Integrated Annual Report 2019



ADVANTEST CORPORATION
Shin Marunouchi Center Bldg.,
1-6-2, Marunouchi, Chiyoda-ku, Tokyo 100-0005
https://www.advantest.com/

CONTENTS

Introduction
03 The Advantest Way
05 Advantest's 65-year History
07 Consolidated Financial and Non-financial Highlights

Overview
09 Message from the CEO
15 Business Model
17 Business Review
21 Product Portfolio

Strategy
23 Our Market and Business Opportunities
27 Overview of the Mid/Long-Term Management Policy
29 Mid-Term Plan
31 Financial Strategy - CFO Message
35 Strategy Feature 1 : Research and Development: Focusing on "Waves"
37 Strategy Feature 2 : Aiming to Develop Talented Human Resources at the Cutting Edge of the Industry
39 Risk Management

Sustainability
41 Important Issues for Sustainability
43 Sustainability Goals
45 Materiality Focus 1 - Environment
47 Materiality Focus 2 - Society
49 Materiality Focus 3 - Governance

Governance
51 Corporate Governance
53 List of Directors
55 Messages from Outside Directors
57 Governance Organization
59 Composition of compensation / Effectiveness evaluation

Information
61 11 Year Financial & Non-Financial Highlights
63 Global Network
65 Corporate Overview / Stock Information

The Advantest Way

The concepts and actions that we share and present to all stakeholders

~ Why do we exist ~

Mission



~ What we want to be ~

Vision



~ What we value most ~

CoreValues



Three Pillars Supporting Our Mission, Vision, and Core Values

ESG for Sustainability

Guiding Principle: Quest for the Essence

Ethical Standards

Disclaimer Concerning Forward-looking Statements
This booklet contains forward-looking statements that are based on Advantest's current plans, estimates, strategies, and presumptions, and all statements not concerning historical facts are forward-looking statements on future performance. These are based on the judgments and assumptions made by the Company's management based on information available at the time of the publication of the booklet.
Fluctuations occur in the semiconductor test system business that is Advantest's principal line of business. Furthermore, significant elements that may impact performance include economic trends, sudden fluctuations in exchange rates and intensification of competition, and the risk of disaster. Due to these risks and uncertainties, the future performance of the Company may significantly differ from the details described in this booklet.
Therefore, the Company does not provide any assurances that the targets set in this booklet will be achieved.

Period and Scope of Report
The period covered by this report is the fiscal year 2018 (from April 1, 2018 to March 31, 2019). However, the periods before and after this period are also mentioned where necessary.
The scope (boundary) of data collection is all consolidated financial results unless stated otherwise.

Introduction

The Advantest Way

The technologies used in semiconductors and electronics are constantly evolving. To ensure consistent quality, the technology for testing and measuring semiconductors and electronics must always remain ahead of device development.

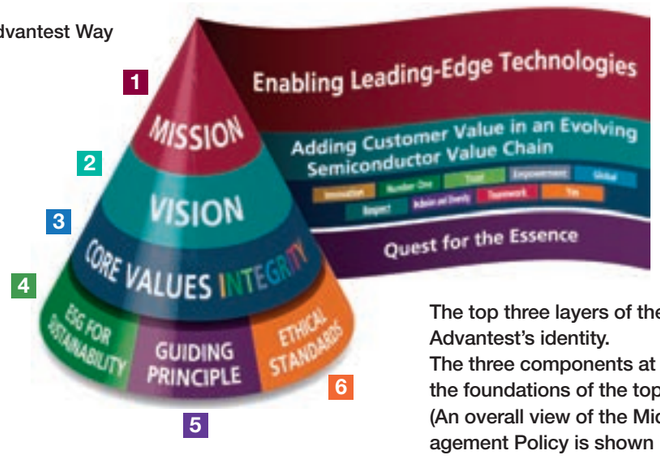
In the 65 years since Advantest was founded, we have continued to contribute to the advancement of society through quality assurance of electronics by developing and providing the cutting-edge measurement technologies required by the industries we serve at each point in time.

The environment surrounding the Company's business is constantly undergoing intense change. The semiconductor industry changes, and technology evolves, at breakneck speed, and the expectations placed on the Company are also being significantly transformed by the acceleration of movements aimed at resolving global social issues.

Taking account of such social trends, the Company reviewed its corporate philosophy from the ground up and began implementing the new Advantest Way in July 2019.

This new Advantest Way is the cornerstone for pulling together the 5,000 employees of the Company working around the globe, and aims to refine the Company's measurement technologies and resolve customers' issues by providing products utilizing these technologies, ensuring that our company is one that customers need. Furthermore, by expanding the reach of our products, we will also contribute to creating a safer and more secure society, which is an underlying issue for our customers. Also, as a result of this, we will realize mid/long-term improvement of the corporate value of our Company.

Structure of the Advantest Way



The top three layers of the cone represent Advantest's identity.
The three components at the base represent the foundations of the top three layers.
(An overall view of the Mid/Long-Term Management Policy is shown in detail on page 27)

1 Mission: Why do we exist Enabling Leading-Edge Technologies

We will continuously improve ourselves so that we can offer products and services that will satisfy our customers worldwide, and contribute to the development of our society through the development of the most advanced technologies.

2 Vision: What we want to be

Adding Customer Value in an Evolving Semiconductor Value Chain
Advantest will further contribute to the semiconductor industry by enriching, expanding, and integrating our test and measurement solutions throughout the entire semiconductor value chain.
⇒P27 Overview of the Mid/Long-Term Management Policy

4 ESG For Sustainability

We have distilled our initiatives for the sustained growth of the Company and society derived from the three perspectives of Environment (E), Social (S), and Governance (G) into seven statements.

* See the Company's website for details.

5 Guiding Principle: Quest for the Essence

We will invariably pursue the sources of phenomena and seek their essence, so that we can find the correct solutions.

3 Core Values: What we value most



- "Integrity" means honesty and truthfulness.
- When you have integrity, it means being open, honest and respectful at all times with all stakeholders.

The value of Integrity can serve as a common thread uniting people of diverse cultures, religions, and viewpoints, and it is Advantest's core value globally. The nine letters of INTEGRITY are the first letters of the following values that we consider important for us.

INNOVATION: is our Lifeblood	● We challenge the status quo. ● We embrace technologies and entrepreneurship to create superior customer value.
NUMBER ONE: is our Aspiration	● We earn our leadership position in our business fields every day. ● We establish an impeccable standard of excellence.
TRUST: is our Foundation	● We are a trusted, collaborative partner. ● We have confidence in each other's capabilities and intentions.
EMPOWERMENT: is our Motivation	● We are empowered to make decisions with an owner's mentality. ● We own Advantest's success.
GLOBAL: is our Reach	● We embrace a world of constant change. ● We are always ready. Anytime. Anywhere.
RESPECT: is our Heart	● We respect different cultures, customs, and laws. ● We never compromise on our ethical standards.
INCLUSION AND DIVERSITY: is our Commitment	● We are proud of and appreciate the range of different backgrounds that our talents represent. ● We believe that strength can come from differences as well as similarities.
TEAMWORK: is our Approach	● We work smart and best utilizing our talents across teams and regions to do extraordinary work. ● We inspire each other, encourage openness, and recognize team results.
YES: is our Attitude	● We deliver on results promised to each other. ● We recognize that impossible is an opinion, and with imagination, we can change the world.

6 Ethical Standards

All officers and employees make a pledge to uphold the 17 items concerning laws, norms, and morals that we defend as members of society and business people.

* See the Company's website for details.

Our history

Advantest's 65-year History

Since 1954, Advantest has provided leading-edge support to the high-tech industry with measurement solutions that enable inspired engineering and promote technological progress.

Our advanced technologies and services meet the needs of customers in diverse sectors, while contributing to the safety, security and comfort of end users around the globe.

At Advantest, we believe that reliability is the key to enhancing corporate value through sustainable growth.

1954-1970

BUILDING business FOUNDATIONS with electronic measurement technology

1954 Takeda Riken Industries is founded with four employees. The company's first product is the Micro Micro Ammeter.

1957 Electronic Counter for measuring frequency becomes a hit product.

1963 The company launches the Digital Multimeter, the first Japanese-made digital voltmeter. The company becomes known as "Takeda Riken, the digital counter company."



Photograph taken at the time the company was founded, with the company's founder, Ikuo Takeda, seated second from the left in the front row



The company's first product, the Micro Micro Ammeter

The history of Advantest began in a 10 square-meter office and a 13-square-meter workshop in a corner of Tokyo. The company's marketing strategy of gaining a first-mover advantage by releasing products utilizing creative technologies in niche markets, along with the growth of the Japanese electronics industry, led to steady growth from the time the company was founded.

1971-1980

Aiming for further growth through expansion into the semiconductor test equipment market

1972 The company launches the first Japanese-made 10 MHz high-speed IC test system.

1979 The company launches a VLSI test system with a test frequency of 100MHz, boasting the highest performance in the world.



Exhibit of the LSI Test System at the Company's technology forum (1975)



The T3380 memory test system with a test frequency of 100MHz

When the semiconductor industry was still in its infancy, the company invested heavily in the development of semiconductor test equipment. Overcoming numerous difficulties such as technical problems and management crises, the company succeeded in developing a test system with world-class performance. It was very well received at ITC, an international test conference, which led to subsequent business success.

1981-2000

Top of the industry and out into the world

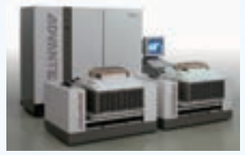
1982 The company establishes a local subsidiary in the United States, and facilities are later established elsewhere around the world.

1985 Company's name is changed to Advantest Corporation.

1997, 1998 The company is ranked first in the "Nikkei Ranking of Excellent Companies."



The development floor of the Gunma R&D Center (1998)



The T5581 memory test system

Backed by a high level of technology, the company's semiconductor test equipment is supported by users worldwide. The company became the world's leading semiconductor test equipment maker by market share in 1985 and was listed on the First Section of the Tokyo Stock Exchange that year. In the 1990s, the semiconductor industry grew rapidly due to the explosive spread of personal computers and the Internet. The company also experienced significant growth in earnings.

2001-2018

Adapting to Changing Times with customers

2003 Acquires Japan Engineering Co., Ltd.

2008 Acquires Credence Systems GmbH.

2011 Acquires major semiconductor test equipment provider Verigy Ltd.

2018 Announces a Mid/Long-Term Management Policy

2019 Acquires semiconductor system level test business from Astronics Corporation

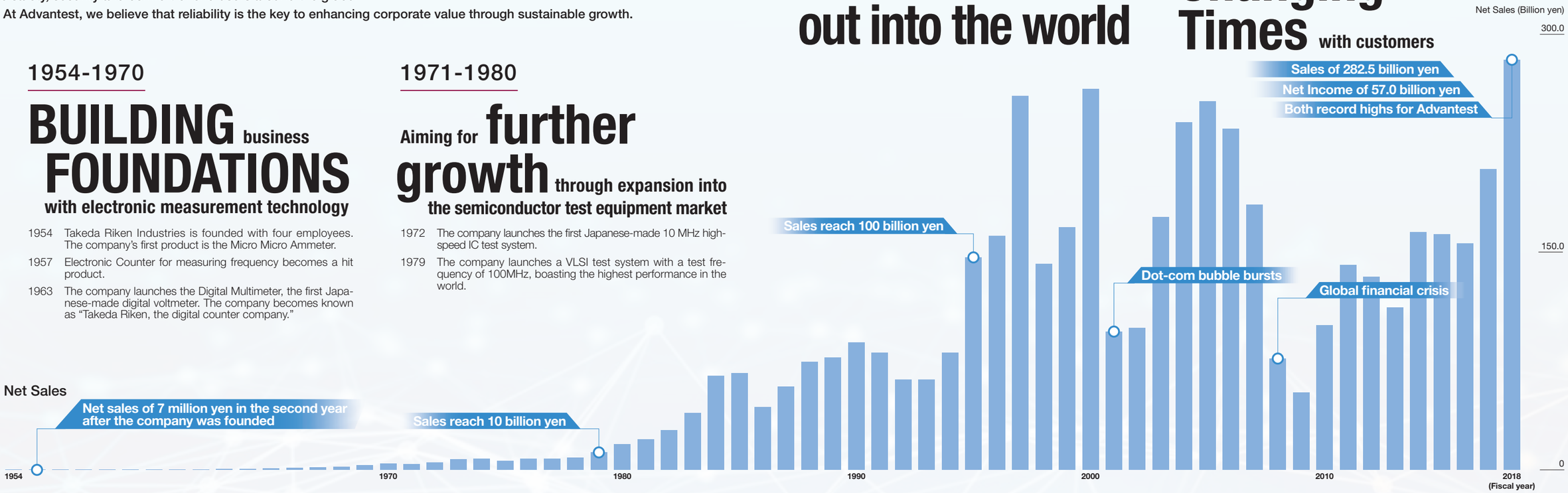


Press conference on the acquisition of Verigy



SoC Test System (V93000)

As the semiconductor industry underwent significant structural changes including specialization in design and manufacturing, the company executed numerous proactive moves such as M&A. In 2011, the company acquired Verigy, a major semiconductor test equipment manufacturer, establishing a broad and robust customer base. In 2018, the Mid/Long-Term Management Policy was announced, with the aim of creating new value in the semiconductor value chain.



Highlights in FY2018

Consolidated Financial and Non-Financial Highlights

(Each fiscal year begins on April 1)

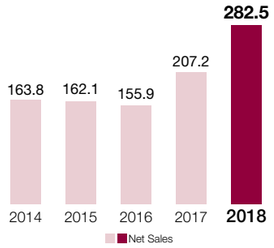
Financial Highlights

Net Sales

(Billion yen)

Record high in FY2018

+36.3% YoY

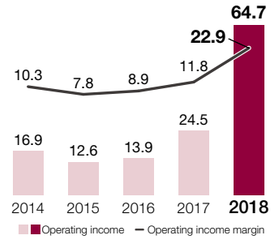


Operating income/operating income margin

(Billion yen/%)

Significant increase achieved due to increased revenue

+164.1% YoY

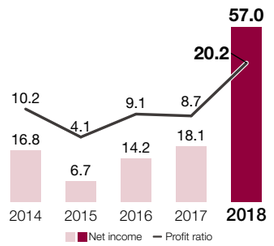


Net income/profit ratio

(Billion yen/%)

Record high in FY2018

+214.8% YoY

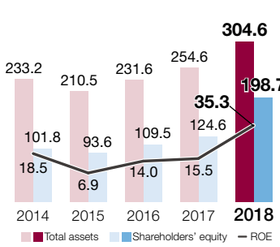


Total assets/shareholders' equity/ROE

(Billion yen/%)

Double-digit ROE for three consecutive years

+19.8% YoY

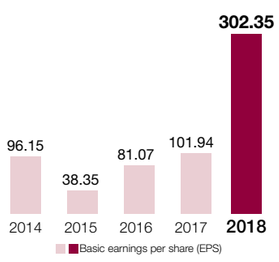


Basic earnings per share (EPS)

(Yen)

Steadily increasing

+196.6% YoY

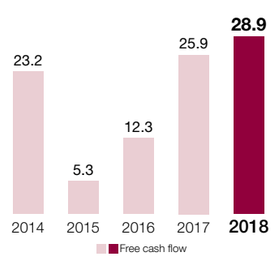


Free cash flow

(Billion yen)

Stable cash generation

+11.3% YoY

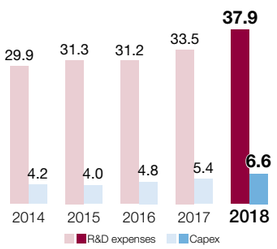


R&D expenses/capex

(Billion yen/Billion yen)

Strategic expansion of future growth

+13.1% YoY

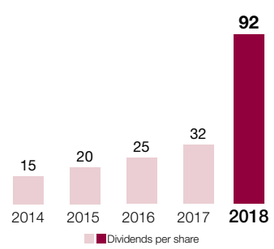


Dividends per share

(Yen)

Growth in income also returned to shareholders

+187.5% YoY



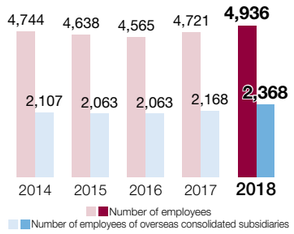
Non-Financial Highlights

Number of employees

(Person)

Advantest employs diverse human resources on principle with the aim of improving corporate value.

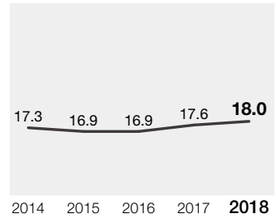
* Number of employee is as of end of fiscal year and includes temporary employees.



Female employees as percentage of total workforce

(%)

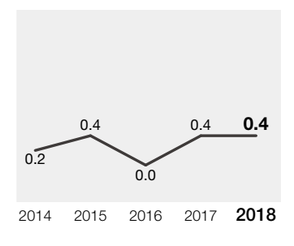
Advantest is undertaking initiatives aimed at gender equality, where both men and women are given equal opportunities and feel motivated to maximize their contribution.



Occurrence rate of occupational accidents (Japan)

(Frequency)

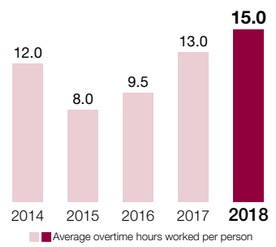
Advantest makes continual efforts to ensure the safety and health of our employees, and raise awareness of health and safety issues while executing business activities.



Average overtime hours worked per person

(Hours/month)

Advantest strives to ensure employees work appropriate hours to protect their health and work-life balance.

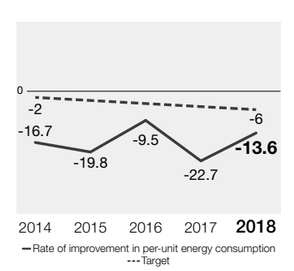


Rate of improvement in per-unit energy consumption (Japan)

(%)

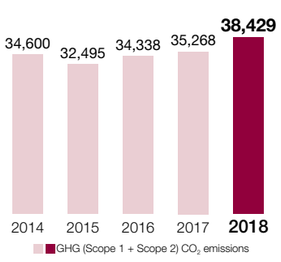
Advantest promotes the efficient use of energy and aims to achieve an average 1% annual reduction for the rate of improvement in per-unit energy consumption.

* Rate of improvement in energy consumption in relation to FY2012 results



GHG (Scale 1 + Scale 2) CO_2 emissions (t-CO_2)

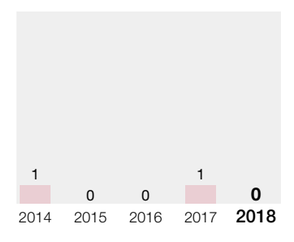
Advantest strives to promote the efficient use of energy and to reduce greenhouse gas emissions.



Number of alleged incidents of dishonest acts

(Number of incidents)

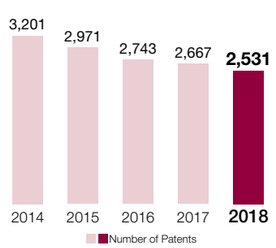
Advantest executes social responsibility without overlooking dishonest acts vital to earn the trust and faith of our stakeholders.



Number of patents

(Patents)

Advantest carries out intellectual property activities aimed at the creation of an appropriate patent portfolio linked to our business, while considering the cost and effect of patent rights.



CEO Message

Message from the CEO

"FY2018 was a good first year for achievement of the Mid/Long-Term Management Plan"



Representative Director, President and CEO

FY2018 Results

Net sales

282.5 billion yen

UP 36.3% year-on-year

Operating income

64.7 billion yen

UP 2.6 times year-on-year

Operating margin

22.9%

UP 11.1 points year-on-year

Net income

57.0 billion yen

UP 3.1 times year-on-year

ROE

35.3%

UP 19.8 points year-on-year

The fiscal year ended March 31, 2019, was an important year for gaining certainty about future growth. We achieved record levels of both sales and net income, and the tailwind provided by the market environment was not the only reason for this success. It was the result of progressively strengthening the SoC tester business in our core semiconductor testing business since the acquisition of Verigy in 2011. At the start of the fiscal year, we announced the first Grand Design (Mid/Long-Term Management Policy) since Advantest was founded. We are now making strong first steps towards achievement of our ten-year goals.

Background of the Grand Design

Why now?

The semiconductor market has reached an inflection point, propelling the Advantest Group as well as the industry into new territory. The volume of data generated by new technologies such as AI, the IoT, and 5G (5th-generation mobile communications systems) has exceeded our expectations, and this explosion of data is predicted to propel the semiconductor market and thereby the semiconductor tester market to a new stage of growth.

