities for the years ended March 31, 2019 and 2018, were ¥176 million (US\$1,590 thousand) and ¥86 million, respectively.

4. Transfer of Receivables

The Company and certain consolidated subsidiaries transferred their trade notes and accounts receivable-trade before maturity based on an asset transfer agreement. The balance of those receivables whose settlement date had not been reached as of March 31, 2019 and 2018 was as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Notes and accounts receivable-trade		¥13,325	

5. Inventories

Inventories at March 31, 2019 and 2018 consisted of the following:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Merchandise and finished goods	¥13,092	¥12,475	\$117,962
Work in process	9,126	8,573	82,227
Raw materials and supplies	14,622	11,206	131,745
Total	¥36,841	¥32,255	\$331,935

6. Expected Loss on Construction Contracts

The Group recognizes an expected loss on construction contracts when it is probable that total contract costs will exceed total contract revenue. The inventory and the expected loss on construction contracts are not offset but are separately presented in the consolidated balance sheet.

The balance of inventories relating to the expected loss on construction contracts for the years ended March 31, 2019 and 2018 was as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Merchandise and finished goods	¥72	¥371	\$652
Work in process	2,216	1,700	19,970
Total	¥2,289	¥2,072	\$20,623

7. Property, Plant and Equipment

Accumulated depreciation on property, plant and equipment as of March 31, 2019 and 2018 was ¥132,166 million (US\$1,190,800 thousand) and ¥138,281 million, respectively.

8. Long-lived Assets

The Group reviewed its long-lived assets for impairment as of the years ended March 31, 2019 and 2018. Impairment losses for 2019 are not disclosed because the amounts are immaterial. For 2018, impairment losses of ¥9,199 million were recognized.

The main components of loss on impairment of long-lived assets for the year ended March 31, 2018 were as follows:

Location	Use	Category	Millions of yen
			Impairment loss
United Kingdom	Business assets	Goodwill	¥7,050
		Tools, furniture and fixtures	118
		Software	171
United States and Canada	Business assets	Machinery	50
		Software	98
		Goodwill	1,103
		Other intangible assets	444
Shinagawa-ku, Tokyo	Asset planned to be sold	Land	164
		Total	¥9,199

The Group's business assets are grouped according to management accounting classification. Assets planned to be sold are valued on the basis of individual assets.

The book value of business assets (goodwill, etc) arising at the time of acquisition of shares of the UK- based subsidiary, KBC Advanced Technologies Limited and the US- based subsidiary, Industrial Evolution, Inc., have been reduced to their respective recoverable amounts as the business results of these companies fell below initially forecasted business plans due to changes in their business environments. The differences between the book values and recoverable amounts have been recorded as impairment losses.

Following the Company's decision to dispose of the asset, the asset planned to be sold was reduced to its recoverable amount. The difference between its book value and the recoverable amount was recorded as impairment loss.

Business assets and assets planned to be sold are measured at their recoverable amounts, which are net selling prices at disposition for assets planned to be sold.

9. Short-term Loans and Long-term Debt

Short-term bank loans at March 31, 2019 and 2018 included bank overdrafts. The annual average interest rates on the short-term bank loans were 3.646% and 0.562% for the years ended March 31, 2019 and 2018, respectively.

Long-term debt as of March 31, 2019 and 2018 consisted of the following:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Loans from banks and other financial institutions	¥28,934	¥29,112	\$260,698
Obligations under finance leases	474	731	4,277
Total	29,409	29,843	264,975
Less: Current portion	10,537	493	94,940
Long-term debt, less current portion	¥18,872	¥29,349	\$170,035

Annual maturities of long-term loans (excluding finance leases) from banks and other financial institutions, at March 31, 2019 were as follows:

Year ending March 31	Millions of yen	Thousands of US dollars
2020	¥10,264	\$92,476
2021	14,590	131,461
2022	4,080	36,760
2023	Nil	Nil
2024 and thereafter	Nil	Nil
Total	¥28,934	\$260,698

The annual average interest rate on long-term loans (excluding current portion) from banks was (0.002) % for the year ended March 31, 2019.

Collateral and secured debt at March 31, 2019 and 2018 were as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Collateral:			
Deposits	¥14	¥54	\$131
Investment securities	4	5	39
Assets in consolidated subsidiaries outside Japan*	7,904	6,904	71,214
Total	¥7,923	¥6,965	\$71,385

*“Assets in consolidated subsidiaries outside Japan” represents the aggregate amount of accounts receivable and other assets of such subsidiaries.

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Secured debt:			
Trade notes and accounts payable	¥13	¥14	\$117

The Group's interest-bearing debt includes financial covenants which require the Company to maintain certain levels of equity and income on a consolidated basis. The balance of such debt as of March 31, 2019 and 2018 was ¥24,416 million (US\$219,990 thousand).

10. Retirement and Pension Plans

The Company and most of its consolidated subsidiaries have defined contribution plans, while some other subsidiaries have defined benefit plans. In certain circumstances, additional payments are made upon the retirement of employees.

A consolidated subsidiary participated in a multi-employer pension fund as a pension plan for its employees.