Overseas companies have joined the Group through previous M&A deals, and overseas business now accounts for more than 95% of net sales, transforming the Group into an organization made up of members with more diverse backgrounds than at any time since Advantest was founded. We therefore resolved to internally and externally indicate our mid/long-term management direction and goals, and how Advantest will grasp the coming opportunities for growth that accompany change. Our announcement of a Grand Design looking ten years ahead was based on the desire to have our diverse employees work as a team and move together toward the same goal.

During the period until 2027, there will undoubtedly be ups and downs in market conditions and performance due to the nature of the semiconductor market. Prior to the announcement of this Mid/Long-Term Management Policy, there were already signs of trade friction between the United States and China. However, I believe that the evolution and increase in demand for semiconductors used in a variety of aspects of our lives for the improvement of quality of life and the advancement of society cannot be stopped by anyone. In this sense, no matter what happens, semiconductors will be built somewhere by someone, and will need to be tested somewhere by someone. The Grand Design estimates that the growth rate of the semiconductor market over ten years will be the same as the growth rate of global GDP at 4%, and establishes a base scenario that the semiconductor tester market will also grow at a rate of 4%, and a conservative scenario of zero growth.

Message from the CEO

“Advantest’s unwavering corporate mission of ‘Enabling Leading-Edge Technologies’ has remained unchanged since 1989. It is reflected in the vision of ‘Adding Customer Value in an Evolving Semiconductor Value Chain’ depicted in the Grand Design.”

Advantest’s future business model as depicted in the Grand Design

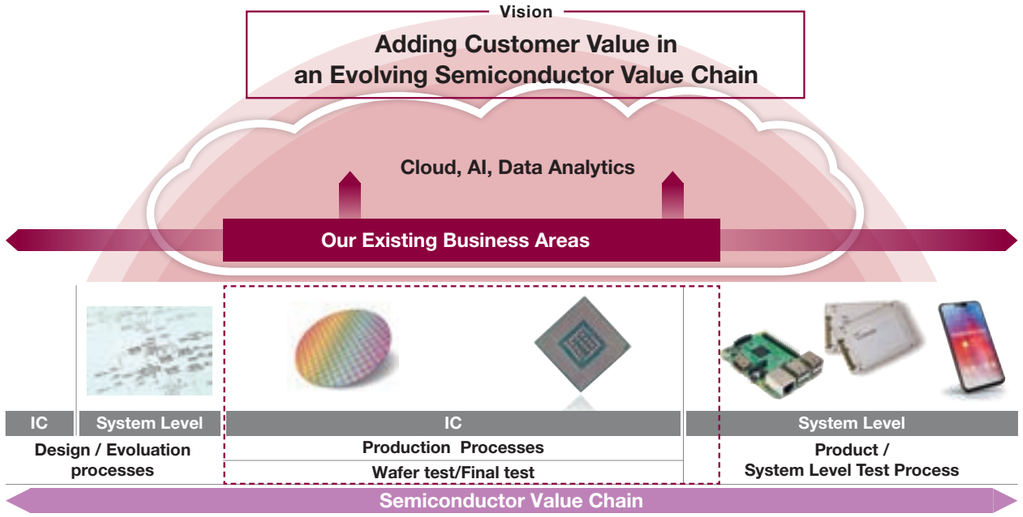
Future challenges

Advantest’s core business has shifted with the times, from the electronic measurement instruments business until the 1980s, to the semiconductor tester business since the 1990s. However, even if the content of our business changes, we have consistently utilized our core measurement technologies based on our management philosophy of contributing to the advancement of society through advanced technology. The vision presented in our Grand Design reaffirms this management philosophy and applies it specifically to the semiconductor tester business, which will be our focus over the next ten years.

Capture of adjacent businesses centered on test solutions

The semiconductor tester business is surrounded by businesses that Advantest has not placed much emphasis upon in the past, and many related businesses that we have not worked on. If we not only delve deeper into our core tester business but also provide our customers with test solutions in adjacent areas and all related businesses, we will be able to further increase customer loyalty to the Company and achieve greater growth.

Semiconductor applications are no longer limited to familiar electronic devices, but are expanding to social infrastructure such as transportation systems, telecommunications, medicine, finance and energy systems. A wide variety of semiconductors now have higher performance, meaning that stringent and difficult tests are needed to ensure their reliability. Not many companies can meet the various needs of customers. Our vision of expanding business in the continually evolving semiconductor value chain also makes it possible to meet the expectations of customers.





Grand Design: Six Commitments

1. Be the No.1 provider of test & measurement solutions
2. Partner with leading-edge customers
3. Develop leading-edge technologies
4. Attract and retain the best talent in the industry
5. Learning organization
6. Improve financial KPI and increase corporate value

Increasing the value of after-sales services

As long as the test business involves both the development of semiconductor tester hardware and the sale of software, ups and downs affected by the capital investment budgets of customers cannot be avoided. Our current business model is operating smoothly, but we would like to move closer to a stable business model that minimizes the impact of ups and downs on performance. The impact of fluctuations can definitely be reduced if we can turn services into subscriptions. Our customers are all enormous companies that are accustomed to treating tester equipment and software as fixed assets. Although we have commenced “Test as a service” initiatives and these have been implemented in some areas, we are prepared for the broader spread and transition to take time. Meanwhile, we also intend to focus on the sale of consumables that support stable revenue. Advantest has many points of contact with customers, so we know what kind of consumables they require, and this is a strength we can leverage.

We have presented six commitments for the realization of our vision. These six are interrelated. In particular, 1, 2 and 3 overlap with our current core competencies (see page 15 of the report for details) and are points that we wish to further strengthen over the next decade. For this, we emphasize a commitment to being a “learning organization.”

Until now, Advantest has had an “in-house” mindset of establishing the necessary knowledge within the company. However, in order to realize the Grand Design, we must move with greater agility to acquire new markets, and respond to trends in technological innovation. We will proceed to create value through partnerships, etc. by working with external companies that possess knowledge about AI, etc. that Advantest does not have. Furthermore, we want our employees to adopt a posture of learning about future businesses through their dealings with customers that possess the latest technology.

Meanwhile, we also recognize that our robust financial base is the reason we were able to overcome the crisis of sales being reduced by one-fifth in the past and survive while many competitors went under, and we affirm that maintaining our financial base is a necessary condition for future business growth.

Four growth strategies aimed at realization of the Grand Design

Strengthening of personnel and organizations supporting business growth

In order to achieve the revenue scenario outlined in the Grand Design, we will execute growth strategies under four themes: “reinforce core businesses, invest strategically,” “seek operational excellence,” “explore value to reach a higher level,” and “pioneer new business fields.”

Message from the CEO

Grand Design Strategies

1. Reinforce core businesses, invest strategically
2. Seek operational excellence
3. Explore value to reach a higher level
4. Pioneer new business fields

“Our priorities for strategic growth investment are as follows: capital investment, development investment, and the greatest investment of all, human resources.”

“Our tester business has reached its current scale after 30 years. We will utilize electronic measurement technology to carefully develop new businesses.”



Strengthening our core semiconductor tester business and capturing adjacent businesses is the main objective of the Grand Design. As part of this, we have fully integrated our tester development organization and processes, which were previously broken up by product and region. The aim is to reduce development time by streamlining the development process.

In fact, Advantest has little need to make large capital investments for increasing production, and investment in development materials is not very large either. Conversely, human resource investment accounts for a large percentage.

Advantest has made personnel cuts on three occasions during the dot-com crash and the global financial crisis in the 2000s. We have had a very cautious approach to personnel increases, and have conducted business with a very lean organization.

However, the SoC tester business that the Company has been strengthening requires, by its nature, development of testers, promotion, and ongoing after-sales customer support. In addition to the wide diversity of SoC products, it is necessary to deal with a large number of locations operated by diverse overseas customers. For this reason, it is essential for us to add system engineers, application engineers and field service personnel. Since this is a business model that does not work without people, we have already bolstered our ranks this fiscal year. Looking ahead, we will focus on securing engineering personnel with different skills than in the past to provide new solutions in areas such as 5G.

Seeking operational excellence is a decision to aim to improve the efficiency and quality of management and internal processes, inevitably through trial and error, because there are almost no precedents for business models in the tester business characterized by large fluctuations in demand. We will proceed with initiatives tailored to Advantest’s unique value creation, such as business management based on ROIC (return on invested capital), improvement of business efficiency through the utilization of IT, and improvement of the working environment.

Exploring value to reach higher is a theme related to the transformation of our business model. We will increase services with greater growth and profitability by promoting the service model, while utilizing knowledge from outside the company to expand our solutions portfolio through the introduction of new technologies such as AI and data analysis. In 2018, we launched an organization called the Applied Research & Venture Team with the aim of obtaining knowledge that will lead to future growth, and established a structure for promoting collaboration with universities and research institutes worldwide.

Pioneering new business fields is a theme that will open up business in areas other than semiconductor testing, such as utilizing Advantest’s electronic measurement technology in medical devices and biotechnology equipment. We have established a department called the New Concept Product Initiative to conduct these initiatives.



* SEMICON Japan is an international trade show for the electronics manufacturing supply chain covering everything from the front-end process to the back-end process of semiconductor manufacturing, and smart applications such as automobiles and IoT devices.

Contribute to a sustainable society through business

Strengthening our foundation for enhancement of long-term corporate value by building up our ESG track record

We believe that our main contribution to society is, above all else, ensuring the safety and reliability of semiconductors that form the foundation of social infrastructure through our tester business. I occasionally bring up the phrase “Tested by Advantest” to communicate to employees that the expansion of our business will make the world a safer and better place.

The Company’s environmental initiatives also have a similar aspect. Advantest’s business activities themselves do not have a very large impact on the environment, and the development and production of tester equipment does not directly pollute the water or air. For this reason, the Group emphasizes indirectly reducing our impact on the environment through the development of products that lead to reduced energy consumption by customers.

In addition, we have also continually taken initiatives related to human flourishing. As mentioned earlier, we have been through some tough periods over the past 20 years in terms of revenue when our net sales, after peaked at 250 billion yen, shrank by one-third and nearly one-fifth. Even under these circumstances, we have supported activities leading to the development and improvement of human resources in the Japanese semiconductor industry as a whole, such as donating to the University of Tokyo VLSI Design and Education Center (VDEC), supporting semiconductor engineer examinations through the Power Device Enabling Association, and providing support for the publication of research by junior technical colleges at SEMICON Japan*. We also hold science classes for elementary school students every year at our Gunma R&D Center and in Sendai, where we have a research facility. It is our desire to help more people find meaning and develop their potential in the semiconductor industry and related areas.

We are continuing to strengthen our corporate governance. Regarding the diversity of our Board of Directors, we have already appointed non-Japanese directors and a female director, and make a point of providing an environment for open and vigorous discussion. Approximately half of the company’s executive officers are non-Japanese nationals. One challenge we face is determining how to increase effectiveness as we establish this structure. In risk management, we also recognize that there are more risks that we need to address when conducting global business (see page 39 for details). We intend to establish a structure for companywide initiatives.

On July 1, 2019, the date when we celebrate the anniversary of the founding of the company, we updated the Advantest Way, which is the foundation of the Group’s corporate culture. We also used English to establish “INTEGRITY” as our new core value to ensure it can be easily shared among the 5,000 members of the Group in Japan and overseas. We will focus on upgrading Advantest’s corporate culture to motivate employees to achieve our Grand Design.

I know that our stakeholders can expect Advantest to create ample value in the future.

Business Model

Advantest's Business Model for Making Continuous Contributions to Customers and Society

The performance of semiconductors is constantly evolving.

Semiconductor test technology enables the efficient visualization of semiconductor performance and reliability by measuring electricity, an invisible phenomenon, which determines performance with a high level of precision.

The value of test technology changes with the times, but the test process has been important since the dawn of the semiconductor market, and Advantest's core business model has remained essentially unchanged.

Long-term Management Policy Grand Design (FY2018-FY2027)
(➡P27 Overview of the Mid/Long-Term Management Policy)

Mid-Term Management Plan (FY2018-FY2020)

External Factors

External Factors

<Changes in the semiconductor market>
- Constant increases in performance, complexity, and manufacturing difficulty
- Expansion of production volumes
- Increase in importance of reliability assurance
- Changes in the power balance among players due to competition and M&A

<Measures to address uncertainty in the global economy and the end-product market>
- Semiconductor manufacturers have become more oriented towards Time to Market
- Heightened geopolitical risks

<Responses to social issues>
- Reduction of environmental impact, response to SDGs
- Compliance with the laws and regulations of each country

(➡P39 Risk Management, P41 Materiality for Enhancing Sustainability)

Our Main Activities

Business processes related to semiconductor test

Design-in & solution development	Customer device evaluation and mass production support	Manufacturing & sales	Support for customers' design changes, coverage of diverse device types and efficient production
Upfront investment: Average development period of new solutions: 2-4 years		Hardware/software sales	Recurring sales

"Enabling Leading-Edge Technologies" The essence of Advantest
- We collect information on medium- to long-term semiconductor technology trends and test needs through discussion with customers
- We strive for an R&D structure that is capable of timely provision of advanced solutions amid increasing technological hurdles

(➡P35 Strategy Feature 1)

Our test know-how provides detailed support for customers' needs
- We offer feedback on design and manufacturing processes through evaluation of performance and inspection of the functions of customers' new devices
- Support for customers' mass production ramps through the provision of comprehensive know-how regarding optimal test flows, development of test programs, and specifications for connections between testers and peripheral devices

Our production system supports fluctuations in semiconductor demand
- Balancing high-quality manufacturing with timely adaptation to trends in customers production plans, we combine in-house production with outsourcing

We offer ongoing support that continually assists customers' growth
- Advantest contributes to maintaining and improving customers' productivity through a global support network spanning 17 countries and regions

Output

(➡P21 Product Portfolio)

Products and services
- Semiconductor testers
- Peripheral devices / consumables
- Mechatronics
- Field Service Solution

Outcome

Created value

Contribution to Customers and Society

Greater safety, security, and comfort for all through our mission, vision, and core values
(➡P3 The Advantest Way)

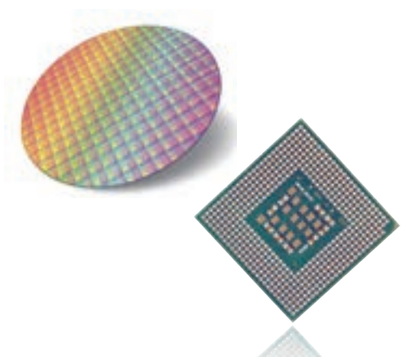
Economic value created in FY2018
- Semiconductor tester sales to customers: Approx. **1,800** units
- Products certified as green products: over **90**%
- Dividends to shareholders: **92** yen per share
- Free cash flow: **28.9** billion yen

Input

Foundation and competitive advantages underlying Advantest's growth

- **Partnerships and protective business moats created by the industry's largest customer base and an amassed wealth of tangible and intangible assets originating from Advantest that are held by customers**
- **Ability to offer comprehensive solutions related to high-precision electronic measurement technology and test with a track record of over 50 years, and a correspondingly rich product portfolio covering all kinds of semiconductor test**
- **Employees are highly motivated to contribute to the success of customers and the betterment of people's lives. Our global headcount is approx. 4,900 (as of the end of FY2018)**
- **A sound financial base, and the R&D activities that this enables from a long-term perspective (R&D expenses: 37.9 billion yen (FY2018 actual))**

Further strengthening of competitiveness through ROIC-based business management and investment efficiency management
(➡P31 Financial Strategy)



Corporate Governance (➡P51 Corporate Governance)

Our Business at a glance

Business Review

Summary of Management Performance in FY2018

Net sales	Operating income	Operating margin
282.5 billion yen	64.7 billion yen	22.9%
UP 36.3% year-on-year	UP 164.1% year-on-year	UP 11.1 points year-on-year

Net income	EPS	ROE
57.0 billion yen	302.35 yen	35.3%
UP 214.8% year-on-year	UP 3.0 times	UP 19.8 points year-on-year

During FY2018, the global economy has so far maintained its growth trajectory overall and demand for performance improvements in electronic end-products such as data servers, smartphones, displays, and car electronics has remained steady, promoting improved performance, reliability and an increase in the production volumes of the semiconductors used in these products. On the other hand, concerns about the future of the global economy have grown since the autumn of 2019 due to the expansion of protectionist trade policies, among other factors. Reflecting trends in the global economy, the sense of a slowdown in data center investment and in smartphones—the markets that have led the growth of semiconductors and related industries for the last few years-has intensified. As a result, major semiconductor manufacturers have cut back on their capital investment plans and moved towards substantial inventory adjustments.

In this business environment, Advantest expanded our market share by demonstrating our strength as the vendor with the most comprehensive product portfolio in the semiconductor test equipment industry, and capturing demand for new products from a broad range of customers. Furthermore, profitability also substantially improved through endeavors to maintain and improve the efficiency of business operations as sales grew.

Trends in the Semiconductor Tester Market in CY2018

Market growth factors

- Greater functionality and complexity of devices due to advances in semiconductor miniaturization
- Bezel less trend of smartphone / TV displays
- Growth of applications that use semiconductors (automobiles, industry)
- Increased capacity and speed of DRAM and NAND flash memory devices
- Continuing trend towards enhancement of semiconductor reliability

Market constraint factors

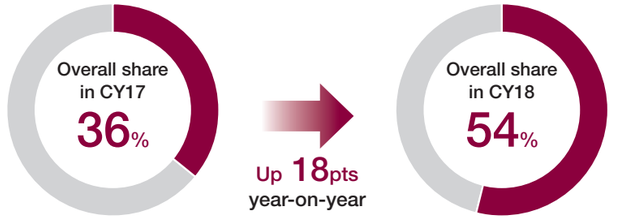
- Commencement of semiconductor inventory adjustments associated with sluggish growth in smartphones shipments and the slowdown in data center investment

During 2018, there were ongoing trends towards better performance and reliability for electronic products, with progress seen in initiatives to increase performance and expand the supply of semiconductors. Reflecting these developments, semiconductor manufacturers have made active efforts to strengthen their testing capabilities so as to be able to handle more complex testing and enhance device reliability. Since the autumn of 2018, semiconductor manufacturers have appeared to adopt a passive stance on capital investment due to concerns about excess inventory, but overall, the size of the semiconductor tester market increased from 2017.

	CY2017 actual	CY2018 actual	Change
SoC tester market	Approx. $2,200M	Approx. $2,550M	Up approx. 15% year-on-year
Memory tester market	Approx. $750M	Approx. $1,150M	Up approx. 50% year-on-year

Fluctuations in Market Share

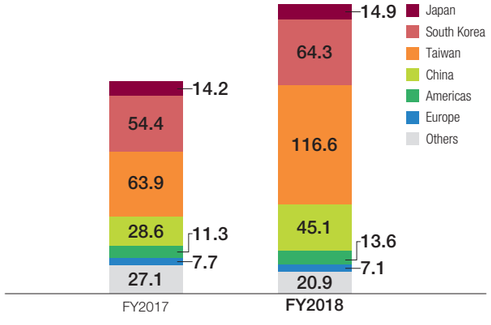
There was intense competition in the semiconductor tester market (⇒ see risk factors on page xx). Advantest's basic approach to competition is to expand our product portfolio and differentiate our quality of service, and as a result of these initiatives we have the broadest customer base in the industry. The increase in demand for testers from many semiconductor manufacturers in 2018 led to a significant increase in Advantest's market share.



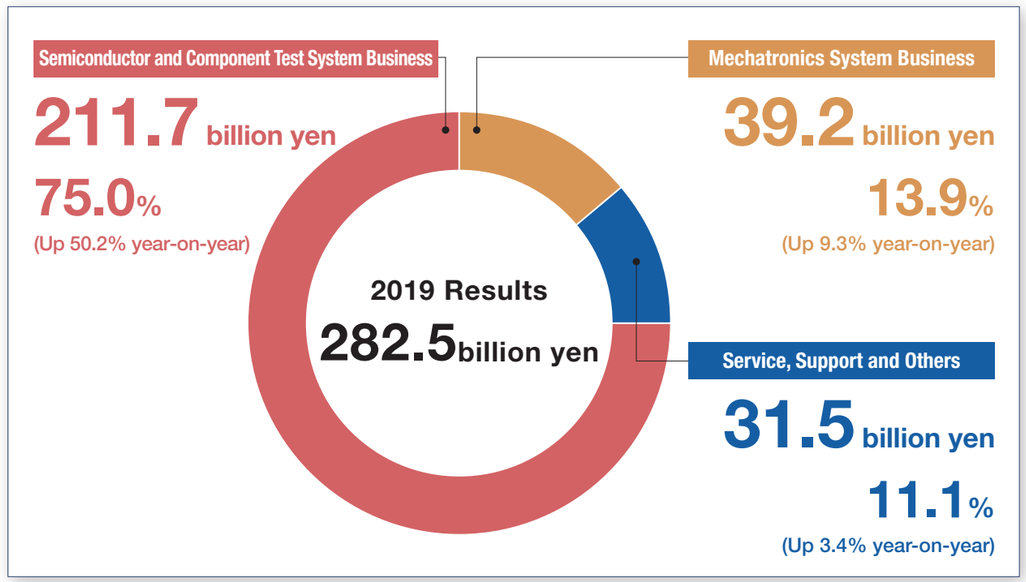
Sales Conditions by Region (by Destination)

At present, many semiconductor manufacturing sites are concentrated in Asian countries due to the horizontal specialization of design and manufacturing in the semiconductor market. Reflecting this industry trend, sales to Asia accounted for a large portion of Advantest's sales in FY2018. In particular, sales increased in Taiwan, China, and South Korea, where there are many large producers of SoC semiconductors.