The simplified method is used to calculate defined benefit obligation for certain consolidated subsidiaries.

a) The changes in defined benefit obligation for the years ended March 31, 2019 and 2018, were as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Balance at beginning of year	¥10,983	¥10,733	\$98,955
Current service cost	738	656	6,650
Interest cost	270	276	2,436
Actuarial gain	(47)	(191)	(430)
Recognized prior service cost	57		514
Benefits paid	(763)	(646)	(6,882)
Increase due to acquisition of newly consolidated subsidiaries	566		5,100
Others	32	154	296
Balance at end of year	¥11,836	¥10,983	\$106,640

b) The changes in plan assets for the years ended March 31, 2019 and 2018, were as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Balance at beginning of year	¥7,396	¥6,809	\$66,638
Expected return on plan assets	366	498	3,302
Actuarial loss	(334)	(5)	(3,011)
Contributions from the employer	607	636	5,472
Benefits paid	(562)	(524)	(5,071)
Increase due to acquisition of newly consolidated subsidiaries	369		3,325
Others	63	(17)	575
Balance at end of year	¥7,905	¥7,396	\$71,231

c) Reconciliation between the liability recorded in the consolidated balance sheet and the balances of defined benefit obligation and plan assets as of March 31, 2019 and 2018, was as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Funded defined benefit obligation	¥11,836	¥10,983	\$106,640
Plan assets	(7,905)	(7,396)	(71,231)
Total	3,930	3,586	35,409
Net liability for defined benefit obligation	¥3,930	¥3,586	\$35,409

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Liability for retirement benefits	¥4,050	¥3,586	\$36,490
Asset for retirement benefits	(120)		(1,081)
Net liability for defined benefit obligation	¥3,930	¥3,586	\$35,409

d) The components of net periodic benefit costs for the years ended March 31, 2019 and 2018, were as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Service cost	¥738	¥656	\$6,650
Interest cost	270	276	2,436
Expected return on plan assets	(366)	(498)	(3,302)
Amortization of actuarial loss	44	96	397
Amortization of prior service cost	57		514
Others	84	(23)	764
Net periodic benefit costs	¥828	¥507	\$7,461

e) Amounts recognized in other comprehensive income (before income tax effect) in respect of defined retirement benefit plans for the years ended March 31, 2019 and 2018 were as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Actuarial (loss) gain	¥(242)	¥490	\$(2,183)

f) Amounts recognized in accumulated other comprehensive income (before income tax effect) in respect of defined retirement benefit plans as of March 31, 2019 and 2018 were as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Unrecognized actuarial loss	¥(1,708)	¥(1,465)	\$(15,391)

g) Plan assets as of March 31, 2019 and 2018 were as follows:

(1) Components of plan assets
Plan assets:

	2019	2018
Equity investments	31%	42%
Debt investments	35	23
Cash and cash equivalents	26	28
Others	8	7
Total	100%	100%

(2) Method of determining the expected rate of return on plan assets

The expected rate of return on plan assets is determined based on the expected long-term rates of return for the various plan asset components.

h) Assumptions used for the years ended March 31, 2019 and 2018 were as follows:

	2019	2018
Discount rate	2.45%	2.60%
Expected rate of return on plan assets	4.82%	4.58%

i) Payments to defined contribution plans amounted to ¥4,243 million (US\$38,229 thousand) and ¥4,476 million for the years ended March 31, 2019 and 2018, respectively.

11. Equity

Japanese companies are subject to the Companies Act of Japan (the “Companies Act”). The significant provisions in the Companies Act that affect financial and accounting matters are summarized below:

(a) Dividends

Under the Companies Act, companies can pay dividends at any time during the fiscal year in addition to the year-end dividend upon the passing of a resolution at the shareholders’ meeting. For companies that meet certain criteria such as; (1) having a board of directors, (2) having independent auditors, (3) having an audit & supervisory board, and (4) prescribing a one-year term of service for directors (rather than the conventional two-year term) in its articles of incorporation, the board of directors may declare dividends (except for dividends in kind) at any time during the fiscal year if the company has prescribed so in its articles of incorporation.

Semiannual interim dividends may also be paid once a year upon resolution by the board of directors if the articles of incorporation of the company so stipulates. The Companies Act provides certain limitations on the amounts available for dividends or the purchase of treasury stock. The limitation is defined as the amount available for distribution to the shareholders, but the amount of net assets after dividends must be maintained at no less than ¥3 million.

(b) Increases / decreases and transfer of common stock, reserve and surplus

The Companies Act requires that an amount equal to 10% of dividends must be appropriated as a legal reserve (a component of retained earnings) or as additional paid-in capital (a component of capital surplus) depending on the equity account charged upon the payment of such dividends until the total of aggregate amount of legal reserve and additional paid-in capital equals 25% of the common stock. Under the Companies Act, the total amount of additional paid-in capital and legal reserve may be reversed without limitation. The Companies Act also provides that common stock, legal reserve, additional paid-in capital, other capital surplus and retained earnings can be transferred among the accounts under certain conditions upon resolution of the shareholders.

(c) Treasury stock and treasury stock acquisition rights

The Companies Act also provides for companies to purchase treasury stock and dispose of such treasury stock by resolution of the board of directors. The amount of treasury stock purchased cannot exceed the amount available for distribution to the shareholders which is determined by a specific formula. Under the Companies Act, stock acquisition rights are presented as a separate component of equity. The Companies Act also provides that companies can purchase both treasury stock acquisition rights and treasury stock. Such treasury stock acquisition rights are presented as a separate component of equity or deducted directly from stock acquisition rights.

12. Income Taxes

The tax effects of significant temporary differences and tax loss carry-forwards that resulted in deferred tax assets and liabilities at March 31, 2019 and 2018 were as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Deferred tax assets:			
Provision for bonuses	¥2,573	¥2,636	\$23,182
Write-down of inventories	1,715	1,557	15,458
Unrealized profit of inventories	956	1,486	8,613
Impairment loss on investment securities	1,206	1,270	10,868
Impairment loss on investments in consolidated subsidiaries	674	759	6,072
Tax loss carry-forwards (Note b)	23,509	26,939	211,814
Other	8,637	7,872	77,823
Subtotal	39,272	42,522	353,835
Less: Valuation allowance for tax loss carry-forwards (Note b)	(22,280)		(200,740)
Less: Valuation allowance for temporary differences	(5,025)		(45,282)
Total valuation allowance (Note a)	(27,306)	(31,933)	(246,023)
Total	¥11,966	¥10,588	\$107,811
Deferred tax liabilities:			
Net realized gain on available-for-sale securities	¥(3,319)	¥(3,980)	\$(29,907)
Undistributed earnings of consolidated subsidiaries outside Japan	(907)	(1,179)	(8,172)
Property, plant and equipment	(524)	(563)	(4,729)
Intangible assets recognized on business combination	(1,144)	(1,507)	(10,315)
Other	(1,377)	(1,055)	(12,410)
Total	¥(7,273)	¥(8,285)	\$(65,535)
Net deferred tax assets	¥4,692	¥2,303	\$42,275