By Region/Sales (Billion yen)



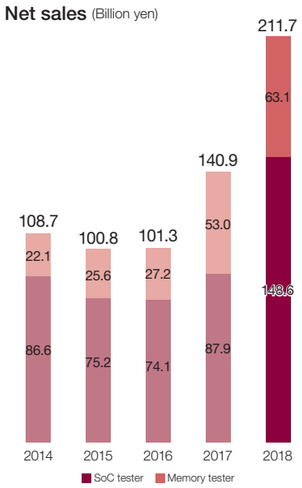
Condition of Business Segments



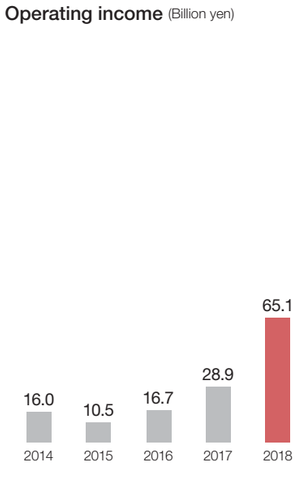
Semiconductor and Component Test System Business

In this segment, demand for SoC test systems grew due to improvements in the performance of application processors, which are key components of smartphones, and the trend towards enhanced test capabilities in line with improvements in the functionality of display driver ICs, including touch sensor integration. Furthermore, although orders received declined from the third quarter onwards due to memory semiconductor inventory adjustments, sales of memory test systems also increased year-on-year, supported by the increased capacity of DRAM and NAND flash memory. As a result, segment income increased significantly.

Net sales (Billion yen)



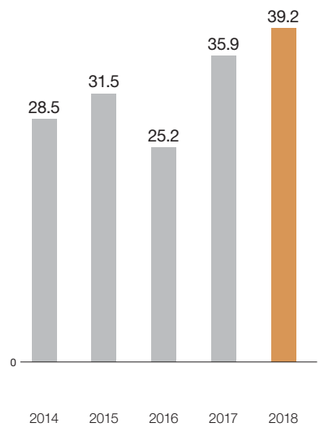
Operating income (Billion yen)



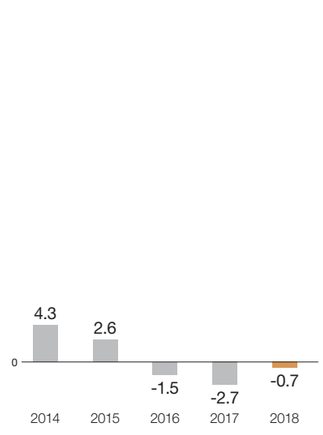
Mechatronics System Business

In this segment, sales of device interface products, which are closely linked to our memory test business, were strong, buoyed by a high level of investment in test equipment by memory semiconductor manufacturers. However, sales softened in our nanotechnology business, which provides measurement instruments for advanced manufacturing processes, owing to the timing of major semiconductor manufacturers' process shrink investment schedules. Furthermore, the segment continued to record a segment loss due to an increase in the cost of sales.

Net sales (Billion yen)



Operating income (Billion yen)

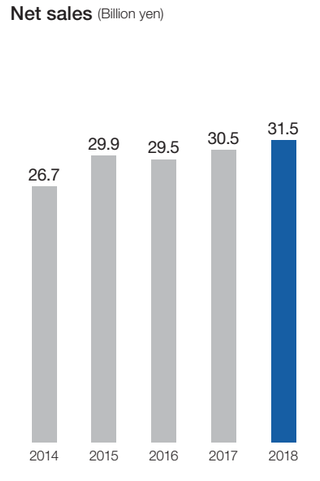


Service, Support and Others

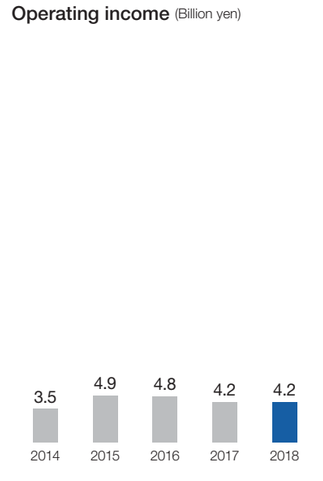
Despite the trend towards inventory adjustments in the semiconductor market, semiconductor manufacturers maintained production at high levels, resulting in stable demand for our maintenance services. As a result, segment income for this division was also stable.

In February 2019, Advantest completed its acquisition of the system level test business of US-based Astronics Corporation for USD 100 million, and the results of that business are recorded in this segment. The impact of the acquisition on results for FY2018 was minor.

Net sales (Billion yen)



Operating income (Billion yen)



Our Products & Services

Product Portfolio

Semiconductor & Component Test System Business

▶ This division provides test systems that automatically perform electrical tests of semiconductors to evaluate quality, performance and reliability. This is the company's main business, which has secured the world's leading market share.

SoC Test Systems

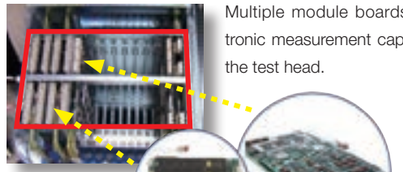
These utilize a modular structure enabling changes in system configuration through board replacement to perform a wide range of tests of diverse SoC devices.

Main target devices

Application processors (AP)	Display driver ICs (DDI)
ICs for communication devices	MCUs and standard logic ICs
High-performance computing (HPC)	Power management ICs (PMIC)
CMOS image sensors	Analog / mixed-signal ICs


V93000 Test System


T2000 Test System


V93000TH

Multiple module boards with separate electronic measurement capabilities are housed in the test head.

By changing the combination of modules, diverse devices can be tested with a single test system.


T6391 Test System

Memory Test Systems

These specialize in testing memory semiconductors and maximize testing efficiency by simultaneously measuring a large number of semiconductors at high speed. Advantest's line-up also includes burn-in systems for simultaneously conducting burn-in tests to identify initial failures of semiconductors.

Main target devices

DRAM	Non-volatile memory


T5503HS2 Memory Test System for High-speed DRAM Test


T5833


T5830 Memory Test System for High-Speed Non-Volatile Memory Test


B6700L Burn-in Test System

Mechatronics System Business

▶ This business deals with semiconductor test system peripherals and devices utilizing nanotechnology for the semiconductor wafer process.

Test Handlers

These rapidly transport semiconductor packages to test systems, and automatically separate defective and non-defective products according to test results. They provide the precise transport positioning that supports the miniaturization of semiconductors, and high-speed test temperature control functionality.


M4871 Test Handler

Device Interfaces

This is a collective term referring to the tools for electrically and mechanically connecting semiconductors to test systems. Demand for these products arises when changing the type of test device or when the device interface itself is subject to wear.


HIFIX

Nanotechnology Products

Semiconductor circuits are written on wafers and measured using electron beams. This contributes to the miniaturization of circuits in advanced semiconductor wafer processes.


F7000 EB (Electron Beam) Lithography System


E3650 MASK MVM-SEM®

Services, Support and Others

Field Services

Engineers worldwide provide support for customer needs ranging from the installation, maintenance and repair of systems to the improvement of operating rates and throughput.

Leasing and Sales of Used Products

We offer the added value that only a tester manufacturer can provide, such as refurbishing used products to the same level as new products, high-quality relocation and launch, and the addition of functions.

System-Level Test

These systems test semiconductor devices on a product and system level. SLT meets new testing demands for increasingly complex electronic devices, and Advantest's testing and measurement solutions expand the overall semiconductor value chain.


MPT3000 SSD Test System


ATS 5030 System-level Test Platform

Leading Edge Products

We offer new innovations in healthcare and other areas by applying the electronic measurement technologies that we have developed to date.


Hadatomo™ Z Photoacoustic Microscope


TAS7500SP Terahertz Analysis System

Our Strategy

Our Market and Business Opportunities

Semiconductors are integrated into innumerable widely-used end products. During the semiconductor test process, test systems pass high-precision electrical signals through devices to test whether they work properly and have the required performance and durability.

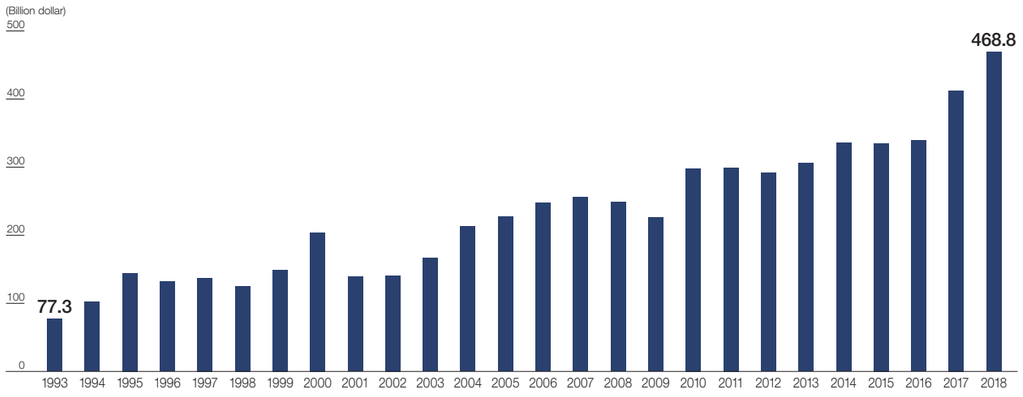


Semiconductors driving social evolution

Semiconductors are integrated into all types of products such as smartphones, computers, home appliances, automobiles, and industrial machinery, and are used in diverse activities ranging from communications and smart cities to social media and games. In 2018, the semiconductor market grew to six times its size 25 years earlier, setting a new record. The semiconductor market is also anticipated to grow significantly in the future with the evolution of technologies such as 5G and ADAS.

Semiconductor growth has been supported by Moore's law and the consequent reduction of chip size, increased speed of operation, and reduced power consumption. In addition, these advances have greatly contributed to progress in the functionality and performance of electronics. In the future, innovative technologies such as EUV lithography (technology for writing circuits using extremely short ultraviolet wavelengths) and 3D layering of circuits will further increase the performance of semiconductors, expanding their applications yet more.

World Semiconductor Market (1993-2018)



(Source: WSTS)

Types of Semiconductors

Semiconductors can be broadly classified into memory devices, for storing data, and system-on-chip devices (SoCs,) which refers to devices other than memory for uses such as computation, communications, data sensing, and audio. Many SoCs incorporate various functions into a single semiconductor. The types of semiconductors and corresponding testers are described below.

Memory Semiconductors

Semiconductors specializing in storing and remembering data.

[Main types]

- **DRAM**
  Capable of high-speed operation and mainly used as the memory of computers and smartphones. While DRAM operates at high speed, data is lost if the power is cut.


T5833

- **Non-volatile memory**
  Used as memory for computers and smartphones due to its ability to retain data even when the power is cut. The most common type of NVM is NAND flash memory, and there are also devices called NOR that are used for storing software, etc.

[Corresponding testers]

T5503HS2, T5830, T5833, B6700, etc.

SoC Semiconductors

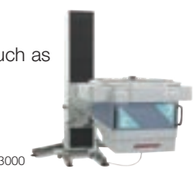
Semiconductors that perform various processing tasks such as computation, communication, data sensing, and audio. The market is divided up by many semiconductor manufacturers for each of the diverse functions available.

[Main types]

- **Application processors (AP)**
  Control the main operations of smartphones.
- **ICs for communication devices**
  A general term for baseband processors and RF transceivers for wireless communication of data.
- **Microprocessors/Microcontrollers (MPU/MCU)**
  Controllers for various devices such as servers, personal computers and automobiles.
- **GPUs**
  Excellent for high-speed graphic processing for games, etc., and also used in AI due to their high computational performance.
- **CMOS image sensors**
  Convert different strengths of light into electrical signals to create images. They are the semiconductors that provide camera functions.
- **Display driver ICs (DDI)**
  Control the displays of devices such as smartphones and televisions.

[Corresponding testers]

V93000, T2000, T6391, etc.


V93000

The Role of Semiconductor Testers

Semiconductor testers breathe life into semiconductors made through a long process of design, simulation, characterization and manufacturing by passing high-precision electrical signals through them to test whether they work and also whether they have the prescribed performance and durability, therefore our business opportunities widely come from design to mass production of semiconductors. This is aimed at not only sorting out good devices from defective ones, but also improving customer value by contributing to their time to market as product cycles grow shorter and volume at launch increases for end-products such as smartphones.

Semiconductor development and production launch phase — **Contribution to Time to Market**

Test supports the design evaluation and volume production ramp of semiconductors by passing electrical signals through the semiconductors to inspect design details and operational performance not visible to the naked eye, and by providing feedback on the test results.

Volume production phase — **Contribution to Time to Volume**

Test leverages customers' production volume with stable yield through high-speed, high-volume test using optimal test flows enabled by semiconductor testers.

Test contributes to production ramps through the timely supply and stable product quality to meet demand.

Improvement phase — **Contribution to Time to Quality**

Test contributes to improvements in volume production processes and reduction of the cost of products through test solutions that support the improvement of efficiency in the creation of test programs to match the diversification of semiconductor device types and the design details as customers' businesses expand.



Drivers of the Semiconductor Tester Business

Semiconductor tester business opportunities are mainly driven by the following factors.

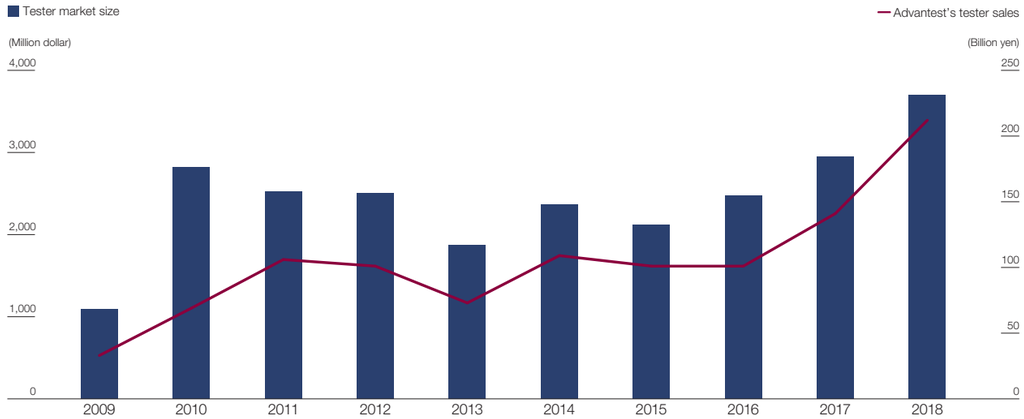
1. Expansion of semiconductor production volume (capacity buys)
2. Evolution of semiconductor technology/ migration to next-generation standards (technology buys)
3. Digital Transformation (expand to car electronics, IoT)
4. Increasing demand on reliability of semiconductor as a part of social infrastructure

For some time, the semiconductor tester business has been driven by "technology buys" associated with the increase in test time resulting from the addition of new functions and the increase in complexity of devices based on changes in technology, and "capacity buys" for expanding production volume.

Recently, new business drivers have included increases resulting from new demand arising from the expansion of semiconductor applications, and increases in test time resulting from heightened reliability requirements as the biggest demand for semiconductors shifts from consumer electronics to social infrastructure.

Although the tester business was cyclical due to fluctuations in semiconductor demand, the expansion of the scope of demand is expected to transform the structure of the market to one of cyclical growth, growing in the medium- to long-term while being cyclical.

Tester Markets and Sales



(Source: VLSI research, Advantest)

Our strategy

Overview of the Mid/Long-Term Management Policy (FY2018-FY2027)

We announced our Mid/Long-Term Management Policy in April 2018. This comprises our Grand Design (next ten years) and the Mid-Term Plan (initial three years). The progress of the digital transformation, which gives semiconductors a greater role in society, is dramatically changing Advantest's business environment, and we expect demand for semiconductors will increase in the future. The Management Policy was established to ensure that we capture these business opportunities.

Business Environment (Megatrends and Changes in the Semiconductor Test Market)

Rapid population growth, urbanization, and globalization, in addition to climate change and security issues, are giving rise to serious social problems today. The "digital revolution" uses semiconductors to solve these social problems, and is driven by the spread and penetration of active technology and processing of so-called Big Data. As shown in Figure 2, the volume of data creation is expected to grow at an accelerating rate in the future, and this data explosion will open new vistas for the semiconductor industry.

In the past, demand for semiconductors was driven by demand for end products such as mainframe computers, digital cameras, personal computers, and smartphones. However, future demand for semiconductors will mainly be supported by data itself, rather than hardware terminals. As semiconductors handling data–a source of value—become a form of social infrastructure spreading through and penetrating the whole world, higher reliability will be required especially for data centers, cars, and the people who depend on them, and as a result, semiconductors will become more sophisticated and more complex with larger capacities, which will require reinforcement of testing (more test items and longer test times).

In short, the rapidly growing volume of data due to the data explosion will drive semiconductor production volumes, and along with the need for higher reliability due to semiconductors becoming more complex and sophisticated, this will lead to further growth of semiconductor market.

Figure 1

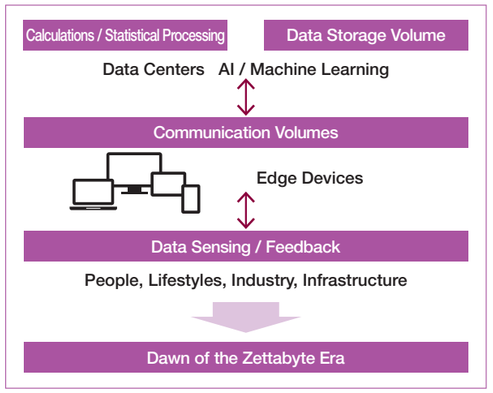
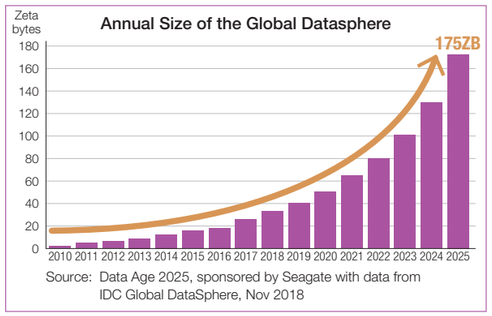


Figure 2

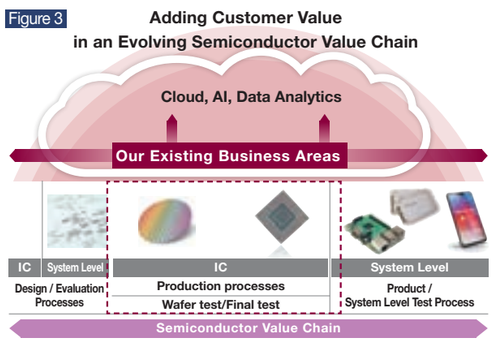


Source: Data Age 2025, sponsored by Seagate with data from IDC Global DataSphere, Nov 2018

Grand Design

Our Grand Design is a ten-year management policy for ensuring that the above megatrends can be linked to acquiring business opportunities. Its vision statement is "Adding Customer Value in an Evolving Semiconductor Value Chain." Currently, our business domain is testers and test environments for the semiconductor production test market, as shown in Figure 3. We will grow our business by expanding into peripheral markets such as upstream design and evaluation processes and downstream product and system-level processes.

Figure 3



We have established six "commitments" as strategic guidelines for realizing this vision.

1. Be the No.1 provider of test & measurement solutions
2. Partner with leading-edge customers
3. Develop leading-edge technologies
4. Attract and retain the best talent in the industry
5. Learning organization
6. Improve financial KPI and increase corporate value

We have also formulated four strategies for the achievement of the vision.