Notes:

- (a) Valuation allowance decreased by ¥4,627 million (US\$41,690 thousand). Major reason for the decrease is a decrease in valuation allowance for tax loss carry-forwards in relation to expiration of tax loss carry-forwards due to maturity.
- (b) The expiration of tax loss carryforwards, the related valuation allowances and the resulting net deferred tax assets as of March 31, 2019 were as follows:

	Millions of yen						
	2019						
	One year or less	After one year through two years	After two years through three years	After three years through four years	After four years through five years	After five years	Total
Deferred tax assets relating to tax loss carry-forwards*	¥7,444	¥5,724	¥3,365	¥1,872	¥541	¥4,561	¥23,509
Less valuation allowance for tax loss carry-forwards	(6,441)	(5,681)	(3,365)	(1,872)	(541)	(4,377)	(22,280)
Net deferred tax assets relating to tax loss carry-forwards	1,003	42				183	1,229

Thousands of US dollars

	2019						
	One year or less	After one year through two years	After two years through three years	After three years through four years	After four years through five years	After five years	Total
Deferred tax assets relating to tax loss carry-forwards*	\$67,078	\$51,573	\$30,326	\$16,867	\$4,875	\$41,094	\$211,814
Less valuation allowance for tax loss carry-forwards	(58,039)	(51,190)	(30,326)	(16,867)	(4,875)	(39,442)	(200,740)
Net deferred tax assets relating to tax loss carry-forwards	9,038	383				1,652	11,073

*Deferred tax assets relating to tax loss carry-forwards were calculated by applying the normal effective statutory tax rate.

A reconciliation between the normal effective statutory tax rate and the actual effective tax rate reflected in the accompanying consolidated statement of income for the years ended March 31, 2019 and 2018 was as follows:

	2019	2018
Normal effective statutory tax rate	30.6%	30.9%
Permanent differences		
Expenses not deductible for income tax purposes	2.3	4.5
Dividend income and other non-taxable income	(0.3)	(0.4)
Goodwill amortization	0.9	2.2
Loss on impairment of goodwill		8.6
Changes in valuation allowance	(3.8)	(17.7)
Lower income tax rates applicable to certain consolidated subsidiaries outside Japan	(9.4)	(12.3)
Undistributed earnings of consolidated subsidiaries outside Japan	(0.7)	2.7
Consolidation adjustments to gain on sale of investment in a subsidiary	2.6	
Other-net	(0.7)	4.1
Actual effective tax rate	21.5%	22.6%

13. Research and Development Costs

Research and development costs were ¥26,249 million (US\$236,503 thousand) and ¥26,575 million for the years ended March 31, 2019 and 2018, respectively and were included in the cost of sales and selling, general and administrative expenses in the consolidated statement of income.

14. Leases

The Group leases certain machinery, equipment and vehicles, tools, furniture and fixtures, and other assets.

The minimum rental commitments under non-cancelable operating leases at March 31, 2019 and 2018 were as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Due within one year	¥2,494	¥2,624	\$22,478
Due after one year	5,100	6,293	45,955
Total	¥7,595	¥8,918	\$68,433

15. Financial Instruments and Related Disclosures

1. Information regarding financial instruments

a) Group policy on financial instruments

In accordance with the Group's capital expenditure program for the industrial automation and control business and the test and measurement business, the Group uses financial instruments such as bank loans to obtain necessary funding. Cash surpluses are invested in low risk financial assets. Short-term bank loans are used to fund ongoing operations. Derivatives are used to manage exposure to financial risks as described in Note 16 and are not used for speculative purposes.

b) Nature of the financial instruments and risk management

Receivables such as trade notes and trade accounts are exposed to customer credit risk. Those securities are mainly issued by the Group's customers and suppliers, and are managed by regularly monitoring market value and the financial position of the issuers.

Investment securities are exposed to the risk of market price fluctuations. The Group reviews its holdings of these securities, whose issuers are mainly its customers and suppliers, by regularly checking their market value and the financial position of the issuers.

Payment terms of payables such as trade notes and trade accounts are less than one year.

Long-term debt is used for capital expenditures and investments. In order to manage exposure to market risks from fluctuations in interest rates, the Group principally uses fixed-rate contracts; otherwise, interest rate swap contracts are used for variable rate loans.

Foreign currency trade receivables and payables are exposed to market risk resulting from fluctuations in foreign currency exchange rates. Such foreign exchange risk is hedged principally by foreign currency forward contracts and range forward options.

Basic policies on derivative transactions are set out in the Group's internal guidelines. The guidelines prescribe a control policy, designate authorized departments, specify the purpose of the transactions, define the basis for selecting financial institutions, and specify the reporting route.

The fair value of financial instruments is based on the quoted price in an active market. If a quoted price is not available, other valid valuation techniques are used instead.

2. Fair value of financial instruments

The carrying amounts in the consolidated balance sheet, fair value, and unrealized gain (loss) as of March 31, 2019 and 2018 were as detailed below. Financial instruments, whose fair value is extremely difficult to measure, are not included. Please refer to note (b) (below the following tables) on financial instruments whose fair value cannot be reliably determined.