1. **Reinforce Core Business, Invest Strategically**
   - We will focus investment on our core business and peripheral markets by riding the new phase (megatrends) of semiconductor test demand.
2. **Seek Operational Excellence**
   - We will seek to improve the efficiency and quality of all internal processes centered on R&D and production, etc.
3. **Explore Value to Reach a Higher Level**
   - We will strengthen the expansion of test solutions, broaden our solutions by adopting AI and new data analysis methods, and seek a profitable service business model.
4. **Pioneer New Business Fields**
   - We will strive to develop new businesses utilizing our measurement technologies.

Growth Scenarios

We think the semiconductor market will grow at a rate of 4% per year over the next 10 years based on various market surveys. We also assume that the size of the semiconductor tester market will similarly grow at a rate of 4% per year, and that we can reach net sales of 400 billion yen per year a decade from now in FY 2027, considering the strengthening and expansion of our core business as well as the acquisition of peripheral markets by means including M&A. This is our base scenario. In addition, we have considered a conservative case in which we think we can aim for sales of 300 billion yen even if the tester market does not grow, although the semiconductor market does. In either case, we aim to expand our market share in the tester market by one point every year by focusing on future growth fields and strengthening partnerships with customers. (Figure 4)

The above is our long-term Grand Design forecasting the next ten years. Our Mid-Term Plan details concrete plans that apply to the initial three years, starting in 2018. This is introduced on the following page.

Figure 4

Sales Scenarios

FY2017 (actual)	Billion yen
Tester Market	363.0
Advantest Share	36%
Sales	207.2

Conservative Case

Tester market growth rate = 0%

FY2027 (Forecast)	Billion yen
Tester Market	380.0
Advantest Share	46%
Existing Business	240.0
New Business	60.0
Sales	300.0

Base Scenario

Tester market growth rate = 4%

- The same pace as the semiconductor market growth

FY2027 (Forecast)	Billion yen
Tester Market	580.0
Advantest Share	46%
Existing Business	340.0
New Business	60.0
Sales	400.0

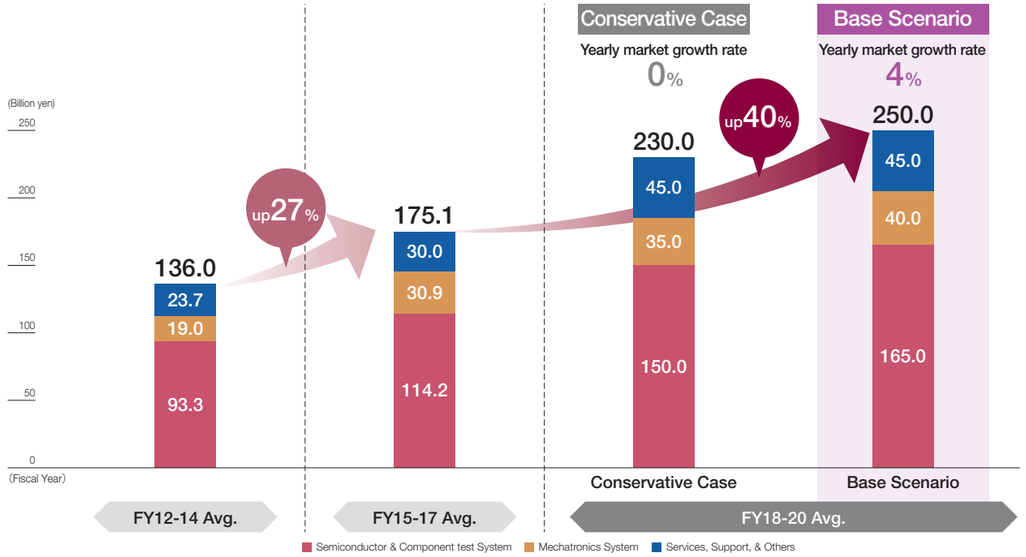
Our Strategy

Mid-Term Plan (FY2018-FY2020)

We have formulated and are executing a Mid-Term Plan for the next three years in order to realize our Grand Design (Long-Term Management Policy).

Approach to the Mid-Term Plan

As mentioned when describing the Grand Design, we forecast substantial growth in tester demand over the next ten years, but the semiconductor manufacturing equipment industry tends to have cyclical growth in which it undergoes repeated ups and downs rather than steady annual growth. For this reason, we have established a target for average growth over three years instead of establishing numerical targets for each fiscal year in our initial Mid-Term Plan starting in FY2018. We have assumed the above conservative case and base scenario. As mentioned earlier (p.28), we have assumed that we will increase our market share at a rate of one point every year under both scenarios.



The Advantest's strengths to increase our share in the semiconductor tester market are as follows.

Global No.1 Product Portfolio
- Highly scalable modular architecture platforms
- Dominant position in growth areas

Global No.1 Customer Base
- Unparalleled customer base nurtured over many years
- Greater presence in the growing Asia market

Total Test Solutions Including Peripherals, Global Support
- We offer complete test environments including device I/F peripherals

Management Metrics (KPIs)

Keeping in mind improvement of corporate value while remaining aware of both improvement in profit and loss and efficient utilization of capital, Advantest has determined key management metrics during the Mid-Term Plan period: sales, operating margin, return on equity (ROE), and earnings per share (EPS).

Each of these KPIs (three-year averages) are shown below. (Reference: actuals for the year ended March 31, 2019, greatly exceeded all KPIs in the base scenario, making it a solid first year.)

	Conservative Case (FY18~FY20 Avg.)	Base Scenario (FY18~FY20 Avg.)	Result of FY18
Yearly tester market growth ratio	0%	4%	–
Sales (Billion yen)	230.0	250.0	282.5
Operating margin	15%	17%	22.9%
ROE	15%	18%	35.3%
EPS	¥135	¥170	¥302

Main Initiatives

Semiconductor and Component Test System Segment
- Pioneering the capture of the wave of increasingly complex and sophisticated next-generation test demand for applications such as HPC (High-Performance Computing) and 5G communication
- Maintaining a robust business foundation in DRAM and NVM (Non-volatile Memory)

Mechatronics System Segment
- Expansion of sales opportunities by providing solutions integrated with testers, and catering to demand for advanced test environments

Services, Support and Others
- Increased post-sales revenue through initiatives such as catering to the need for factory automation, expansion of SSD tester sales, and expansion into peripheral markets through M&A

Strengthening Business Management
- Strengthening business management and introducing business management and evaluation tools based on ROIC (return on invested capital ratio) for internal business performance evaluation

Financial Policy & Shareholder Returns

Sustaining a Healthy Financial Status

Stable Free Cash Flow
- Create ¥85B – ¥100B of cash flow in 3 years

Minimum Cash Reserves
- Hold ¥50B – ¥60B for stable business activities
- Excess cash will preferentially be invested in business growth, M&A, etc.

Enhance Corporate Value through Mid-Term Investment

R&D Investments
- Continuous R&D investments of more than ¥30B annually

M&A Investment Frame
- ¥100B
- Expand solutions across the semiconductor value chain

Shareholder Returns

Returns Policy
- Half-term consolidated payout ratio 30%
- If long-term residuals remain, we will aim to review our payout ratio, improve returns by repurchasing shares, etc.

Governance, Human Resources Strategy & Mid-term Action Items

Enhance Corporate Governance
- Diversity of Board of Directors (nationality, gender)
- Start performance-based stock remuneration plan

Internal Business Management
- Introduction of ROIC-based tools for internal business management

Human Resources Investment
- Foster global, frontier personnel
- Innovative workstyles

Towards the Next Level
- Next wave business research team creation
- Greater involvement with customer processes in search of test solutions for each process
- AI data analysis introduction and utilization
- Explore ways to win more recurring business

Financial Strategy

Financial Strategy - CFO Message

Implementing a rapid-response financial strategy while balancing offense and defense



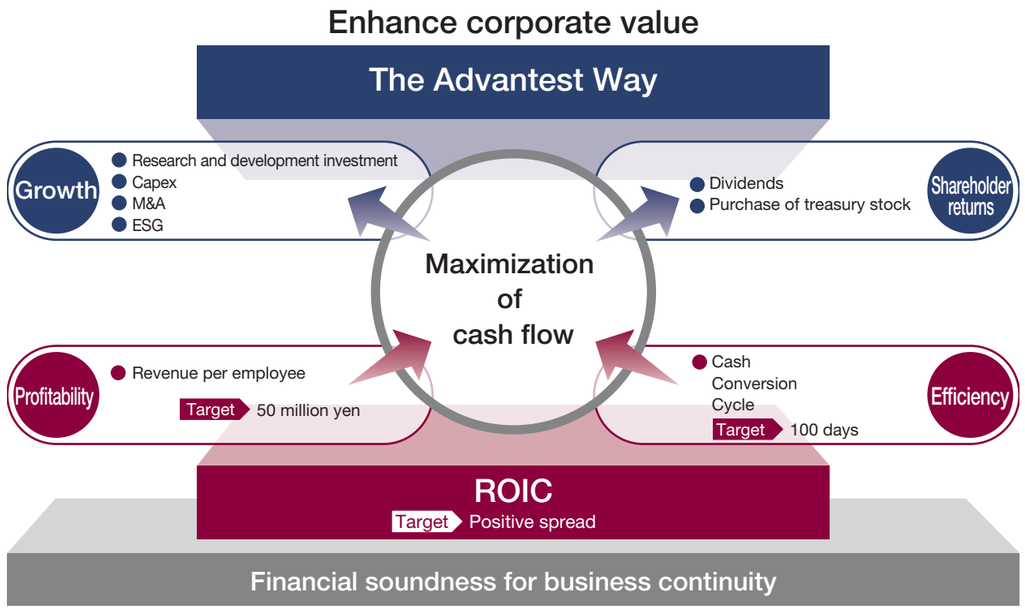
Director & Managing Executive Officer (CFO)
Atsushi Fujita

Basic Financial Policy and My Role as CFO

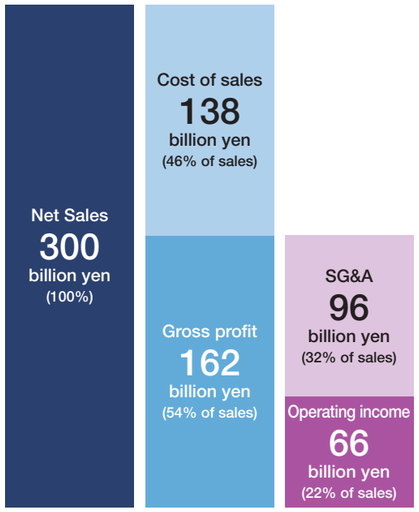
Since joining Advantest in 1983, in addition to my eight years working overseas, I have worked mainly in the accounting department as well as human resources and the general affairs department of our administrative division. Generally, the administrative division tends to have a conservative approach in terms of doing things as they have been done in the past, but mindful of the Company's guiding principle of "Quest for the Essence," I consciously aimed to incorporate ideas and initiatives not previously used within the Company, such as a performance evaluation system based on return on invested capital (ROIC), an accounting system using a single global platform, and a global cash management system, while considering trends in society at large. Our basic financial policy is to maximize cash flow by seeking profitability and efficiency based on ROIC, with the basic stance of determining the direction of our corporate management according to "The Advantest Way," which defines the Company's mission, vision, and core values founded upon the continuation of the Company's business to support the quality assurance of semiconductors, which can now be considered social infrastructure. I believe that our greatest challenge is to further increase shareholder value by sharing our business profits with stakeholders as shareholder returns while also allocating it to activities for growing our business and fulfilling our responsibilities to society. As the CFO of Advantest, my specific roles are to increase corporate value through evaluating our business, and to allocate and manage assets for global development, evaluating new investments such as M&A and new developments, and to engage with institutional investors. I constantly seek the best approach to increase Advantest's corporate value and adopt strategies that meet the needs of the moment.

Financial Approach for the Grand Design

In April 2018, the Company announced its Grand Design for the next decade. As depicted in the Grand Design, semiconductor applications and demand are rapidly expanding, backed by the data explosion, and this is establishing an environment for further growth of the Company's



P/L model on a level of 300 billion yen in sales for achieving mid/long-term targets



business. The base scenario for the next decade is for the Company to achieve 400 billion yen in sales in FY2027.
We posted record sales of 282.5 billion yen in FY2018, and we need growth of 4% per annum to reach this target of 400 billion yen in sales. However, the semiconductor industry does not grow steadily, and tends to experience repeated ups and downs, which also affect the Company. Considering these industry characteristics, Advantest does not expect to accumulate 4% growth every year and will implement growth investment including M&A to account for conditions several years ahead. In order to achieve the scenario depicted in the Grand Design, we will consider ongoing investment in research and development, improvements to the cost of sales ratio, a flexible production system responsive to fluctuations in demand, and improvements to our SG&A ratio as important issues for the profit structure, while paying attention to financial soundness, which enables a single A level credit rating. Amid an environment where there is much expectation of future business growth, we intend to increase corporate value by investing funds taking account of our Mid/Long-Term Management Policy while maintaining a dividend payout ratio of 30% to provide returns to shareholders. However, if we determine that there is a surplus of funds or capital even when implementing such business growth measures, we will dynamically consider overall shareholder returns such as reviewing the dividend payout ratio and purchasing treasury stock after also giving consideration to investment in growth.

Execution of Mid/Long-Term Investment while Maintaining a Sound Financial Base

In the Mid-Term Management Plan ending in the fiscal year ending March 31, 2021, which was announced as a milestone for the Grand Design for the next decade, sales, operating income margin, return on equity (ROE), and earnings per share (EPS) are managed as the four KPIs intended to promote the improvement of P/L for the period and the efficient utilization of capital. In particular, we are strongly aware that ROE should exceed the cost of shareholders' equity, meaning that the equity spread must be positive. For this reason, we have adopted the ROIC approach in the evaluation of products, and specifically require that each product is not only profitable, but has profitability that exceeds a certain hurdle rate in relation to the assets used. The figures for the hurdle rate of each product are obtained by adding the spread covering costs not directly generating profit to the weighted average cost of capital (WACC) based on the cost of shareholders' equity, and must be higher than the WACC required for the Company as a whole. If a product does not exceed the hurdle rate, we implement measures to improve profitability such as expanding sales, reducing costs, and lowering expenses, in addition to checking and making improvements to ensure that assets such as equipment and inventories are not excessive. This has the same meaning as improving profitability, the asset turnover ratio, and leverage, which are all elements of ROE, and in particular profitability and the asset turnover ratio, which ultimately leads to the improvement of companywide ROE.

To maintain a sound financial base, we aim to generate 85 to 100 billion yen in free cash flow over the three years of the Mid-term Plan, retain 50 to 60 billion yen in net cash to respond to short-term risks, and prioritize the utilization of excess funds in business investment such as investment in growth and M&A. With regard to the Company's global asset distribution and management, we will utilize cash pooling to facilitate the availability of funds in regions where they are required while taking care to ensure funds are not lost due to currency fluctuations by utilizing currency hedging, etc.

We intend to continually invest over 30 billion yen per year in research and development, and have established a framework for 100 billion yen in M&A investment aimed at expanding our capability to provide solutions in the semiconductor value chain. Evaluation of M&A deals and development projects is carried out by determining recoverability of funds using a certain hurdle rate in the same manner as ROIC to guard against investment losses.

Furthermore, in addition to improving profitability by expanding sales, reducing the cost of sales, and cutting costs, we are taking steps to quickly amass funds by increasing efficiency with an awareness of ROIC and the cash conversion cycle (CCC). Shortening the number of days in the CCC will enable us to quickly utilize funds, begin investing in development earlier, and create a virtuous cash cycle for improving profitability, which results in an advantage over our competitors.

Investment in the Future

To increase corporate value, we will actively invest in intangible assets and particularly in personnel and in research and development as appropriate for our business aims. We will continue to invest more than 30 billion yen per year in research and development, which is the source of our competitiveness. Investment in development aimed at expanding our wide product lineup is essential for maintaining our advantage over the competition and for remaining the leading company in the semiconductor tester industry. In addition, we anticipate that it will become more difficult to secure the necessary human resources in the future, amid concerns about the global aging of society. We plan to actively invest in securing and developing human resources inside and outside the Company, including engineers who support our relationships with customers. Furthermore, there are also concerns about the enormous cost of maintaining existing IT systems and the prospect of the systems themselves becoming obsolete due to technological advances. We will remain conscious of the digital transformation as we implement plans to upgrade our IT resources, including production systems and internal infrastructure.

Increase Shareholder Value

Advantest is engaged in improving ROE in order to achieve a positive equity spread, and lowering the cost of capital can have a significant impact on a positive equity spread. The semiconductor sector tends to have larger fluctuations in stock price than the stock market as a whole, so the industry tends to have a high cost of capital. The Company's sales are also affected by customers' enthusiasm for capital investment, which is influenced by economic trends, but we are attempting to stabilize performance to a greater extent through steps such as strengthening our subscription base with annual maintenance contracts. Performance has also deteriorated in the past due to the impairment of assets, and we are raising awareness of excess assets by ensuring the ROIC approach permeates throughout the Company.

With regard to increasing shareholder returns, we are always mindful of the potential of measures utilizing the purchase of treasury stock, but we believe that corporate value can best be realized by expanding the Company's business based on the idea that the semiconductor industry is a growth industry and not one that is mature. Dividends are paid based on a policy linked to performance in the same manner as bonuses for employees, who are also stakeholders, and we wish to increase dividends to all our shareholders as a result of future growth of the Company.

Strategy Feature 1

Research and Development: Focusing on “Waves”



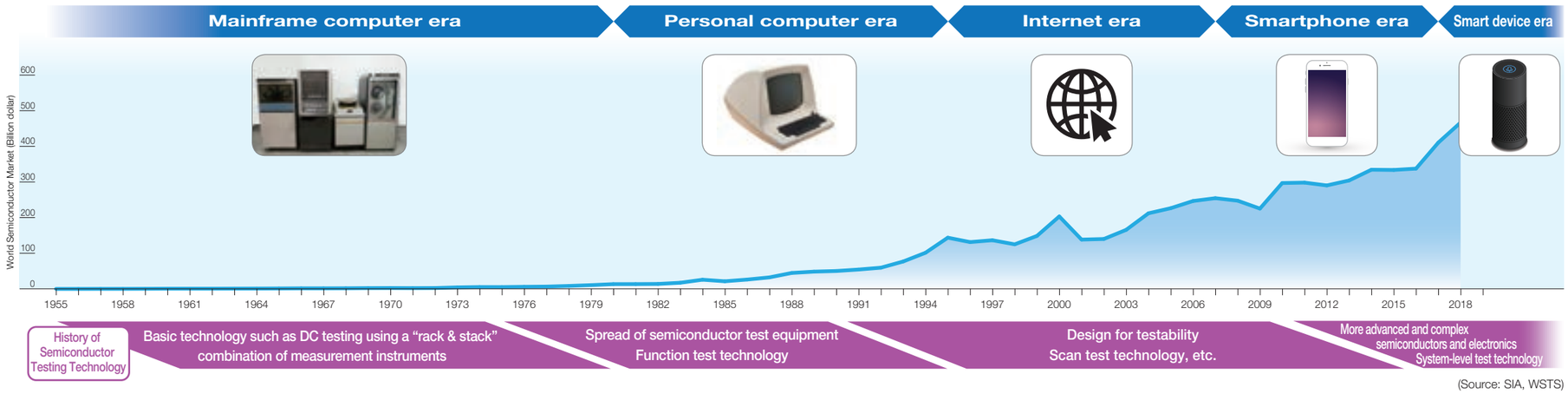
Catching the Waves of Technology & Further Building on Our Strengths

Our corporate mission is “Enabling Leading-Edge Technologies.” This is both a source of pride and a responsibility for our R&D division. It is important to constantly hone and amass state-of-the-art technologies, but we do not consider our business successful until our technologies are commercialized, or packaged as solutions, and accepted by the customers (markets) that need them at a sufficiently large scale. It is the mission of the business unit to quickly and accurately identify these future business opportunities and to successfully capture them by incorporating them into our development planning, where the R&D division is responsible for giving shape to these dreams.

Hans-Juergen Wagner

Director & Managing Executive Officer
Test Technology
Leader, ATE Business Group

Trends in test technologies brought by the “waves”



(Source: SIA, WSTS)

Catching the waves of technology in partnership with our leading customers

Separately from economic fluctuations, the evolution of semiconductor manufacturing technology and increases in production volumes have become the growth drivers of the semiconductor testing business. They generate sequential “waves” of progress. With the progress of semiconductor process shrinks, semiconductors become more complex, more functional, more high-performance and lower cost. New integration and packaging technologies are developed to implement these advances, and new markets and business models are created by end-products that hitherto did not exist. At the same time, technological innovation and the shifting roster of players cause dynamic changes in the supply chain. These big changes drive future innovations and the creation of new products and new markets. This is what we mean by “waves.” In order to quickly and accurately catch these waves, collaboration with customers who lead the industry in terms of products and technology is essential. The challenges these leading customers face, in terms of their advancement, investment scale, and impact on existing markets and supply chains, serve as Advantest’s compass as we seek to capture the profit opportunities generated by coming waves and set the direction of our R&D accordingly. This business unit’s most important mission is to collaborate with these leading customers and develop concrete development plans for commercializing the solutions that meet their needs.

Reinforcing our strengths

Our core business is ATE (Automated Test Equipment, which includes handlers and device interface products). In CY2018, we held the No.1 market share in the global ATE industry. We are extremely proud of this accomplishment and of the product portfolio and customer base that supports it. Further strengthening our ATE business unit is Advantest’s top priority in terms of revenue sources and as a driving force for enhancement of our corporate value. Since our acquisition of Verigy in 2011, our V93000 development division and T2000 and memory tester development divisions had been separated, but in FY2018 we consolidated these divisions into a single organization. This will have a significant effect on the sharing of technologies and will reduce development times, and we are already developing a global personnel rotation system to better cross-fertilize our R&D projects.

Major achievements from FY2018 through the beginning of FY2019 include:

(1) Launch of a new memory burn-in tester family for NAND flash and DRAM (model name B6700 series)
(2) Expanding the served markets of the V93000 to include power and automotive devices (AVI64 & FVI16)
(3) Launch of a system-level test system for high-speed NAND (T5851 STM16G)
(4) Delivery of a test solution for 5G-NR devices(V93000 Wave Scale Millimeter Solution)
(5) Expanding the served markets of the V93000 to include chip makers’ process monitoring and development processes (V93000 SMU8)
(6) S Development of STT-MRAM switching current measurement technology using our memory tester

Capture of related markets

As we explained in our Grand Design, which was announced in April last year, we believe there exist untapped markets in proximity to our core business that can be developed by utilizing our measurement technology. Our $135M acquisition of the SLT (System Level Test) business of Astronics, announced in February 2019, is one of our planned measures to expand our business to these related markets. Furthermore, in July 2018, we established our new ARTeam (Applied Research & venture Team), which has an organizational structure that transcends our R&D division, to sensitively capture the opportunities generated by new waves of technology in our core business as well as related markets and incorporate them into our R&D planning. The ARTeam gathers together both highly capable engineers and individuals with entrepreneurial gifts and insight. Collaborations with universities and research institutes will be another way that we aim to expand our expertise and contribute added value to our customers.

Strategy Feature 2

Aiming to Develop Talented Human Resources at the Cutting Edge of the Industry



Keith Hardwick

Managing Executive Officer
Global HR Executive Vice President

We will develop and utilize global human resources in a global system within a new corporate culture

Employees are Indispensable Assets

Advantest's employees are our greatest assets, driving the growth and expansion of the semiconductor value chain. Therefore, it is essential that we secure the best human resources in the market and continue to retain them by providing competitive remuneration and exciting opportunities to grow and prosper as a global organization. In particular, we believe in the value of long-term employment.

For this reason, we place importance on increasing job satisfaction and a providing a pleasant working environment and are committed to achieving this. As a result, the German office of Advantest was chosen as one of the top 100 "Best places to work in Germany 2019" by the internationally-renowned consulting firm Great Place to Work®. In the United States, smart watches were distributed to employees to be utilized to improve their everyday work-life balance. Furthermore, despite achieving our highest sales on record in FY2018 (up 36% year-on-year), it should also be noted that we were able to limit the increase in working hours, with an average of 14.8 hours of overtime (12.8 hours in FY2017) in Japan, where most of the personnel in the production division are located.

In this way, we have implemented working-style reform programs in locations worldwide, in addition to proceeding with innovative initiatives such as performance-based stock remuneration, job rotation programs, and the provision of a wide range of opportunities to work overseas.

Culture that Brings Out the Capabilities of Employees

Advantest places importance on providing training opportunities to all employees who are motivated to continue learning and growing. At the same time, we actively create opportunities for employees to enhance their own strengths and address their weaknesses. Through this training and growth, Advantest employees are encouraged to make decisions independently. Advantest is proud to have a stance of not only achieving success, but also learning and improving through failure. By encouraging such training, growth, and independence, we enable every single employee to contribute to the success of Advantest.

Employee Engagement

Advantest is continually striving to establish a culture in which all employees are recognized for their value, respected, and able to work toward common goals. In 2018, 91% of employees participated in a global employee engagement survey. As a result, we were able to learn how employees feel about their work and workplaces and gained hints about what kind of support the company can provide.

Since the beginning of FY2019, Advantest has been working to improve engagement globally, in each country and in each division. Furthermore, based on the results of the employee engagement survey, Advantest has come to realize that we should engage in a global reform of our corporate culture over several years. Our new corporate culture is expressed by the word "INTEGRITY," taking the first letter of nine phrases that define the values we should emphasize in all our actions within the Company and on behalf of the Company.

Along with this reform of corporate culture, we will collaborate with colleagues, customers, and partners to hold workshops for providing deeper understanding among all employees to enable them to better communicate, progress with their work, and improve by learning from others.



Innovation	INNOVATION is our Lifeblood
Number One	NUMBER ONE is our Aspiration
Trust	TRUST is our Foundation
Empowerment	EMPOWERMENT is our Motivation
Global	GLOBAL is our Reach
Respect	RESPECT is our Heart
Inclusion and Diversity	INCLUSION AND DIVERSITY is our Commitment
Teamwork	TEAMWORK is our Approach
Yes	YES is our Attitude

Global Human Resource Management

Advantest allocates human resources strategically to provide support to our global customer base.

The Company's global presence and influence is one of the keys to our success. For many years, a large portion of our revenue has come from customers outside Japan. At present more than 95% of sales originate outside Japan. Addressing this reality, 48% of our total of 4,936 employees are based in various locations worldwide to provide support to our customers. Advantest's utilization of global human resources can be clearly seen in our commitment to promoting local employees to presidents of local subsidiaries and executive officers, resulting in 42% of the Company's executives hailing from outside Japan.

In order to fairly treat and assess our employees worldwide, Advantest has unified qualification systems and personnel evaluation systems, in addition to having a common global bonus system as an incentive for the distribution of profit. Furthermore, a performance-based stock remuneration system was introduced last fiscal year as a common global mid- to long-term incentive-based remuneration system. These forms of performance-based remuneration are calculated based on performance of the Company as a whole without segmentation by business division, country, or region. This has enabled us to establish a framework for all global employees to cooperate by considering the profit of the Company as a whole.



Furthermore, in FY2014, we established a global personnel database, which is effectively utilized for project team composition and smooth personnel changes on a global scale. In addition, from FY2015, we began using a global personnel evaluation system. In the future, we will be improving our global human resource development systems, promoting employee diversity through active efforts to hire and promote employees with differing backgrounds, and taking decisive steps toward forging an employee recruitment strategy that accords with our business strategies in each country.

In this way, Advantest will continue to make large investments in human resources. Both revenue and earnings are expected to decrease in FY2019, but we will continue to invest in a wide range of overseas human resources including research and development, system engineering, and sales, with the aim of maintaining and expanding our market share in and beyond FY2020, which is the final year of the Mid-Term Management Plan.



Global human resource system

Approach to Risk Management

Risk Management

Advantest implements continuous strategic risk management in response to the global, diversifying risks we face.

Basic Approach

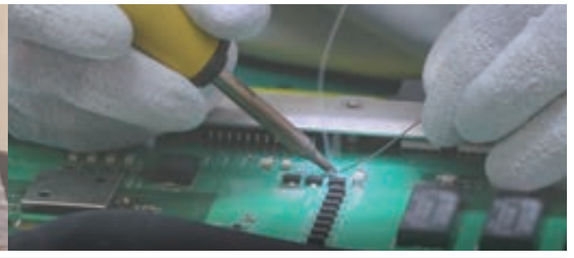
Advantest faces diverse risks arising from both internal and external factors as in the course of our global business. The Company aims to curb risks and minimize damage by predicting major risks that may cause significant harm to the Company's business activities, corporate management, performance, shareholder value, or external reputation, analyzing their impact and continuously taking appropriate steps to address them.

Internal Control

Advantest has established an Internal Control Committee to oversee the internal control activities of the Advantest Group. The Internal Control Committee is made up of the heads of business divisions, corporate divisions, and major overseas affiliates, and is chaired by the President.

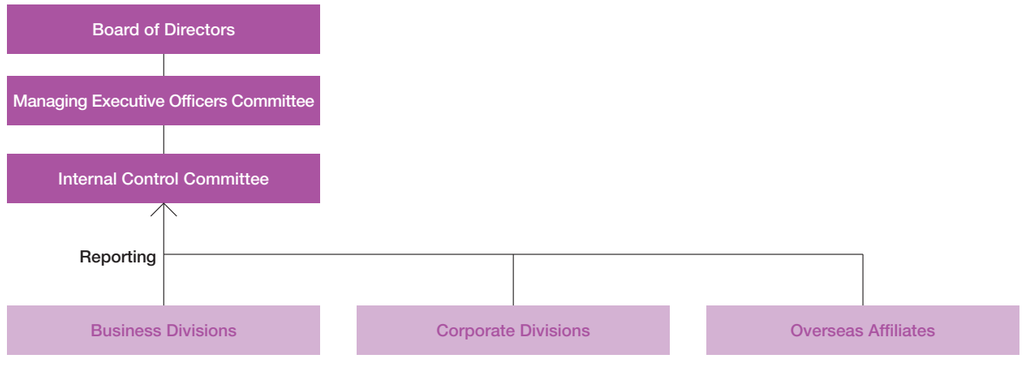
The members of the committee periodically conduct risk assessments in their own units, and conduct appropriate risk management through activities to recognize and assess potential risks in the management environment, business activities, and the company's assets, as well as through improvement activities. The Internal Control Committee conducts risk monitoring for the Group as a whole once every six months, and assesses and takes steps to address major risks.





Risk Management System

Advantest aims to organize our risk management system and clarify the roles of management, business divisions, and corporate divisions.



Major Risks and Countermeasures

	Major Risks	Major Countermeasures
1	**Significant demand volatility in the semiconductor industry**	We are building a structure capable of responding to fluctuations in demand by reinforcing our service business, expanding into areas outside the semiconductor industry, and promoting outsourcing of production.
2	**Global economic and political impact of conducting business worldwide**	Keep paying attention to the trend of world economy and international politics and put the first priority on customer's value when take any business activity.
3	**Reduction of market share due to possible inability to deliver new products meeting customers' requirements in a timely manner**	We are striving to quickly ascertain the needs of customers through close communication with them.
4	**Missed opportunities due to dependence on a limited number of suppliers**	We are standardizing components and design, and building a structure that is not overdependent on specific suppliers.
5	**Reduction of market share due to intense competition**	We are endeavoring to ensure our products remain competitive by providing unique functions and high added-value solutions.
6	**High dependence on sales to largest customers**	We are aiming to secure a broad customer base by developing new customers.
7	**Price pressure on product lines**	We are endeavoring to maintain appropriate pricing for our products by providing unique functions and high added-value solutions.
8	**Impact of exchange rate fluctuations on profitability**	We are endeavoring to limit the impact of fluctuations in exchange rates by adjusting the balance of currencies held.
9	**Recovery of development costs for new products**	We are seeking to improve the recovery of costs through stronger marketing and versatile product development.
10	**Limited sales opportunities due to key market concentration**	We are aiming to expand the scope of our business through steps such as the development of new businesses and M&A.
11	**Significant impairment losses on goodwill and intangible assets**	When acquiring assets through methods such as M&A, we consider the cost of capital in our investment decisions.
12	**Suspension of business operations due to natural disasters or cyber attack against our IT systems**	In addition to formulating a business continuity plan, we are endeavoring to ensure business operations are not impeded by adopting steps such as diversifying production locations and external suppliers, and utilizing distributed cloud storage of data.
13	**Recovery of capital expenditure**	We consider the ability to recover expenditures based on the cost of capital in our investment decisions.
14	**Decline of reputation or brand power due to product defects, etc.**	We are striving to provide highly reliable products by conducting reviews in the design phase and implementing cross-checks by the Quality Assurance Division.
15	**Incurring costs to comply with more stringent regulations for chemical substances**	In addition to monitoring trends in environmental regulations for chemical substances, we are investigating alternative technologies.
16	**Infringement of intellectual property by our employee or by 3rd party**	Provide training to employee, and confirm whether there is any issue on IP at the time of development. And immediately claim our right when any 3rd party infringes against our IP.
17	**Shortage of highly specialized personnel**	We are aiming to secure a stable pool of talent through measures such as the establishment of a mid/long-term recruitment plan and global rotation of personnel.
18	**Operational degradation due to legacy IT system**	Keep recruiting and retaining talented IT engineers, and regularly monitoring the gap between current IT environment and advanced IT technology.

Sustainability

Materiality for Enhancing Sustainability

Based on a long-term perspective, we consider our business and CSR activities to be the natural starting point for us to contribute to solving the various challenges of modern society through our measurement technologies. While bearing this in mind, we will fulfill our dual responsibilities to improve corporate value by generating profit and to contribute to the development of a sustainable society through all our corporate activities, including our supply chain.

Our Approach to Materiality

In recent years, the roles and scope of information technologies have expanded, generating enormous volumes of data.

Furthermore, we have entered an era when even greater reliability is required than in the past in areas supporting the people's lifestyles, such as data centers, automobiles, and medicine.

The role of semiconductors will become increasingly important in solutions for global social issues. Advantest will contribute to greater safety, security, and comfort for society and to creating a sustainable future through semiconductor test supporting devices with high reliability, increased functionality, and increased capacity.

Based on this approach, Advantest believes that it is vitally important to first identify the impacts that the Company's operations have on society and the problems that society expects us to help solve, as a basis for clarifying the key issues that we need to address in our CSR activities, so that we can then go on to implement effective management based on specific key performance indicators (KPIs).

Identifying Materiality

Step 1 Collation of materiality aspect candidates and formulation of assessment criteria

Assessment criteria were formulated in light of GRI standards, RBA code of conduct requirements, industry standards such as SASB and international disclosure standards in addition to the content of surveys submitted by customers and investors, giving consideration to consistency with respect to the Company's boundaries and business risks.

Step 2 Examining the degree of importance from both internal and external perspectives

CSR Working Group members, representatives of relevant departments, and responsible directors examined materiality in terms of both the level of importance as viewed by stakeholders, and the degree of importance to the Advantest Group.

Step 3 Identifying materiality and setting KPIs

The identified materiality items were determined after being discussed at the Managing Executive Officers Committee. One or two specific activity indicators and KPIs were set for each materiality aspect.

Sustainable Development Goals

The sustainable development goals (SDGs) were adopted by the United Nations in 2015 as common global goals to achieve a better future by, for instance, responding to climate change and eradicating poverty.

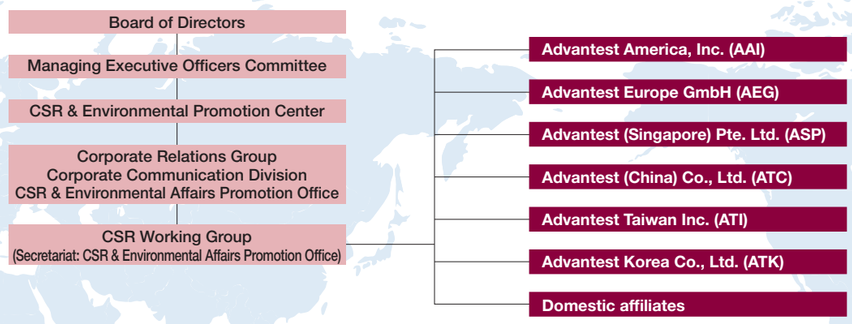
Based on our management philosophy of "Enabling Leading-Edge Technologies," Advantest will contribute to the technological advancement of society and the resolution of social issues through semiconductor test as a form of social infrastructure.

Implementation System

The Advantest Group has established the CSR & Environmental Affairs Promotion Office directly under the Board of Directors. The CSR & Environmental Affairs Promotion Office has the function of investigating sustainability trends, clearly defining sustainability issues that should be addressed, and promoting their resolution throughout the Company.

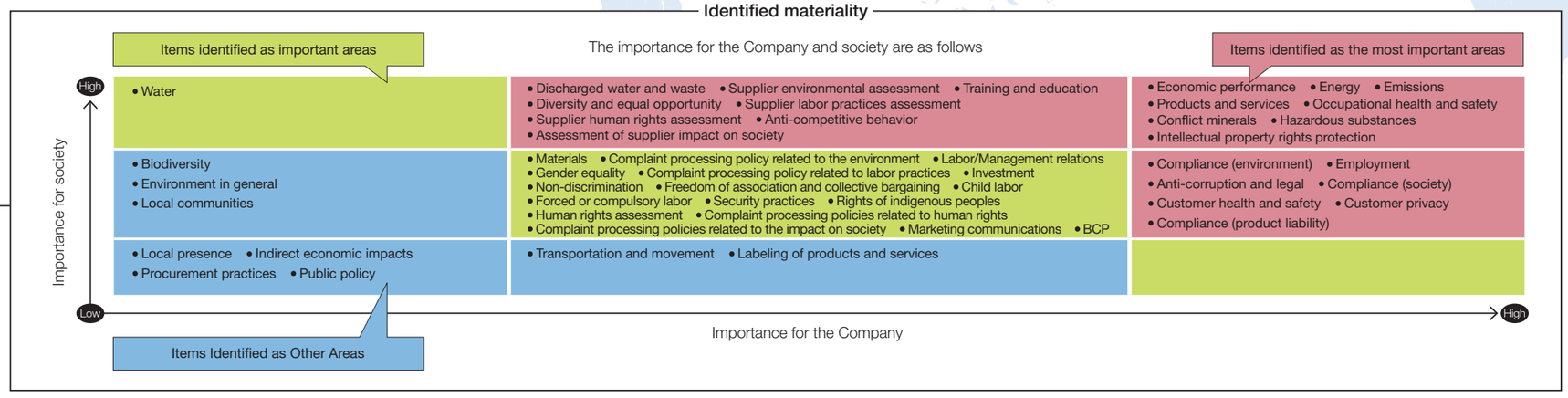
In addition, to facilitate the development of a company-wide CSR framework, a CSR Working Group has been established, consisting of members appointed from the Company's units responsible for general affairs, human resources, PR, IR, sales, quality assurance, production, etc. The CSR Working Group implements activities on a worldwide basis.

Advantest's Organization for Promoting CSR (*1, 2)



*1: CSR management activities related to each region are to be promoted by subsidiaries in each region.
*2: Global CSR initiatives and CSR activities related to business operations (e.g., compliance, customer relations, quality assurance, human rights, environment) are to be promoted by the CSR Working Group.

Identified materiality



Sustainability Goals (Materiality)

Advantest contributes to the safety, security and comfort of people around the world and helps to create a sustainable future through semiconductor test supporting a wide range of end products.

Sustainable Development Goals (SDGs)

The Sustainable Development Goals were adopted by all 193 members of the United Nations in September 2015 with the aim of resolving social issues such as poverty, inequality, biodiversity losses, and climate change, in order to create a better future and protect our planet.

If the entire world addresses the 17 goals and 169 targets listed in the SDGs, we can overcome the enormous challenge of creating a world where “nobody is left behind.”