Millions of yen			
	2019		
	Carrying amount	Fair value	Unrealized gain (loss)
Cash and cash equivalents	¥85,701	¥85,701	
Receivables-trade notes and accounts	171,084		
Less: Allowance for doubtful accounts	(4,130)		
	166,953	166,953	
Investment securities	20,763	20,763	
Total	¥273,418	¥273,418	
Short-term loans payable	¥3,568	¥3,568	
Payables-trade notes and accounts	25,130	25,130	
Electronically recorded obligations-operating	9,966	9,966	
Payables-other	13,530	13,530	
Income taxes payable	4,332	4,332	
Long-term debt	29,409	29,322	¥(87)
Total	¥85,938	¥85,851	¥(87)
Derivatives	¥15	¥15	

Millions of yen			
	2018		
	Carrying amount	Fair value	Unrealized gain (loss)
Cash and cash equivalents	¥75,836	¥75,836	
Receivables-trade notes and accounts	153,646		
Less: Allowance for doubtful accounts	(3,534)		
	150,111	150,111	
Investment securities	24,072	24,072	
Total	¥250,020	¥250,020	
Short-term loans payable	¥1,363	¥1,363	
Payables-trade notes and accounts	25,466	25,466	
Electronically recorded obligations-operating	10,569	10,569	
Payables-other	12,058	12,058	
Income taxes payable	4,947	4,947	
Long-term debt	29,843	29,659	¥(184)
Total	¥84,249	¥84,065	¥(184)
Derivatives	¥(239)	¥(239)	

Thousands of US dollars			
	2019		
	Carrying amount	Fair value	Unrealized gain (loss)
Cash and cash equivalents	\$772,156	\$772,156	
Receivables-trade notes and accounts	1,541,438		
Less: Allowance for doubtful accounts	(37,218)		
	1,504,220	1,504,220	
Investment securities	187,073	187,073	
Total	\$2,463,449	\$2,463,449	
Short-term loans payable	\$32,153	\$32,153	
Payables-trade notes and accounts	226,421	226,421	
Electronically recorded obligations-operating	89,795	89,795	
Payables-other	121,906	121,906	
Income taxes payable	39,037	39,037	
Long-term debt	264,975	264,189	\$(786)
Total	\$774,290	\$773,504	\$(786)
Derivatives	\$143	\$143	

Notes:

(a) Fair value measurement of financial instruments

Cash and cash equivalents, trade notes and accounts receivable:

The carrying values of cash and cash equivalents, trade notes and accounts receivable less an allowance for doubtful accounts, approximate fair value because of their short maturities.

Investment securities:

The fair value of equity instruments is measured at the quoted equity market price, and the fair value of debt instruments is measured at the quoted price obtained from the respective financial institution. Information on the fair value of each class of investment security is included in Note 3.

Short-term loans payable, trade notes and accounts payable, electronically recorded obligations-operating, other payables and income taxes payable:

The carrying values of short-term loans payable, trade notes and accounts payable, electronically recorded obligations-operating, other payables, and income taxes payable approximate fair value because of their short maturities.

Long-term debt:

The fair value of long-term debt is determined by discounting cash flows related to the debt at the Group's assumed corporate borrowing rate. Long-term debt is included in the following accounts in the accompanying consolidated balance sheet: current portion of long-term debt and long-term debt.

Derivatives:

Information on the fair value of derivatives is included in Note 16.

(b) Financial instruments whose fair value cannot be reliably determined

	Carrying amount	
	Millions of yen	Thousands of US dollars
	March 31, 2019	March 31, 2018
Unlisted equity securities	¥21,787	¥19,619
		\$196,298

Unlisted equity securities whose fair value cannot be reliably determined include investments in and advances to unconsolidated subsidiaries and affiliated companies.

Maturity analysis for financial assets and securities with contractual maturities

	Millions of yen		Thousands of US dollars	
	March 31, 2019		March 31, 2019	
	Due in one year or less	Due after one to five years	Due in one year or less	Due after one to five years
Cash and cash equivalents	¥85,701		\$772,156	
Receivables-trade notes and accounts	170,614	¥470	1,537,203	\$4,235
Total	¥256,315	¥470	\$2,309,359	\$4,235

16. Derivatives

Derivative transactions are used to manage foreign exchange risk and the risk of market rate fluctuations that occur in the normal course of business. The Group does not use derivatives for speculative purposes or for highly leveraged transactions.

1. Derivative transactions to which hedge accounting was not applied at March 31, 2019 and 2018

	Millions of yen			
	2019			
	Contract amount			Unrealized gain (loss)
	Total	Due after one year	Fair value	
Forward exchange contracts				
Selling contracts				
US dollar	¥5,595		¥(41)	¥(41)
Others	3,435		(17)	(17)
Buying contracts				
US dollar	15		0	0
Others	54		0	0
Currency swaps	25,773		46	46
Total	¥34,874		¥(11)	¥(11)

	Millions of yen			
	2018			
	Contract amount		Fair value	Unrealized gain (loss)
	Total	Due after one year		
Forward exchange contracts				
Selling contracts				
US dollar	¥5,148		¥69	¥69
Others	3,751		49	49
Buying contracts				
US dollar	4,516		(257)	(257)
Others	74		(0)	(0)
Currency swaps	11,938		(53)	(53)
Total	¥25,428		¥(193)	¥(193)

	Thousands of US dollars			
	2019			
	Contract amount		Fair value	Unrealized gain (loss)
	Total	Due after one year		
Forward exchange contracts				
Selling contracts				
US dollar	\$50,411		\$(372)	\$(372)
Others	30,955		(153)	(153)
Buying contracts				
US dollar	138		0	0
Others	488		2	2
Currency swaps	232,219		421	421
Total	\$314,212		\$(101)	\$(101)

2. Derivative transactions to which hedge accounting was applied at March 31, 2019 and 2018

Millions of yen				
2019				
		Contract amount		Fair value
Hedged item		Total	Due after one year	
Forward exchange contracts				
Buying contracts				
US dollar	Payables	¥4,280		¥27
Interest rate swaps				
Pay fixed/Receive floating	Long-term debt	18,396	8,396	Note (b)

Millions of yen				
2018				
		Contract amount		Fair value
Hedged item		Total	Due after one year	
Forward exchange contracts				
Buying contracts				
US dollar	Payables	¥3,554		¥(46)
Interest rate swaps				
Pay fixed/Receive floating	Long-term debt	18,396	18,396	Note (b)

Thousands of US dollars				
2019				
		Contract amount		
	Hedged item	Total	Due after one year	Fair value
Forward exchange contracts				
Buying contracts				
	US dollar	Payables	\$38,562	\$244
Interest rate swaps				
	Pay fixed/Receive floating	Long-term debt	165,751	75,653
				Note (b)

Notes:

- (a) The above interest rate swaps which qualify for hedge accounting and meet specific matching criteria are not re-measured at market value, but the differential paid or received under the swap agreements is recognized and included in interest expense or income.
- (b) The fair value of such interest rate swaps is included in that of hedged items disclosed in Note 15.

The fair value of derivative transactions is measured at the quoted price obtained from the respective financial institution. The contract or notional amounts of the derivatives shown in the above table do not represent the amounts exchanged by the parties and are not a measure of the Group's exposure to credit or market risk.

Currency options are zero cost options.

17. Commitment Line Agreements

The Company has commitment line agreements with financial institutions in order to obtain funds for stable and efficient operation.

The commitment line of credit as of March 31, 2019 and 2018 was as follows:

Millions of yen			Thousands of US dollars
	2019	2018	2019
Total commitment line of credit	¥45,000	¥45,000	\$405,441
Outstanding borrowings	Nil	Nil	Nil
Unused credit line	¥45,000	¥45,000	\$405,441

18. Other Notes to Consolidated Statement of Income

1. Provision for contract loss

The following provision for contract loss was included in the cost of sales in the consolidated statement of income:

Millions of yen			Thousands of US dollars
	2019	2018	2019
Provision for contract loss	¥2,308	¥1,505	\$20,798

2. Selling, general and administrative expenses

The major components of selling, general and administrative expenses were as follows:

Millions of yen			Thousands of US dollars
	2019	2018	2019
Salaries	¥42,092	¥42,471	\$379,249
Net periodic retirement benefit costs	4,171	3,677	37,587
Provision for bonuses	5,380	4,739	48,473
Allowance for doubtful accounts	(460)	3,605	(4,149)
Research and development costs	25,990	26,267	234,168

3. Net (loss) gain on disposal of property, plant and equipment

The net (loss) gain on disposal of property, plant and equipment was as follows:

Millions of yen			Thousands of US dollars
	2019	2018	2019
Buildings and structures	¥(322)	¥63	\$(2,904)
Machinery, equipment and vehicles	2	(27)	25
Tools, furniture and fixtures	(9)	(10)	(84)
Land	(8)	1,834	(72)
Other intangible assets	(9)	5	(83)
Total	¥(346)	¥1,865	\$(3,119)

19. Other Comprehensive Income (Loss)

The components of other comprehensive income (loss) for the years ended March 31, 2019 and 2018 were as follows:

	Millions of yen		Thousands of US dollars
	2019	2018	2019
Net unrealized (loss) gain on available-for-sale securities:			
(Losses) gains arising during the year	¥(2,187)	¥5,774	\$(19,711)
Reclassification adjustments to profit or loss	(936)	(3,608)	(8,438)
Amount before income tax effect	(3,124)	2,166	(28,150)
Income tax effect	675	(768)	6,084
Total	¥(2,449)	¥1,398	\$(22,065)
Deferred gain (loss) on derivatives under hedge accounting:			
Gains arising during the year	¥96	¥554	\$872
Reclassification adjustments to profit or loss	(30)	(596)	(274)
Amount before income tax effect	66	(42)	598
Income tax effect	(16)	10	(149)
Total	¥49	¥(31)	\$448
Defined retirement benefit plans:			
Adjustments arising during the year	¥(143)	¥586	\$(1,294)
Reclassification adjustments to profit or loss	(98)	(96)	(889)
Amount before income tax effect	(242)	490	(2,183)
Income tax effect	79	(365)	718
Total	¥(162)	¥124	\$(1,464)
Foreign currency translation adjustments:			
Adjustments arising during the year	¥(96)	¥(202)	\$(867)
Reclassification adjustments to profit or loss	143		1,295
Amount before income tax effect	47	(202)	428
Income tax effect	(53)	90	(479)
Total	¥(5)	¥(112)	\$(51)
Share of other comprehensive loss in affiliates:			
Losses arising during the year	¥(85)	¥(27)	\$(766)
Reclassification adjustments to profit or loss	(8)		(76)
Total	¥(93)	¥(27)	\$(842)
Total other comprehensive (loss) income	¥(2,661)	¥1,350	\$(23,976)

20. Per Share Information

Basic net income per share (EPS) for the years ended March 31, 2019 and 2018 was as follows:

	Millions of yen	Thousands of shares	Yen	US dollars
	Net income attributable to owners of the parent	Weighted average shares	EPS	
2019				
Basic EPS				
Net income attributable to common shareholders	¥28,446	267,008	¥106.54	\$0.96
2018				
Basic EPS				
Net income attributable to common shareholders	¥21,481	267,223	¥80.39	\$0.76

Diluted net income per share was not disclosed because there were no dilutive securities in the years ended March 31, 2019 and 2018.