Category	Identified materiality	KPIs	Material Reasons	SDGs related items
Economy	Economic Performance	Net sales, operating profit margin, ROE, EPS	We consider economic performance metrics such as net sales, operating income, ROE, and EPS our foundation and the most important factor in our ongoing corporate activities.	
Environment	Energy	Rate of improvement in energy intensity	Advantest considers efficient energy use an important CSR activity for the global environment.	
	Emissions	GHG emissions (Scope 1/2)	We consider efforts to reduce the emissions through more efficient energy use to be vital, asefforts to reduce greenhouse gases, which should be conducted worldwide, are indispensable to our business activities.	
	Discharged water and waste	Waste recycling rate	We promote 3R (Reduce, Reuse, Recycle) for resources based on the belief that contributing to a recycle-oriented society is part of our corporate social responsibility, and this positions waste-reduction measures as an important issue.	
	Hazardous substances	Percentage of suppliers covered by hazardous substance surveys	Advantest places great importance on compliance with all additions and revisions of electrical and electronic regulations, including the RoHS Directive.	
	Products and services	Percentage of products meeting in-house green products criteria	Advantest products generate various small and large environmental impacts through their use. Green products, which reduce environmental impact, are important for us not only because they address environmental issues but also as messaging that conveys the quality of our products.	
	Compliance (environment)	Number of cases of environmental compliance	Our business activities have a range of impacts on the environment. In order for us to achieve responsible, continuous development, it is important that we share environmental information with stakeholders and reflect this in our environmental management.	
	Supplier environmental assessment	Percentage of new suppliers that were screened using environmental impact criteria	Advantest emphasizes the development of high-quality green products by working from the perspective of environmental conservation in parts procurement, materials, and manufacturing processes.	
	Conflict minerals	We ensure our use of materials with a low risk of conflict mineral associations by asking business partners to ensure transparency in regard to the sources of materials and components, etc., and by working together with industry organizations to investigate information relating to conflict minerals (i.e. mineral processing firm information).	Conflict minerals are not only regulated by the Dodd-Frank Wall Street Reform and Consumer Protection Act, but are also a major problem faced by society as a whole. Advantest is no longer subject to the Dodd-Frank Wall Street Reform and Consumer Protection Act, having delisted our corporate stock in the United States in April 2016. However, Advantest remains aware of the importance of the conflict minerals issue, which also has deep ties to efforts conducted by the entire industry.	
Society	Employment	Percentage of employees returning to work after taking childbirth and/or childcare leave	The heart of corporate activities is people. Advantest employs diverse human resources and considers the provision of a workplace where employees can reach their full potential to be an important measure for improving corporate value.	
	Occupational health and safety	Occupational accident rate	Advantest sees employee safety and health assurance as vital to executing our business activities, and recognizes the need to continually raise awareness.	
	Training and education	Average number of hours of training per employee per year	To enhance corporate value, we need to ensure that employees clearly understand their role and make an effort to develop their capabilities. We recognize training and development as an important CSR theme based on these needs.	
	Diversity and equal opportunity	Female employees as percentage of total workforce	Advantest recognizes the acceptance of employee diversity, the elimination of discrimination, the facilitation of each individual to reach their full potential, and the provision of a workplace open to full employee participation as vital to earning trust from society and improving corporate value.	
	Supplier labor practices assessment	Percentage of new suppliers that were screened using labor practices criteria	Advantest considers it important for a broad range of stakeholders, including our business partners, to affirm human rights and ethical labor practices in the conduct of our business.	
	Non-discrimination	Number of complaints submitted to the helpline that are properly resolved	Advantest considers the elimination of discrimination based on age, gender, nationality, religion, or any other characteristic to be vital to enthusiastic employee participation and motivation worldwide.	
	Supplier human rights assessment	Percentage of new suppliers that were screened using human rights criteria	Advantest recognizes the influence we can exert to protect human rights in the context of parts, materials and manufacturing processes, and considers this a vital responsibility, extending to our suppliers.	
	Anti-corruption	Number of confirmed incidents of improper behavior	Legal compliance and governance is the basis of our corporate activities. We recognize the elimination of acts that will truly damage the trust of our stakeholders such as bribery and corruption to be our greatest corporate social responsibility.	
	Compliance with anti-monopoly legislation	Number of incidents relating to relevant legislation	Advantest considers the elimination of anticompetitive practices vital to earning trust from society.	
	Compliance (society)	Number of non-compliance instances relating to social issues	Advantest considers social responsibility based on ethical convictions held by each and every employee to be vital to earn the trust and faith of our stakeholders.	
	Supplier assessment for impact on society	Percentage of new suppliers that were screened using criteria for impact on society	Advantest recognizes that compliance issues and adherence to social norms in parts, materials and manufacturing processes impacts the company, and we emphasize the fulfillment of our social responsibility throughout the entire supply chain, including all of our business partners.	
	Customer health and safety	Number instances of non-compliance with in-house safety standards	Modern society views product safety as being of increasing importance. We recognize the necessity of ongoing efforts to more readily respond to this societal expectation.	
	Customer privacy	Number of complaints relating to information security	Information that we receive from our customers and business partners needs to be protected, and it is also thus an informational asset for the company. We recognize the proper protection and management of this information as vital.	
	Intellectual property rights protection	Percentage of employees who have undergone e-learning training relating to intellectual property rights protection	The strength of Advantest is our state-of-the-art technological capabilities. Therefore, we believe protecting our intellectual property as the source of our competitiveness is vital to our continued existence as an enterprise.	
	Compliance (products/services)	Number of non-compliance instances relating to products/services	Adherence to laws related to products and services is a corporate social responsibility that we believe is important to a broad array of quality management items.	

Materiality Focus

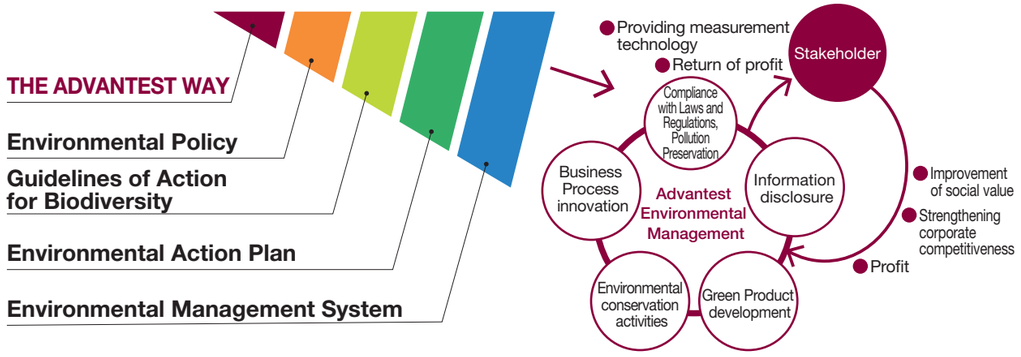
Materiality Focus 1 - Environment



Advantest Group Environmental Policy

Through its business activities, the Advantest Group contributes to the sustainable development of society.

We also strive for environmental protections such as measures against climate change and conservation of biodiversity, and use renewable resources such as energy and water resources to actively participate in the environmental conservation activities below together with all our employees, reinforcing our identity as an enterprise that deserves society's trust.



1 **Promoting Environmental Management**
By maintaining our environmental management system, we promote global environmental conservation efforts that achieve environmental targets set for both our business activities and environmental concerns.

2 **Reduction of Customers' Environmental Burden**
We promote energy conservation, improved recyclability, and the elimination of hazardous substances to provide environmentally-friendly products and services that contribute to our customers' reduction of their environmental footprints, giving consideration to the life cycle of our products from materials procurement to waste disposal.

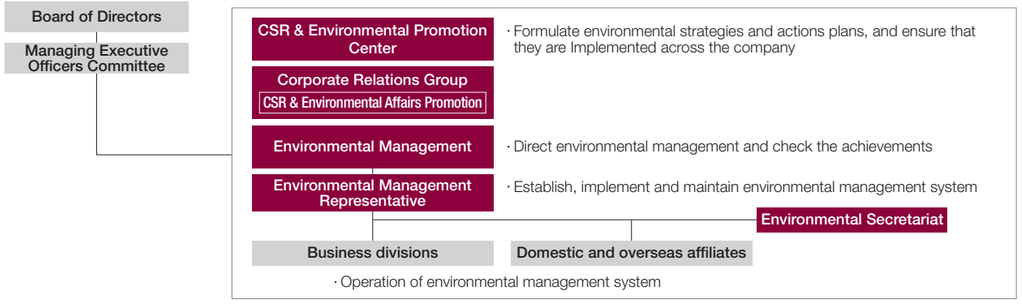
3 **Better Workplace Procedures**
We continually improve our work procedures to hone our environmental performance by creating environmentally friendly products.

4 **Environmental Protection and Sustainable Use of Resources**
By being alert to the environmental impact of our business activities, we strive to protect the environment through measures ranging from climate change prevention to the conservation of biodiversity, as well as sustainable use of resources such as energy and water.

5 **Complying with Environmental Laws and Regulations and Preventing Pollution**
Upholding all environmental laws and regulations and voluntary standards, we protect nature and shield our neighbors from environmental pollution and health hazards caused by chemical substances, waste and other contaminates.

Framework to Promote Environmental Management

The Advantest Group is building a framework to better promote our global environmental initiatives.



Green Products

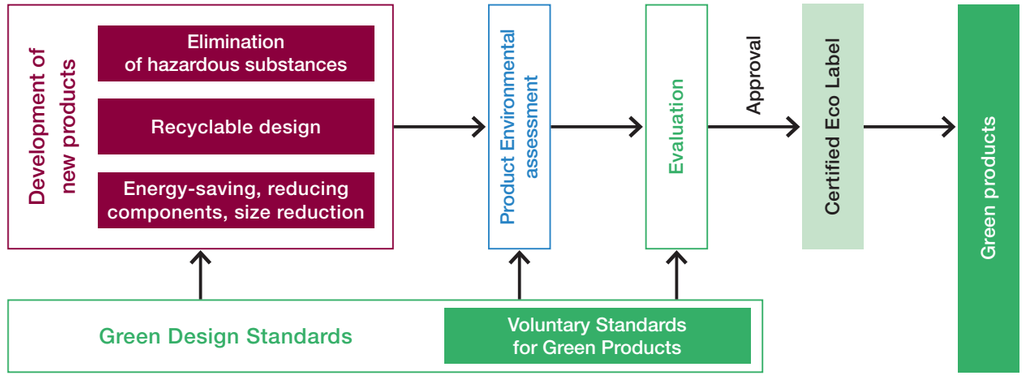
Basic Stance

Contributing to the sustainable development of society and conducting environmentally-friendly business operations are essential issues that need to be addressed in modern business management. The Advantest Group works to develop products from the perspective of environmental conservation while prioritizing high precision and high quality, and certifies as green products those products that are environmentally-friendly in terms of the three key aspects of energy and resource saving, improving recyclability, and elimination of hazardous substances. There is demand in society for the supply of green products because they provide both a reduction in the environmental footprint and an improvement in economic value. The Advantest Group is developing green products in response to these demands and based on the belief that these products will be beneficial for its customers.

Development Flow of Green Products

At the Advantest Group, all new products undergo a product environmental assessment.

During the product environmental assessment, products are assessed from various aspects, including energy-saving, reducing the number of components, size reduction, recyclable design, and elimination of hazardous substances. Products that meet the Voluntary Standards for Green Products defined by Advantest are certified as green products and are awarded an Eco Label (type II).



Energy and Resource Saving
- Voluntary standards
  - Energy-saving design
  - Reducing component design
  - Size reduction design

Recyclable Design
- Voluntary standards
  - Design with recyclable plastic materials
  - Design for ease of disassembly
  - Release of information on disposal

Elimination of Hazardous Substances (Green Procurement)
- Voluntary standards
  - Improvement rates of green procurement
  - Elimination of banned substances

Materiality Focus

Materiality Focus 2 - Society



Diversity and Equal Opportunity

Advantest is supported by a variety of stakeholders including customers, employees, and local communities, and has a social responsibility toward all of them. We implement management activities based on identified materiality aspects (see p. 43-44) relating to society.

Diversity Management

Advantest celebrates the diversity of its workforce and strives to create a workplace where every employee can achieve their potential and participate to the fullest. We respect individual differences while striving to facilitate a corporate climate where everyone can reach their full potential and actively participate with their own unique personality and skills.

Specifically, the Company pledges in its basic policy to respect the human rights of every employee and eliminate all forms of discrimination on grounds such as race, gender, age, nationality, religion, social standing, physical disability, diseases, and sexual orientation. Moreover, we do not discriminate in our recruitment and employee compensation practices, and strive to hire, cultivate, and promote personnel who will shine on the global stage.

Recruitment and Use of Global Human Resources

Business has become more global in recent years, and we aim to secure personnel who understand other cultures, have high-level communication skills, and are able to execute business on the global stage. Specifically, we are putting more effort into building human resource systems from a worldwide perspective as well as taking a global perspective when hiring, developing, and assigning human resources throughout the entire Group. We use personnel rotation and exchanges with overseas affiliates to promote globalism in our corporate structure. Through everyday business and training in both organizations, technology and know-how are shared, allowing each employee to learn more advanced technology plus adaptive skills for a diverse business environment.

Number of employees by region 2017-2019
(Employee headcounts are as of March 31 each year)

North America

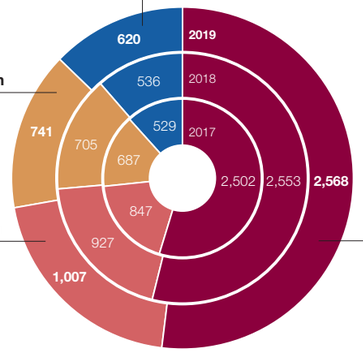
2019	**620 (13%) including 108 women**
2018	536 (11%) Including 88 women
2017	529 (12%) Including 84 women

Europe

2019	**741 (15%) including 128 women**
2018	705 (15%) Including 125 women
2017	687 (15%) Including 113 women

Asia

2019	**1,007 (20%) including 236 women**
2018	927 (20%) Including 217 women
2017	847 (19%) Including 197 women



Japan

2019	**2,568 (52%) including 416 women**
2018	2,553 (54%) Including 400 women
2017	2,502 (55%) Including 378 women

Global Human Resources Activities

Advantest engages in a wide range of initiatives both on a worldwide basis and tailored to each country's conditions to develop global and frontier human resources.

In terms of specific activities, regular Global HR Meetings are held to share our HR status and efforts in each country and to create a place for debate about solving personnel issues shared throughout the Group.

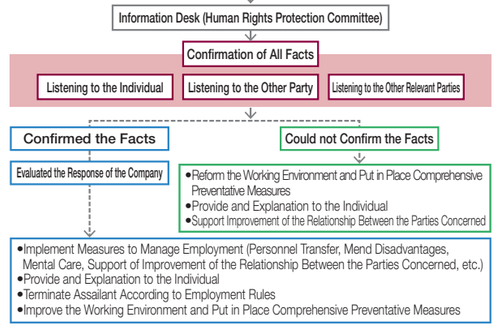
Human resource managers from each Group company gather at the Global HR Meeting to present their endeavors and challenges in each country. We have also deepened exchanges through discussion about further globalization such as the introduction of Group-wide human resource policies as well as new systems.

Respecting and Protecting Human Rights

System for Promotion of Respect and Protection of Human Rights

The Corporate Ethics Office and the Compliance Committee lead Advantest's initiatives to promote and set policies on human rights issues and deal with inquiries and complaints about discriminatory treatment.

We share the Advantest Supply Chain CSR Promotion Guidebook with our suppliers, and endeavor to ensure that they are fully aware of the need to respect human rights (including the prohibition of forced labor, child labor, and discrimination).



Creating a Workplace that Respects Human Rights

Advantest believes considerations for human rights are a vital element in expanding businesses globally. We support international standards related to human rights such as the Universal Declaration of Human Rights and respect basic human rights, based on the laws and regulations in each country and region.

Furthermore, in addition to being a signatory to the United Nations Global Compact, which is a worldwide initiative advocated by the United Nations, we are a member of Global Compact Network Japan, which is the local network in Japan. We support the UN Global Compact's Ten Principles, which are universal principles to be observed by companies in the four areas of human rights, labor, the environment, and anti-corruption, and are promoting initiatives in each of these areas. Moreover, "The ADVANTEST Way," which is the foundation of the Company's corporate culture, also specifies a policy for the protection of human rights that prohibits discrimination on grounds such as race, gender, age, nationality, religion, social standing, physical disability, illness, and sexual orientation. We have also established a manual for human rights and anti-discrimination and prevention guidelines for harassment, which promotes protection and respect for human rights.

Materiality Focus

Materiality Focus 3 - Governance

Corporate Ethics and Compliance with Laws and Regulations

Companies aiming for sustainable growth need employees who fulfill their social responsibilities and who possess a strong sense of ethics. They also need to earn the trust of stakeholders. Based on this belief, Advantest has established The ADVANTEST Way, which lays out our management direction and policy and indicates our Corporate Mission, Mission, Core Value, Guiding Principle, ESG for Sustainability and Ethical Standards for employees to enhance their ethical awareness.

Compliance Promotion System

Advantest gives guidance and advice to all Group employees to ensure that they fully understand and comply with the "The ADVANTEST Way & Code of Conduct," and has established a global management structure.

Also, as a member of the international community, we regularly conduct compliance audits through our global audit teams in order to ensure that we follow the different laws and regulations in each country and carry out our business activities appropriately.

Supervisor	Related department
Consult with a supervisor who understands the work and situation	Consult with related business department

↓

Corporate Ethics Helpline
Direct consultations when it is difficult with the parties shown above

Compliance Education

Through cooperation between Advantest's audit teams and the legal affairs departments, we are working to strengthen training activities related to national laws and regulations. In addition, to ensure employee commitment in regard to compliance matters, we are implementing regular e-learning sessions for all Group employees on "The ADVANTEST Way & Code of Conduct" and on the subject of "anti-corruption and anti-bribery."

In FY2018, all of our Group employees took e-learning education and agreed to adhere to compliance.





Materiality Related to Compliance

Compliance is the most important issue in management and is a basic premise of conducting business activities. Advantest has presented standards of behavior in "The ADVANTEST Way" to enable each employee to execute their social responsibility with a strong ethical perspective, and is striving to raise awareness among all employees of the Group.

Materiality	KPI	Material Reasons	Responsible department/division
Environmental aspects	Number of alleged violations of environmental laws and regulations: 0	Work to prevent grave legal violations related to the environment before they happen	CSR & Environmental Affairs Promotion Center/ Environmental Management Officer
Non-discrimination	Number of complaints submitted to the helpline that are properly resolved: All	Aim to eliminate discrimination based on age, gender, nationality, religion, or any other characteristic to facilitate enthusiastic employee participation and motivation worldwide	Corporate Ethics Office, Compliance Committee
Corruption Prevention	Number of alleged incidents of dishonest acts: 0	Eliminate acts that will truly damage the trust of our stakeholders such as bribery and corruption	Legal Department
Antitrust Act	Number of legislative actions: 0	Eliminate anticompetitive practices and promotion of fair trade practices	Legal Department
Social Compliance	Number of alleged violations of laws and regulations: 0	Execute social responsibility with a strong ethical perspective	Corporate Ethics Office, Compliance Committee

Social Responsibility in the Supply Chain

Advantest has published our Procurement Policy and the Advantest CSR Procurement Guidebook on its homepage as a way of fulfilling our social responsibility in a supply chain that includes all of our business partners, and we ask these business partners to adhere to relevant laws and ordinances as well as social norms.

We carry out an annual CSR questionnaire for the business partners who largely impact procurement of Advantest. We devise the questions and conduct this survey to match the perception of all of our business partners by re-examining the priority issues of our Company and questions every year based on an analysis of the assessment results for the previous year with a focus on the Advantest CSR Procurement Guidebook. Furthermore, by compiling the answers for each business partner to provide feedback independently about areas that have been highly evaluated and areas where improvements are requested, we are building relationships in which we will grow together with these business partners.

Corporate Governance

Basic Views

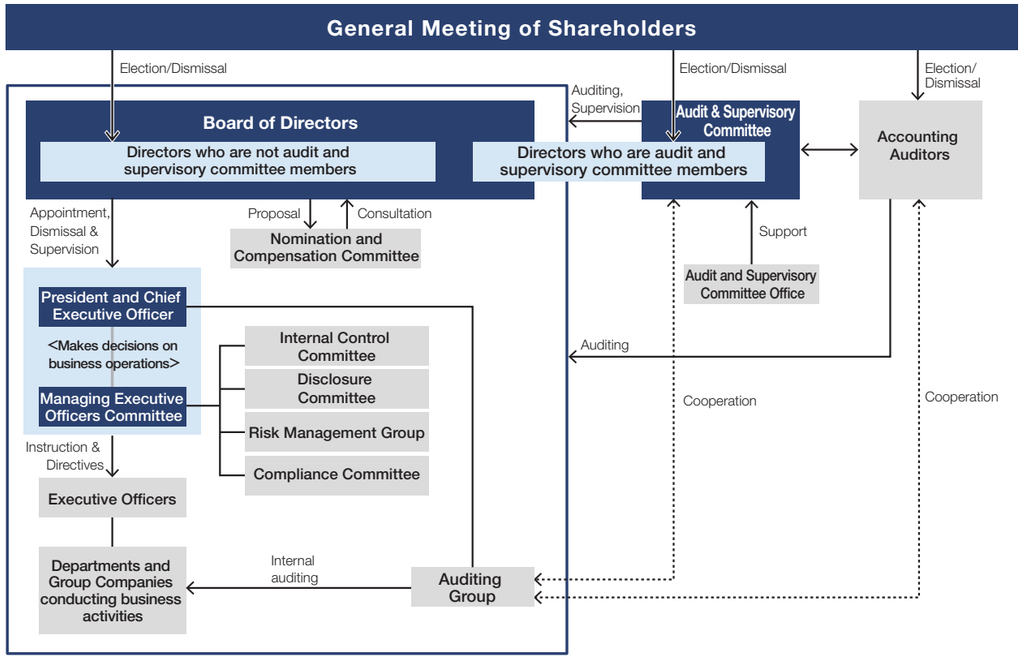
Advantest's corporate mission is "Enabling Leading-Edge Technologies", Advantest constantly encourages self-study and carries out cutting-edge technological development to provide technologies, products and services that will satisfy customers around the world.