21. Supplemental Cash Flow Information

The Component of assets and liabilities of Yokogawa Denshikiki Co., Ltd., whose shares were sold by business divestiture, and reconciliation between the net sales price of Yokogawa Denshikiki Co., Ltd. and the net cash provided by the sale of Yokogawa Denshikiki Co., Ltd., were as follows:

	Millions of yen	Thousands of US dollars
Current assets	¥9,402	\$84,712
Non-current assets	3,087	27,817
Current liabilities	(7,785)	(70,144)
Long-term liabilities	(32)	(288)
Gain on the sale of subsidiary shares	1,804	16,259
Net sales price	6,476	58,355
Collection of loans	3,568	32,147
Cash and cash equivalent	(2,017)	(18,176)
Net cash provided by the sale of subsidiary shares	¥8,027	\$72,326

22. Subsequent Events

Appropriation of retained earnings

The Board of Directors proposed the following appropriation of retained earnings, at March 31, 2019, which was approved at the general meeting of the shareholders of the Company held on June 25, 2019:

	Millions of yen	Thousands of US dollars
Year-end cash dividends, ¥17.0 (US\$0.15) per share	¥4,537	\$40,885

23. Business Combination

(Business divestiture)
The Company transferred all the shares of Yokogawa Denshikiki Co., Ltd., a consolidated subsidiary of the Company to Higaki Sangyo Kaisha, Ltd. on December 21, 2018.

1. Outline of the business divestiture

- (a) Name of the consolidated subsidiary divested and its business outline
Name: Yokogawa Denshikiki Co., Ltd.
Business outline: Development, manufacturing, and distribution of marine navigation systems, aerospace engine ignition system components, and environmental measurement equipment
- (b) Name of the counterparty of the business divestiture
Higaki Sangyo Kaisha, Ltd.
- (c) Major reason for the business divestiture
Founded in October 1960, Yokogawa Denshikiki has been engaged in such businesses as the development, manufacturing, and distribution of marine navigation systems, aerospace engine ignition system components, and environmental measurement equipment.
Higaki Sangyo Kaisha is engaged in a variety of businesses including the distribution of steel and other shipbuilding materials and the maintenance service of shipyard machinery.
Given the shared interest that the Company and Higaki Sangyo Kaisha have in developing their respective businesses, the Company has decided to transfer all of Yokogawa Denshikiki’s shares to Higaki Sangyo Kaisha.
- (d) Date of the business divestiture
December 21, 2018
- (e) Legal form of the business divestiture
Share transfer in consideration for cash

2. Outline of the accounting treatment

- (a) Amount of gain on the share transfer

	Millions of yen	Thousands of US dollars
Gain on sale of investment in a subsidiary	¥1,804	\$16,259

- (b) Details of balance sheet amount of assets and liabilities of divested business

	Millions of yen	Thousands of US dollars
Current assets	¥9,402	\$84,712
Non-current assets	3,087	27,817
Total assets	¥12,489	\$112,529
Current liabilities	¥7,785	\$70,144
Long-term liabilities	32	288
Total liabilities	¥7,817	\$70,433

- (c) Accounting treatment
The difference between the balance sheet amount and the transferred amount was included in “Net gain on sale of investment in a subsidiary” in “Other Income (Expenses)” in the consolidated statement of income for the year ended March 31, 2019.

3. Name of segment in which the divested business was included

Aviation and other

4. Estimated sales and income of the divested business included in the consolidated statement of income for the year ended March 31, 2019

	Millions of yen	Thousands of US dollars
Net Sales	¥8,266	\$74,484
Operating income	340	3,067

24. Segment Information

Under ASBJ Statement No. 17, “Accounting Standard for Segment Information Disclosures,” and ASBJ Guidance No. 20, “Guidance on Accounting Standard for Segment Information Disclosures,” an entity is required to report financial and descriptive information about its reportable segments. Reportable segments are operating segments or aggregations of operating segments that meet specified criteria. Operating segments are components of an entity about which separate financial information is available and such information is evaluated regularly by the chief operating decision maker in deciding how to allocate resources and in assessing performance. Generally, segment information is required to be reported on the same basis as is used internally for evaluating operating segment performance and deciding how to allocate resources to operating segments.

1. Description of reportable segments

The Group’s reportable segments are those for which separate financial information is available and regular evaluation by the Company’s management is being performed in order to decide how resources are allocated among the Group. The Group operates in three business segments: industrial automation and control, test and measurement, and aviation and other businesses.

The industrial automation and control business offers comprehensive solutions including field instruments such as flow meters, differential pressure/pressure transmitters, and process analyzers; control systems and programmable controllers; various types of software to enhance productivity; and services that minimize plant lifecycle costs.

The test and measurement business offers waveform measuring instruments; optical communications measuring instruments; signal generators; electric voltage, current, and power measuring instruments; LCD drivers; and confocal scanners for observation of live cells.

The aviation and other businesses segment mainly offers cockpit flat-panel displays, engine meters, and other instruments for aviation use; marine navigation equipment such as gyrocompasses and autopilot systems; and meteorological/hydrological monitoring system equipment.

2. Accounting methods for each reportable segment’s sales, income (loss), assets, and other items

The accounting policies for each reportable segment are consistent with those disclosed in Note 2, “Summary of Significant Accounting Policies.”

The aggregate of the income or loss for each reportable segment corresponds to the operating income or loss in the consolidated statement of income.

The assets of a reportable segment consist of receivables-trade notes and trade accounts, inventory, property, plant and equipment, and intangible assets.

3. Information about sales, income (loss), assets and other items

Millions of yen					
2019					
	Reportable segment				Consolidated
	Industrial automation and control	Test and measurement	Aviation and other	Eliminations/Corporate	
Sales to customers	¥364,774	¥22,870	¥16,066		¥403,711
Intersegment sales					
Total sales	¥364,774	¥22,870	¥16,066		¥403,711
Segment income (loss)	¥33,970	¥1,939	¥(1,315)		¥34,594
Segment assets	286,289	14,863	15,971		317,124
Depreciation and amortization	14,871	755	499		16,126
Increase in property, plant and equipment and intangible assets	13,372	1,493	410		15,276
Amortization of goodwill	864	15			880
Goodwill	6,307	301			6,608

Millions of yen					
2018					
	Reportable segment				Consolidated
	Industrial automation and control	Test and measurement	Aviation and other	Eliminations/Corporate	
Sales to customers	¥363,290	¥22,260	¥21,039		¥406,590
Intersegment sales					
Total sales	¥363,290	¥22,260	¥21,039		¥406,590
Segment income (loss)	¥30,397	¥2,533	¥(225)		¥32,705
Segment assets	259,394	13,178	27,851		300,424
Depreciation and amortization	15,035	819	834		16,689
Loss on impairment of long-lived assets	9,199				9,199
Increase in property, plant and equipment and intangible assets	13,556	842	550		14,949
Amortization of goodwill	1,623				1,623
Goodwill	7,246				7,246

Thousands of US dollars

2019				
	Reportable segment			
	Industrial automation and control	Test and measurement	Aviation and other	Eliminations/Corporate
Sales to customers	\$3,286,556	\$206,061	\$144,754	
Intersegment sales				
Total sales	\$3,286,556	\$206,061	\$144,754	
Segment income (loss)	\$306,068	\$17,475	\$ (11,851)	
Segment assets	2,579,415	133,921	143,900	
Depreciation and amortization	133,990	6,808	4,496	
Increase in property, plant and equipment and intangible assets	120,483	13,456	3,699	
Amortization of goodwill	7,791	142		
Goodwill	56,826	2,713		

Note: Disclosure of information about loss on impairment of long-lived assets is omitted for the year ended March 31, 2019 because the amount was immaterial.

4. Information about geographical areas

a. Sales

Millions of yen										
2019										
	Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
Sales	¥128,080	¥72,558	¥47,049	¥13,839	¥34,223	¥18,086	¥31,759	¥49,776	¥8,338	¥403,711

Millions of yen										
2018										
	Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
Sales	¥130,466	¥73,034	¥41,267	¥13,116	¥35,568	¥19,843	¥30,935	¥53,760	¥8,596	¥406,590

Thousands of US dollars										
2019										
	Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
Sales	\$1,153,984	\$653,736	\$423,906	\$124,689	\$308,345	\$162,954	\$286,151	\$448,475	\$75,128	\$3,637,372

Notes:

1. Sales are categorized in each country or area based on the location of end users.
2. The Company reviewed the method of presentation since a system was established to gather precise information considering increased materiality of each location. As a result, sales in “Southeast Asia, Far East,” “China,” and “India” previously included in “Asia” and sales in “Southeast Asia, Far East,” “Europe,” “Russia,” “Middle East, Africa” and “Middle and South America” previously included in “Other” are separately presented for the year ended March 31, 2019. Information for the year ended March 31, 2018 has been retroactively reclassified to conform to the new presentation.

b. Property, plant and equipment

Millions of yen

2019									
Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
¥52,525	¥7,933	¥3,510	¥854	¥6,309	¥74	¥2,669	¥1,091	¥172	¥75,141

Millions of yen

2018									
Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
¥53,258	¥7,574	¥3,887	¥942	¥6,973	¥88	¥2,640	¥1,116	¥248	¥76,731

Thousands of US dollars

2019									
Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
\$473,245	\$71,480	\$31,626	\$7,700	\$56,848	\$669	\$24,051	\$9,833	\$1,556	\$677,012

Note: The Company reviewed the method of presentation and since a system was established to gather precise information considering increased materiality of each location. As a result, property, plant and equipment in “Southeast Asia, Far East,” “China,” and “India” previously included in “Asia,” property, plant and equipment in “Southeast Asia, Far East,” “Europe,” “Russia” and “Middle and South America” previously included in “Other” and property, plant and equipment in “Middle and South America” previously included in “North America” are separately presented as of March 31, 2019. Information as of March 31, 2018 has been retroactively reclassified to conform to the new presentation.

5. Information about major customers

No customer accounts for 10% or more of total sales of the Group.

Deloitte

Deloitte Touche Tohmatsu LLC
Marunouchi Nijubashi Building
3-2-2 Marunouchi, Chiyoda-ku
Tokyo 100-8360
Japan

Tel: +81 (3) 6213 1000
Fax: +81 (3) 6213 1005
www.deloitte.com/jp/4

INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of Yokogawa Electric Corporation:

We have audited the accompanying consolidated balance sheet of Yokogawa Electric Corporation and its consolidated subsidiaries as of March 31, 2019, and the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information, all expressed in Japanese yen.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in Japan, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in Japan. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Yokogawa Electric Corporation and its consolidated subsidiaries as of March 31, 2019, and the consolidated results of their operations and their cash flows for the year then ended in accordance with accounting principles generally accepted in Japan.

Convenience Translation

Our audit also comprehended the translation of Japanese yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made in accordance with the basis stated in Note 1 to the consolidated financial statements. Such U.S. dollar amounts are presented solely for the convenience of readers outside Japan.

Deloitte Touche Tohmatsu LLC

June 25, 2019

Member of
Deloitte Touche Tohmatsu Limited

Corporate Data

- **Corporate Name:**
Yokogawa Electric Corporation

• **President and CEO**
Hitoshi Nara
- **Headquarters:**
2-9-32 Nakacho, Musashino-shi, Tokyo
180-8750, Japan

• **Founded:**
September 1, 1915

• **Incorporated:**
December 1, 1920
- **Paid-in Capital:**
43,410 million yen

• **Number of Employees:**
17,848 (consolidated) 2,574 (non-consolidated)

• **Subsidiaries and Affiliates:**
98 outside Japan, 11 in Japan

Investor Information

- **Number of Shares Authorized:**
600,000,000

• **Number of Shares of Common Stock Issued:**
268,624,510

• **Number of Shareholders:**
14,829
- **Stock Exchange Listing:**
Tokyo Stock Exchange

• **Administrator of the Register of Shareholders:**
Mizuho Trust & Banking Co., Ltd.
1-2-1 Yaesu, Chuo-ku, Tokyo 103-8670, Japan
- **Annual General Meeting of Shareholders:**
The annual general meeting of shareholders of the Company is held in June.