In accordance with the corporate mission of the preceding paragraph, and in response to the mandate from stakeholders, Advantest aims to achieve a sustainable level of business development of the Advantest Group and to enhance corporate value over the mid-to-long term. To that end, Advantest will establish a fair and efficient and transparent governance system. Above is a basic view on Advantest's corporate governance.

Advantest discloses the "Corporate Governance Basic Policy" at the following website.

(https://www.advantest.com/investors/management-policy/corporate-governance)

Corporate Governance Scheme



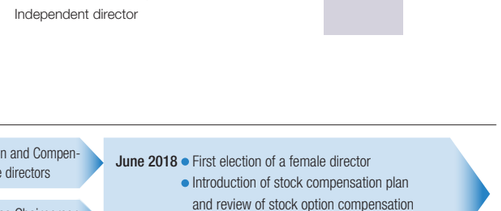


Governance Highlight

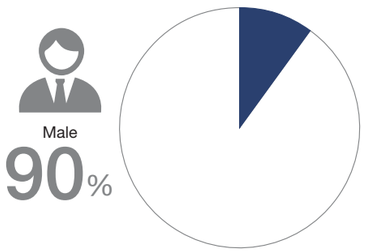
Inside / Outside Director Ratio



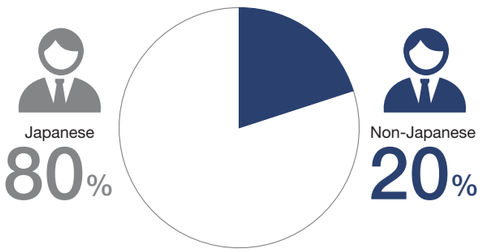
Total Tenure (As of 26 June, 2019)



Gender Ratio



Japanese / Non-Japanese Director Ratio



Chairpersons

Yoshiaki Yoshida
Board of Directors
Representative Director, President and CEO

Yuichi Kurita
Audit & Supervisory Committee
Director

Toshimitsu Urabe
Nomination and Compensation Committee
Independent director

Corporate Governance Initiatives

June 2003 ● Introduction of executive officer system

February 2006 ● First meeting of Nomination and Compensation Committee

June 2006 ● Abolition of Retirement Benefits System for directors ● First election of outside directors

June 2011 ● First election of a non-Japanese director

June 2015 ● Transition to Company with an Audit & Supervisory Committee system

January 2017 ● Majority of members of Nomination and Compensation Committee must be outside directors

June 2017 ● First election of an outside director as Chairperson of Nomination and Compensation Committee

June 2018 ● First election of a female director ● Introduction of stock compensation plan and review of stock option compensation system

Board of Directors



1 Yoshiaki Yoshida
Representative Director, President and CEO

Appointed: 2013
Date of birth: February 8, 1958
Nationality: Japan
Number of shares held: 47,363

Experience and skills:

2 Osamu Karatsu
Outside Director

Appointed: 2012
Date of birth: April 25, 1947
Nationality: Japan
Number of shares held: 2,864

Experience and skills:

3 Toshimitsu Urabe
Outside Director

Appointed: 2019
Date of birth: Oct. 2, 1954
Nationality: Japan
Number of shares held: 0

Experience and skills:

4 Nicholas Benes
Outside Director

Appointed: 2019
Date of birth: April 16, 1956
Nationality: U.S.A.
Number of shares held: 0

Experience and skills:

5 Hans-Juergen Wagner
Director, Managing Executive Officer

Appointed: 2017
Date of birth: January 19, 1960
Nationality: Germany
Number of shares held: 0

Experience and skills:

6 Soichi Tsukakoshi
Director, Managing Executive Officer

Appointed: 2017
Date of birth: February 1, 1960
Nationality: Japan
Number of shares held: 4,712

Experience and skills:

7 Atsushi Fujita
Director, Managing Executive Officer

Appointed: 2019
Date of birth: November 15, 1959
Nationality: Japan
Number of shares held: 2,199

Experience and skills:

8 Yuichi Kurita
Director,Standing Audit & Supervisory Committee Member

Appointed: 2015
Date of birth: July 28, 1949
Nationality: Japan
Number of shares held: 11,349

Experience and skills:

9 Tsuneko Murata
Outside Director, Standing Audit & Supervisory Committee Member

Appointed: 2018
Date of birth: September 27, 1958
Nationality: Japan
Number of shares held: 344

Experience and skills:

10 Kouichi Nanba
Outside Director, Standing Audit & Supervisory Committee Member

Appointed: 2019
Date of birth: September 1, 1949
Nationality: Japan
Number of shares held: 0

Experience and skills:

	Applicable number of executives		Applicable number of executives
Leadership	2	Research and development	2
Finance	2	Global Operation	9
Knowledge of the semiconductor industry	4	Legal affairs, attorney at law	3

*Number of shares held is as of March 31, 2019

Qualifications for Appointment, Committee Positions and Attendance Rate

Board of Directors | Audit & Supervisory Committee | Nomination and Compensation Committee

	Name	Position and assignment	Qualifications for Appointment	Member committees and attendance rate
1	Yoshiaki Yoshida	Representative Director, President and CEO	After his duties as the representative director of a subsidiary of Advantest, Executive Vice President of the Corporate Planning Group, Executive Vice President of the Corporate Relations Group, and Executive Vice President, Nanotechnology Business Group, Mr. Yoshiaki Yoshida has been serving as Representative Director, President and CEO of the Company since January 2017. He has a wealth of knowledge and experience concerning the Company group's business and corporate management. Thus, Advantest believes that he is a suitable person to realize sustainable enhancement of corporate value.	14/14 14/14
2	Osamu Karatsu	Outside Director	Mr. Osamu Karatsu has a wealth of knowledge and experience as a semiconductor specialist. This will contribute to the sustainable enhancement of corporate value of Advantest and the effectiveness of the Board of Directors as it reflects his insights on the industry to which Advantest belongs in the management of the Advantest group. Thus, Advantest believes that he is a suitable person as an outside director.	14/14
3	Newly appointed Toshimitsu Urabe	Outside Director	Mr. Toshimitsu Urabe has extensive management experience at a leading Japanese general trading company, particularly overseas experience in the United States and Asia, experience in business investment decisions, etc., and extensive experience in administrative management for example human resources. This will contribute to the sustainable enhancement of corporate value of Advantest and the effectiveness of the Board of Directors as we reflect his insights in the global management of the Advantest group. Thus, Advantest believes that he is a suitable person as an outside director.	
4	Newly appointed Nicholas Benes	Outside Director	Mr. Nicholas Benes has extensive knowledge and experience about corporate governance matters, and experience in investment banking including M&A transactions. This will contribute to the sustainable enhancement of corporate value of Advantest and the effectiveness of the Board of Directors as we absorb his insights on corporate governance and the perspective of shareholders, and reflect them in the global management of the Advantest group. Thus, Advantest believes that he is a suitable person as an outside director.	
5	Hans-Juergen Wagner	Director, Managing Executive Officer	Mr. Hans-Juergen Wagner has a wealth of knowledge concerning the market trend of ATE business, the Company's core business, and technological development. He also has strong relationships with customers around the world. Thus, Advantest believes that he is a suitable person for further globalization of the Board of Directors.	13/14
6	Soichi Tsukakoshi	Director, Managing Executive Officer	Mr. Soichi Tsukakoshi has been engaged in sales and marketing operations. After his duties as Senior Vice President of the Sales Group, he currently serves as Executive Vice President of the Production Group. He has a wealth of knowledge and experience concerning sales and marketing as well as production. Thus, Advantest believes that he is a suitable person to realize sustainable enhancement of corporate value through enhancement of efficiency of manufacturing and supply chain optimization.	14/14
7	Newly appointed Atsushi Fujita	Director, Managing Executive Officer	Mr. Atsushi Fujita has been engaged in corporate administration, mainly finance and accounting, for many years, including assignments in the US and Germany, and he has gained a wealth of knowledge and experience concerning the Advantest Group's business and corporate management. Thus, Advantest believes that he is a suitable person to realize sustainable enhancement of corporate value.	
8	Yuichi Kurita	Director, Standing Audit & Supervisory Committee Member	Mr. Yuichi Kurita has many years of experience in finance and corporate management and has a wealth of knowledge and experience concerning finance and accounting. He served as a director and an audit and supervisory board member of the Company. Currently serving as a director who is a standing audit and supervisory committee member, he is striving to enhance supervision and oversight and corporate governance. In view of his achievements, Advantest believes that he is a suitable person to enhance supervisory and oversight functions.	14/14 12/12
9	Tsuneko Murata	Outside Director, Standing Audit & Supervisory Committee Member	Ms. Tsuneko Murata has practical experience as an executive at private companies and the Japan Pension Service. In addition, she is familiar with compliance measures and corporate governance as a legal manager. Furthermore, she has abundant experience of auditing as an auditor at Japan Pension Service and Japan Finance Corporation. This will contribute to the enhancement of the audit and supervision of the Advantest group as we absorb her insights stemming from her corporate legal and auditing knowledge and experience and reflect them in the audit and supervision of the Advantest group. Thus, Advantest believes that she is a suitable person to enhance supervisory and oversight functions.	14/14 12/12
10	Newly appointed Kouichi Nanba	Outside Director, Standing Audit & Supervisory Committee Member	Mr. Kouichi Nanba has not been directly involved in the management of a company in the past, but he has a wealth of experience and a high level of expertise in law and compliance, after serving as a judge mainly in charge of civil cases for many years, and engaging in the practice of corporate legal affairs as a lawyer. This will contribute to the enhancement of the audit and supervision of the Advantest group as we absorb his insights and reflect them in the audit and supervision of the Advantest group. Thus, Advantest believes that he is a suitable person as an outside director.	

*From the close of the General Meeting of Shareholders in 2018 to the close of the General Meeting of Shareholders in 2019

Messages from Outside Directors



Deepening and implementation of the Grand Design

“Measurement technology adds value to things.” I heard these words directly from Ikuo Takeda, the founder of Advantest (then known as Takeda Riken Co., Ltd.). Measurement is an activity that seems to be passive at first glance, but it is actually a concept imbued with insight and pride, which is the origin of value in an industrial society. Even today, measurement is the principle that expresses the basis of our business, and it is a living thing.

As the times change, and the content of measurement technology also changes in step with technological progress, the objects of the value it produces have become more diverse and complex. Advantest’s Grand Design was developed for this situation to point out the way we should go. By continuing to deepen and implement these guidelines, we will be able to see what kind of markets we should target next, our role and strategy, and how to develop the products and services we offer. The Grand Design also shows where our governance should be focused and how to proceed with necessary M&A or collaborations with other companies.

In addition to participating in management decisions through consideration of short- and medium-to-long-term issues, I hope to contribute to the development of Advantest’s business through discussions of the deepening and implementation of the Grand Design by offering the perspective of an independent director, as well as the resources of my personal networks, and information that is hard for corporate executives and the company’s ordinary sources to acquire.



Constructive suggestions and advice from knowing actual conditions in the workplace

Vibrant discussion takes place in every meeting of Advantest’s Board of Directors, and reports on efforts to address the homework from the previous meeting are made at the start of the next meeting in an effort to make improvements through PDCA to ensure these discussions do not simply end there.

I think the role of an Outside Director is to properly provide the necessary opinions even if they may be something management does not want to hear. I keep in mind that the inaction of “see no evil, hear no evil, speak no evil” is unacceptable, and place importance on offering opinions on both positive and negative aspects from a risk management perspective.

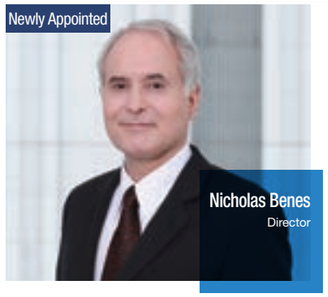
In order to ensure corporate governance functions properly, it is very important to know about actual conditions in the workplace, even from the position of an Outside Director. Every year, Advantest provides all Directors with the opportunity to tour overseas business sites and conduct off-site meetings. Furthermore, Outside Directors who are members of the Audit and Supervisory Committee can also accompany on-site audits by Standing Audit and Supervisory Committee Members to check conditions and things that they notice in the business workplace, leading to constructive suggestions and advice.

With the aim of steadily achieving the Grand Design and the Mid-Term Plan formulated last year, I would like to contribute to the enhancement of the company’s corporate value and improve the soundness and transparency of management to further enhance the company’s strengths—an industry-leading product portfolio, a strong customer base, and its ability to provide global support and comprehensive proposals—and to enable sustained growth as an employee-friendly company, while also ensuring that the company is trusted by all stakeholders including shareholders, customers and suppliers.



Participating in decision-making with a different perspective from Advantest executives

While maintaining a good balance among our stakeholders—shareholders, employees, customers, and the general public—we understand that our corporate mission is to improve sustainable corporate value, and that the structure to achieve this is corporate governance. It is the duty of all directors, including outside directors, to understand the concerns of all stakeholders, but I believe outside directors are in a position to be more aware of shareholders and the public, in contrast to internal directors, who are closer to employees and customers. Through my career at a general trading company and a leasing company with extensive industry contacts in Japan and overseas, I have had many years of experience in business management, as well as HR, business investment, corporate planning, IT, and finance, and have done business with companies in the United States, Hong Kong, and other countries. I hope to contribute to the improvement of Advantest’s corporate value by utilizing my instincts in relation to stakeholders and economic and industrial trends, and participating in decision making with a different perspective from Advantest executives.



Aiming for global leadership in corporate information disclosure

As a longtime ESG advocate I am pleased that Advantest has produced this “integrated annual report.” With the resulting investor feedback, it should improve our understanding and prioritization of factors that impact Advantest’s long-term growth, profitability, sustainability, and global “footprint.”

Some of these factors are obvious, such as the need to attract, develop and retain the best engineers and managers. But some are not. Concepts such as “sustainability” and “materiality” are still in their infancy, so emerging metrics will need to be identified, measured, and tracked year-to-year. We will need to further expand our disclosure, while keeping in mind that automatic information collection by investors will become the norm, complementing human judgement and firm-to-firm comparisons. I hope we can become a leader in this area.

Thus, we should continue to study and discuss these issues internally, and to approach these reporting challenges with humility, so that “integrated reporting” does not turn into a mere PR exercise, but generates feedback loops that maximize our potential for profit, growth, and sustainability.



To bottle things up causes suffering

During my 35 and a half years as a judge, including stints as Chief Judge at the Tokyo District Court and Tokyo High Court, I sometimes had to determine whether notable companies had committed corporate governance violations. In my subsequent career as a lawyer, I was responsible for commercial fraud investigations. I learned that although the system of governance is in place, the people who operate it have not sufficiently discussed the issues that cause problems.

In the courts, the least experienced judges give their opinions first. There is an old saying: “Bottling things up causes suffering.”

This is my first time serving as an outside director, but I hope to speak up constructively whenever I have doubts, and do my job to the utmost to improve Advantest’s corporate governance.

Governance Structure

Board of Directors

The Board of Directors of Advantest, as the management decision making body, shall make decisions on significant matters with respect to the management policies and management strategies for Advantest group, and in its capacity to supervise management, the Board of Directors shall monitor and supervise the status of exercise of duties by Executive Officers. Advantest strengthens the oversight and supervision functions of the Board of Directors in appointing multiple outside directors as members of the Board of Directors. At the Board of Directors meetings, directors with a wealth of knowledge and experience express their opinions from each point of view on the agenda proposed by the management team, and active discussions take place. The Board of Directors of Advantest (including Directors who are Audit and Supervisory Committee members) is composed of five inside directors and five outside directors as of June 26, 2019 Regarding the members of the Board of Directors of Advantest, please refer to pages 53 and 54. Mr. Yoshiaki Yoshida is the chairperson of the Board of Directors of Advantest.

The main discussion agenda of the Board of Directors is as follows

- Basic management policy
- Executive personnel
- Agenda submitted to the General Meeting of Shareholders
- Budget / Financial settlement
- Acquisition or sales of businesses

Audit System

Advantest transitioned to the status of a Company with Audit and Supervisory Committee on June 24, 2015. The Audit and Supervisory Committee investigates the status of business and property, based on the audit policy and audit plan formulated by the Audit & Supervisory Committee. In addition, the Audit & Supervisory Committee audits the execution of duties by Directors, Executive Officers and other business executing agencies through collaboration with internal control teams and Accounting Auditors. Advantest's Audit & Supervisory Committee was composed of one inside director and two outside directors as of June 26, 2019. The Audit & Supervisory Committee has appointed one person as a standing Audit & Supervisory Committee member in order to enhance effectiveness of audits and supervisory function by the Audit & Supervisory Committee through information gathering by attending important meetings and conducting hearings about reports on operations received from execution departments as well as through strengthened collaboration between the accounting auditor and the internal audit division. Mr. Yuichi Kurita, a member of the Audit & Supervisory Committee member, has many years of experience in Advantest's financial and administrative officers and has sufficient knowledge of finance and accounting. Also, Ms. Tsuneko Murata and Mr. Kouichi Nanba, who are members of the Audit & Supervisory Committee, have sufficient knowledge of legal affairs. The Chairperson of the Audit & Supervisory Committee is Mr. Yuichi Kurita.

The Audit & Supervisory Committee appoints two employees to support the duty of the Audit & Supervisory Committee. The Audit & Supervisory Committee, the Auditing Group and other internal control departments, the Accounting Auditors, and the auditors of each Advantest group collaborate with one another so as to carry out regular discussion and timely meetings.

With regard to internal auditing, Advantest has established an audit office and several selected internal employees routinely monitor the operation status of the company, as well as identifying problems and making recommendations for improvement.

Regarding accounting audits, Advantest has audited with Ernst & Young ShinNihon LLC and received predetermined audits. The certified public accountants who executed Advantest's accounting audit work in FY2018 are Mr. Makoto Usui, Ms. Kaeko Kitamoto and Mr. Keiichi Wakimoto. Number of years of all those auditors continuous audit is within seven years. In addition, assistants performing Advantest's accounting audit work include those with expert knowledge such as system experts, with CPAs as the main constituents.

Nomination and Compensation Committee

Advantest has established the Nomination and Compensation Committee as a non-mandatory organization, which complements the Board of Directors, to decide appointment/dismissal of Directors and Executive Officers and their compensation. The Nomination and Compensation Committee is responsible for the functions of both "the Nomination Committee" and "the Compensation Committee." The Nomination and Compensation Committee shall be responsible for improving the fairness, rationality and transparency of appointment/dismissal of Directors and Executive Officers and their compensation.

The Nomination and Compensation Committee is composed of members selected in members of the Board of Directors under the resolution of the Board of Directors. To introduce an independent viewpoint, more than a half of the members are independent Directors. The Human Resource Department is its secretariat.

The main discussion agenda of the Nomination and Compensation Committee is as follows.

- Revision of "Directors and Executive Officers Nomination/Dismissal Policy and Procedures" and "Directors and Executive Officers Compensation Policy and Procedures."
- Compensation of directors and officers (e.g. Fixed Compensation, Performance-linked bonus and Stock Compensation etc.)
- Nomination of candidates of directors and officers in FY2019.

Present members are Mr. Toshimitsu Urabe, Mr. Kouichi Nanba and Mr. Yoshiaki Yoshida. Mr. Toshimitsu Urabe is a chairperson.

The Nomination and Compensation Committee will recommend persons as candidates to the Board of Directors who will contribute to a sustainable level of business development and enhancement of corporate value over the mid-to-long term in accordance with the "Directors and Executive Officers Nomination/Dismissal Policy and Procedures" prescribed by the Board of Directors regarding Directors and Executive Officers. In addition, regarding independent outside directors, "Independence Criteria of Independent Outside Directors" prescribed by the Board of Directors will also apply in addition to the "Directors and Executive Officers Nomination/Dismissal Policy and Procedures" mentioned previously. Candidates recommended to the Board of Directors should have a wealth of knowledge and can be expected to contribute actively to the Board of Directors.