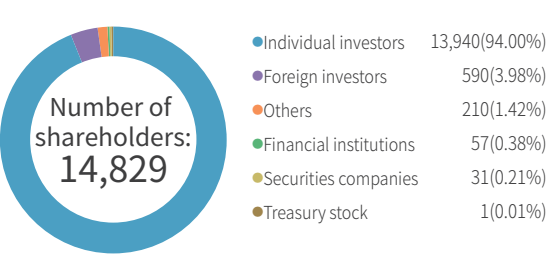
• **Accounting Auditor:**
Deloitte Touche Tohmatsu LLC

Major Shareholders (Top 10)

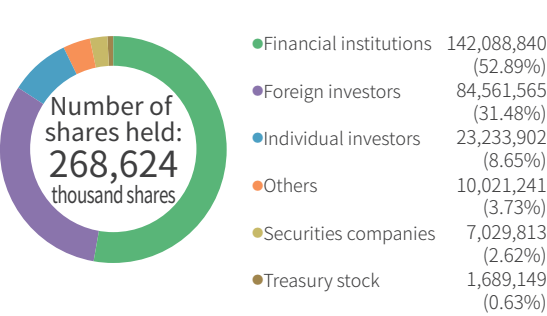
Shareholders	Number of shares held (thousand shares)	Shareholding ratio (%)
Master Trust Bank of Japan Limited (trust account)	40,888	15.3
Japan Trustee Services Bank, Limited (trust account)	17,583	6.6
The Dai-ichi Life Insurance Company, Limited	15,697	5.9
Nippon Life Insurance Company	13,484	5.1
Retirement Benefit Trust in Mizuho Trust & Banking Co., Ltd. (Mizuho Bank, Ltd. account); Trust & Custody Services Bank, Ltd. as a Trustee of Retruct	11,261	4.2
Japan Trustee Services Bank, Limited (trust account 9)	10,237	3.8
State Street Bank and Trust Company 505223	6,990	2.6
Yokogawa Electric Employee Shareholding Program	5,698	2.1
The Bank of New York Mellon (International) Limited 131800	3,958	1.5
Japan Trustee Services Bank, Ltd. (Trust Account 5)	3,926	1.5

Notes: 1. The Company holds 1,689 thousand shares of treasury stock.
2. The shareholding ratio is calculated after deducting treasury stock.

Shareholders by Category



Shareholding by Category



Principal Subsidiaries and Affiliates

North America

United States

Yokogawa Corporation of America

Canada

Yokogawa Canada, Inc.

Mexico

Yokogawa de Mexico, S.A. de C.V.

South America

Brazil

Yokogawa America do Sul Ltda.

Colombia

Yokogawa Colombia S.A.S

Europe

Netherlands

Yokogawa Europe B.V.

Austria

Yokogawa GesmbH, Central East Europe

Belgium

Yokogawa Belgium N.V./S.A.

France

Yokogawa France S.A.S.

Germany

Yokogawa Deutschland GmbH

Hungary

Yokogawa Hungaria Kft.

Italy

Yokogawa Italia S.r.l.

Poland

Yokogawa Polska Sp.zo.o

Spain

Yokogawa Iberia S.A.

Turkey

Yokogawa Turkey Industrial Automation Solutions A.S.

United Kingdom

Yokogawa United Kingdom Limited

Norway

Yokogawa TechInvent AS

CIS

Russia

Yokogawa Electric CIS Ltd.

Kazakhstan

Yokogawa Electric Kazakhstan Ltd.

Ukraine

Yokogawa Electric Ukraine Ltd.

Middle East

Bahrain

Yokogawa Middle East & Africa B.S.C. (c)

Saudi Arabia

Yokogawa Saudi Arabia Ltd.

United Arab Emirates

Yokogawa Engineering Middle East & Africa FZE

Oman

Yokogawa Oman Limited Liability Company

Africa

South Africa

Yokogawa South Africa (Pty) Ltd.

Nigeria

Yokogawa Nigeria Limited

Oceania

Australia

Yokogawa Australia Pty. Ltd.

New Zealand

Yokogawa New Zealand Limited

Asia

Singapore

Yokogawa Electric International Pte. Ltd.

Yokogawa Engineering Asia Pte. Ltd.

Indonesia

P.T. Yokogawa Indonesia

Malaysia

Yokogawa Electric (Malaysia) Sdn. Bhd

Philippines

Yokogawa Philippines Inc.

Thailand

Yokogawa (Thailand) Ltd.

Vietnam

Yokogawa Vietnam Company Ltd.

India

Yokogawa India Ltd.

China

Yokogawa China Investment Co., Ltd.

Korea

Yokogawa Electric Korea Co., Ltd.

Taiwan

Yokogawa Taiwan Corporation

Japan

Yokogawa Electric Corporation

Yokogawa Solution Service Corporation

Yokogawa Test & Measurement Corporation

etc.

*The map shows regions where principal subsidiaries and affiliates are located.

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Yokogawa Electric Corporation

Treasury and IR Department, Corporate Administration Headquarters
2-9-32 Nakacho, Musashino-shi, Tokyo 180-8750, Japan
Phone: +81-422-52-6845 Facsimile: +81-422-55-1202

<https://www.yokogawa.com/>