Appointment criteria of Independent Directors

The candidate should fulfill "Independence Standards for Independent Directors" and should meet one or more of the below criteria. Personality, concurrent positions as another company's director, executive officer or auditor, years of appointment as an Independent Director of Advantest and the like will be considered in addition to the criteria.

- a legal professional such as attorneys
- a person who has management experience for another company
- a person who has excellent knowledge and experience in finance or accounting
- a person who has excellent knowledge and experience in the Advantest's business field
- a person who has wide and deep experience in R&D
- a person who has enough experience or ability equivalent to above persons

Executive Officer Compensation / Board Effectiveness

Design of Compensation Aimed at Enhancing Corporate Value

Policy and Process for Determining Compensation
Compensation for Directors and Executive Officers is described in “Directors and Executive Officers Compensation Policy and Procedure” as follows. Furthermore, compensation for Executive Directors and Executive Officers is made up of bonuses and stock compensation linked to performance in addition to fixed compensation, and the appropriate ratio of these is deliberated by the Nomination and Compensation Committee and determined by the Board of Directors. Directors who are members of the Audit & Supervisory Committee and Outside Directors receive only fixed compensation.

“Directors and Executive Officers Executive Compensation Policy and Procedure”

1. Purpose

The Board of Directors establishes this Policy and Procedure so that the Directors and Executive Officers Compensation shall be determined to make it effective for a sustainable level of business development and mid-to-long term enhancement of corporate value, to share the shareholders’ perspective, and to secure and motivate superior human resources who manage Advantest group;

2. Structure and Policy in Determination

The Compensation for Directors (excluding Directors who are Audit & Supervisory Committee members) and Executive Officers is comprised of (1) Fixed-Compensation, (2) Performance-linked Bonus and (3) Stock Compensations, to contribute for the purpose written in 1. The amounts and ratios are set in appropriate levels.

The Compensation for Independent Directors is comprised only of (1) fixed-compensation, by considering their roles and independence from the management.

(1) Fixed-Compensation is determined an appropriate level by referring the market data, and the position and responsibilities.
(2) Performance-linked Bonus is an incentive for short-term performance, and to be calculated based on the consolidated financial results of Net Sales, Operating Income Ratio, Net Income , and ROE etc..
(3) Stock Compensations are incentives for long term performance and also to share the shareholders’ perspective. Both of “Stock Option” and “Performance-based Stock Remuneration” will be granted by considering Advantest performance trend, economic situations, stock price in the market and like. The vested stocks by “Performance-based Stock Remuneration” will be fluctuated by the consolidated financial results of Net Sales, Operating Income Ratio, Net Income, and ROE etc..

3. Procedures in Determination

In response to consultation from the Board of Directors, the Nomination and Compensation Committee deliberates and proposes the Compensation for Directors (excluding Directors who are Audit & Supervisory Committee members) and Executive Officers to the Board of Directors. The Board of Directors deliberates and determines the compensation based on the proposal from the Nomination and Compensation Committee.

The Audit & Supervisory Committee deliberates and determines the compensation for Directors who are Audit & Supervisory Committee members.

Upper Limits on Director Compensation

	Monetary Compensation	Performance-based Stock Remuneration	Stock Options
Directors who are not members of the Audit & Supervisory Committee (excluding Outside Directors)	No more than JPY600 million per year(*1)	No more than 200 million yen per year(*2)	No more than 200 million yen per year(*2)
Outside Directors who are not members of the Audit & Supervisory Committee		Not subject to limits	
Directors who are Audit & Supervisory Committee Members	No more than JPY100 million per year(*1)		

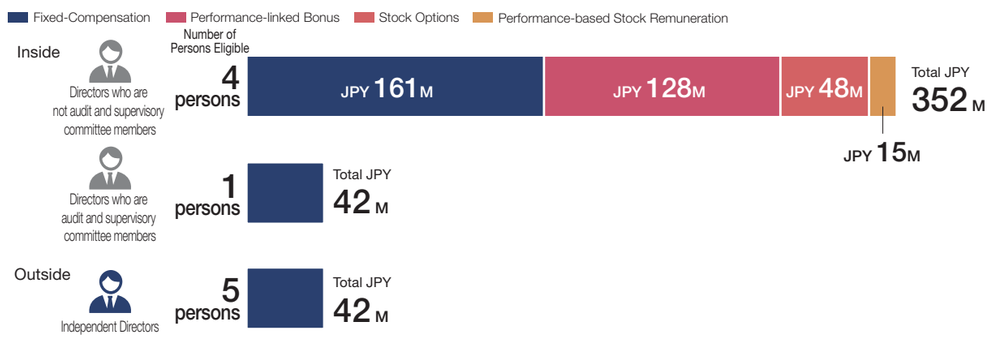
(*1) By resolution of the 73rd Ordinary General Meeting of Shareholders held on June 24, 2015
(*2) By resolution of the 76rd Ordinary General Meeting of Shareholders held on June 27, 2018

Directors Who Received Compensation of 100 Million yen or More and the Amount of Compensation Thereof (FY2018)

Name	Total Amount of Compensation (million JPY)	Type of Officer (As of March 31, 2019)	Company Category	Total Amount of Compensation by Type			
				Fixed-Compensation	Performance-linked Bonus	Stock Options	Performance-based Stock Remuneration
Yoshiaki Yoshida	132	Representative Director, President and CEO	Advantest Corporation	60	51	17	4
Saebun Myung	108	Advantest Corporation	Advantest Corporation	50	42	12	4
Hans-Juergen Wagner	112	Director, Managing Executive Officer	Advantest Corporation	10	—	10	3
		Managing Director	Advantest Europe GmbH	50	39	—	—

* The amount of compensation of Hans-Juergen Wagner also includes the amount paid by Advantest Europe GmbH. The exchange rate is calculated at €1=JPY128.82

Composition of Compensation for Directors (FY 2018)



(Note) There were four Outside Directors as of March 31, 2019, but the above compensation amounts and numbers include one person who stepped down on June 27, 2018.

Results of Board Meeting Effectiveness Survey

At a Board of Directors’ meeting, all directors answered a questionnaire to evaluate the effectiveness of their roles and obligations. Advantest analyzed our organization, operation and discussion status by collecting opinions.

Result of FY2017 and action in FY2018

It was pointed out that there is room for further improvement in improving the effectiveness of the successor plan such as for the representative director, and the election and dismissal process of the management team and training for the Directors. Based on the item pointed out above, the Board of Directors discusses the succession plan and dismissal process and Advantest describes the result in the “Advantest Corporate Governance Policy” and the “Corporate Governance report.” Advantest will provide corporate governance training to the members of Board of Directors and Executive Officers (including foreigners). Advantest will provide other training as necessary. The points where improvement is needed will be addressed in future. In addition, there were indications about improving the diversity of the members of the Board of Directors. One new female director was appointed at the annual General Meeting of Shareholders of June 27, 2018.

Result of FY2018

Followings are the main items that were pointed out. Advantest will consider taking action on these items.

- Succession plan of Representative Director
- Reanalysis of risks that influence our business
- Investigation of director training menu

11 Year Financial & Non-Financial Highlights

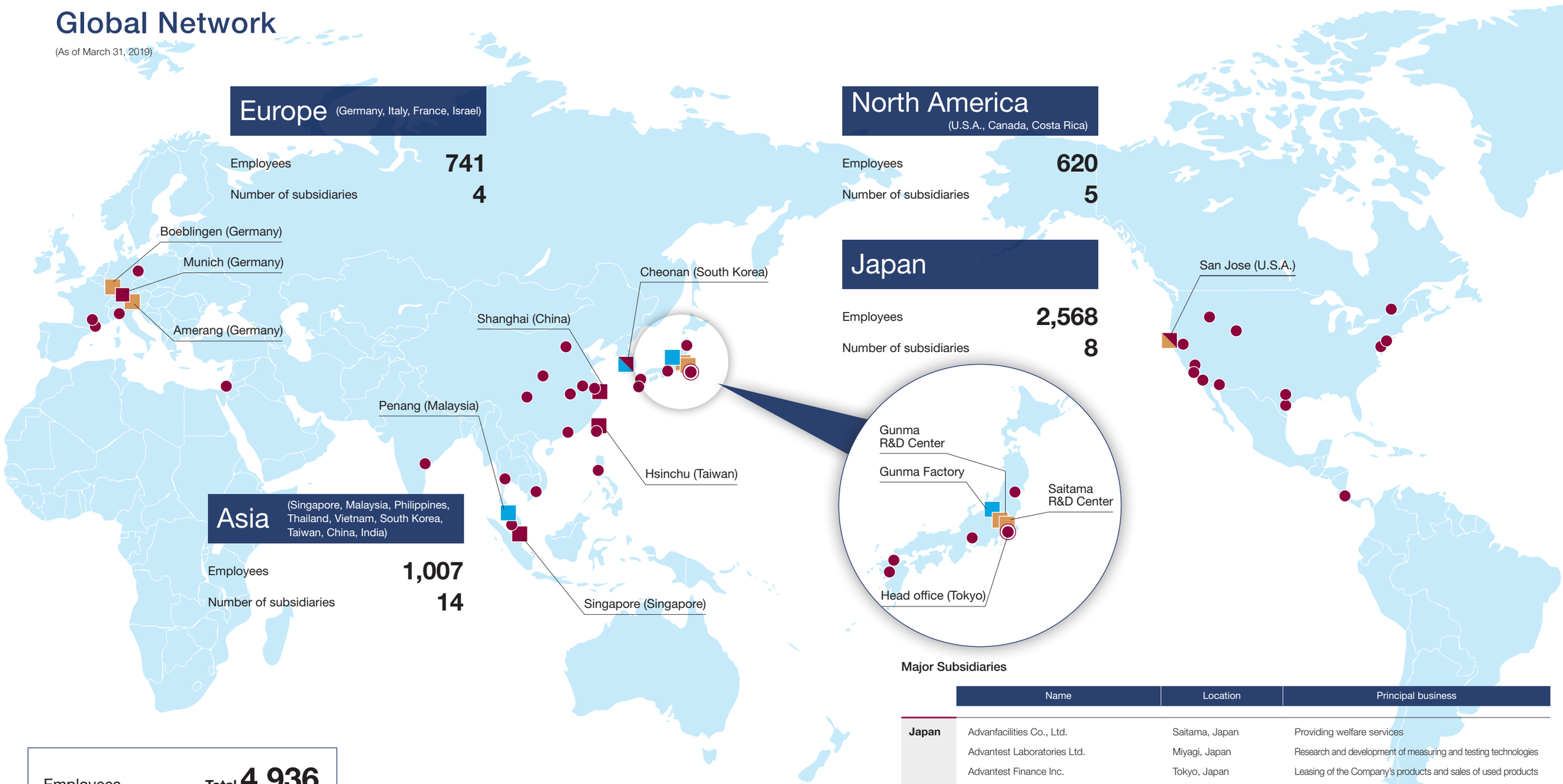
Advantest corporation and its consolidated subsidiaries
Each fiscal year beginning on April 1

	US GAAP						IFRS				
											Unit Million yen
	FY2008 (2009/3)	FY2009 (2010/3)	FY2010 (2011/3)	FY2011 (2012/3)	FY2012 (2013/3)	FY2013 (2014/3)	FY2014 (2015/3)	FY2015 (2016/3)	FY2016 (2017/3)	FY2017 (2018/3)	FY2018 (2019/3)
Financial Results											
Fiscal year											
Net sales	76,652	53,225	99,634	141,048	132,903	111,878	163,803	162,111	155,916	207,223	282,456
Cost of sales	56,837	27,297	51,164	72,300	63,983	62,545	72,048	70,636	66,176	100,635	128,417
Gross profit	19,815	25,928	48,470	68,748	68,920	49,333	91,755	91,475	89,740	106,588	154,039
Selling, general and administrative expenses(*1)	69,272	37,567	42,359	67,911	68,840	85,702	74,897	78,878	75,835	82,101	89,377
Operating income	(49,457)	(11,639)	6,111	837	80	(36,369)	16,858	12,597	13,905	24,487	64,662
EBITDA(*2)	(40,738)	(7,325)	10,320	7,675	8,143	(28,101)	21,588	17,562	19,063	29,511	69,629
Income (loss) before income taxes	(52,761)	(9,926)	5,551	(3,442)	(1,293)	(35,501)	20,767	11,767	15,022	24,282	66,211
Net income (loss) attributable to owners of the parent	(74,902)	(11,454)	3,163	(2,195)	(3,821)	(35,540)	16,753	6,694	14,201	18,103	56,993
Cash flows from operating activities	2,357	(17,746)	(693)	12,302	(2,215)	(3,776)	24,481	7,728	15,833	28,254	44,792
Cash flows from investing activities	(32,507)	10,824	(5,828)	(37,670)	(11,498)	(4,711)	(1,310)	(2,395)	(3,521)	(2,329)	(15,915)
Cash flows from financing activities	(8,930)	(1,803)	(12,028)	9,887	(2,914)	27,202	(1,298)	(13,531)	(1,002)	(15,237)	(13,724)
Free cash flows(*3)	(30,150)	(6,922)	(6,521)	(25,368)	(13,713)	(8,487)	23,171	5,333	12,312	25,925	28,877
Cash and cash equivalents at end of year	105,455	96,439	75,323	58,218	45,668	68,997	97,574	85,430	95,324	103,973	119,943
Fiscal year-end											
Shareholders' equity	163,616	150,242	138,132	131,552	141,241	116,252	101,810	93,619	109,517	124,610	198,731
Total assets	202,059	188,663	180,312	219,226	225,515	229,856	233,237	210,451	231,603	254,559	304,580
Information per share											Unit:¥
Basic earnings (loss) per share (¥)	(419.09)	(64.09)	18.03	(12.67)	(22.03)	(204.10)	96.15	38.35	81.07	101.94	302.35
Diluted earnings (loss) per share (¥)	(419.09)	(64.09)	18.03	(12.67)	(22.03)	(204.10)	87.67	35.38	73.95	92.69	287.37
Shareholders' equity per share (¥)	915.47	840.65	797.20	759.22	812.70	667.36	583.28	536.28	619.33	696.04	1,004.53
Dividend per Share	30.00	10.00	10.00	15.00	20.00	15.00	15.00	20.00	25.00	32.00	92.00
Number of shares issued at year-end	199,566,770	199,566,770	199,566,770	199,566,770	199,566,770	199,566,770	199,566,770	199,566,770	199,566,770	199,566,770	199,566,770
Management indicator											Unit:%
Gross profit margin	25.9	48.7	48.6	48.7	51.9	44.1	56.0	56.4	57.6	51.4	54.5
Operating Income Margin	(64.5)	(21.9)	6.1	0.6	0.1	(32.5)	10.3	7.8	8.9	11.8	22.9
Net income ratio	(97.7)	(21.5)	3.2	(1.6)	(2.9)	(31.8)	10.2	4.1	9.1	8.7	20.2
SG&A ratio to sales	90.4	70.6	42.5	48.1	51.8	76.6	45.7	48.6	48.7	39.6	31.6
Overseas net sales as a % of total net sales	67.7	77.5	77.5	88.6	89.4	89.1	92.0	92.0	88.2	93.2	94.7
R&D Expenses (¥ million)	23,713	17,896	21,197	30,303	33,062	32,670	29,507	31,298	31,170	33,540	37,852
R&D as a % of total net sales	30.9	33.6	21.3	21.5	24.9	29.2	18.0	19.3	20.0	16.2	13.4
EBITDA margin	(53.1)	(13.8)	10.4	5.4	6.1	(25.1)	13.2	10.8	12.2	14.2	24.7
Capital Expenditures (¥ 100 million)	46	34	38	70	126	56	42	40	48	54	66
Depreciation and Amortization (¥ 100 million)	87	43	42	68	81	83	47	50	52	50	50
Shareholders' equity ratio	81.0	79.6	76.6	60.0	62.6	50.6	43.7	44.5	47.3	49.0	65.2
ROE	(35.9)	(7.3)	2.2	(1.6)	(2.8)	(27.6)	18.5	6.9	14.0	15.5	35.3
ROA	(21.1)	(5.1)	3.0	(1.7)	(0.6)	(15.6)	9.8	5.3	6.8	10.0	23.7
Net D/E ratio (Times)	—	—	—	0.2	0.2	0.5	0.5	0.5	0.4	0.2	—
Dividend payout ratio	—	—	55.5	—	—	—	15.6	52.2	30.8	31.4	30.4
Non-financial data											
Number of employees(*4)	3,418	3,354	3,405	4,780	4,918	4,838	4,744	4,638	4,565	4,721	4,936
(Overseas affiliates employees out of the above employees)	803	755	787	1,954	2,172	2,146	2,107	2,063	2,063	2,168	2,368
Female employees as percentage of total workforce	—	—	—	—	—	—	17.3	16.9	16.9	17.6	18.0
GHG CO_2 emissions (t-CO_2)	26,673	24,433	23,021	27,373	30,853	36,431	34,600	32,495	34,338	35,268	38,088
Number of Patents	2,917	3,005	2,968	3,190	3,752	3,849	3,201	2,971	2,743	2,667	2,531

(*1) Selling, general and administrative expenses from the fiscal year ended March 31, 2015 are composed of selling, general and administrative expenses, other income/expenses.
Figures until the fiscal year ended March 31, 2014 consist of research and development expenses, selling, general and administrative expenses, restructuring and impairment charges.
(*2) EBITDA= Operating income + Depreciation and amortization
(*3) Free cash flows= Cash flows from operating activities + Cash flows from investing activities
(*4) Headcount as of the end of each fiscal year (including temporary employees)

Global Network

(As of March 31, 2019)



Europe (Germany, Italy, France, Israel)

Employees	741
Number of subsidiaries	4

North America (U.S.A., Canada, Costa Rica)

Employees	620
Number of subsidiaries	5

Japan

Employees	2,568
Number of subsidiaries	8

Asia (Singapore, Malaysia, Philippines, Thailand, Vietnam, South Korea, Taiwan, China, India)

Employees	1,007
Number of subsidiaries	14

Employees	Total 4,936
Number of subsidiaries	Total 31

Head office | Regional headquarters | Major R&D facilities | Major factories | Service locations

Major Subsidiaries

	Name	Location	Principal business
Japan	Advanfacilities Co., Ltd.	Saitama, Japan	Providing welfare services
	Advantest Laboratories Ltd.	Miyagi, Japan	Research and development of measuring and testing technologies
	Advantest Finance Inc.	Tokyo, Japan	Leasing of the Company's products and sales of used products
	Advantest Kyushu Systems Co., Ltd.	Fukuoka, Japan	Development, sales and support of the Company's products
	Advantest Component, Inc.	Miyagi, Japan	Development and manufacturing of the parts
Over-seas	Advantest America, Inc.	California, U.S.A.	Development and sales of the Company's products
	Advantest Europe GmbH	Munich, Germany	Development and sales of the Company's products
	Advantest Taiwan Inc.	Hsinchu, Taiwan	Sales of the Company's products
	Advantest (Singapore) Pte. Ltd.	Singapore	Sales of the Company's products
	Advantest Korea Co., Ltd.	Cheonan, Korea	Support for sales of the Company's products
	Advantest (China) Co., Ltd.	Shanghai, China	Support for sales of the Company's products
	Advantest (M) Sdn. Bhd.	Penang, Malaysia	Manufacturing of the Company's products

Information

Corporate Overview / Stock Information

As of March 31, 2019

Corporate Overview

Registered Name	ADVANTEST CORPORATION
Head Office	Shin Marunouchi Center Bldg., 1-6-2, Marunouchi, Chiyoda-ku, Tokyo 100-0005
URL	https://www.advantest.com/
Established	December 1954
Capital	32,363 million yen
No. of Employees	4,936 (As of March 31, 2019. Include temporary employees.)
Business Description	Semiconductor and Component Test System Business, Mechatronics System Business, Services, Support and Others

Stock Information

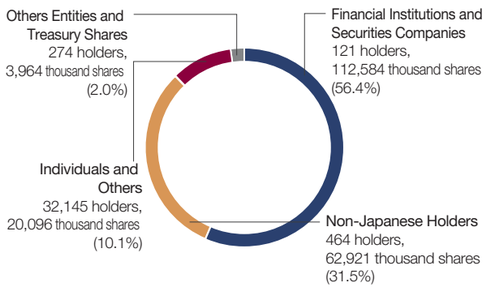
Fiscal Year	April 1 through March 31	No. of Shares Outstanding	199,566,770
Ordinary General Meeting of Shareholders	June	Number of Shareholders	33,004
No. of Issuable Shares	440,000,000		

Major Shareholders

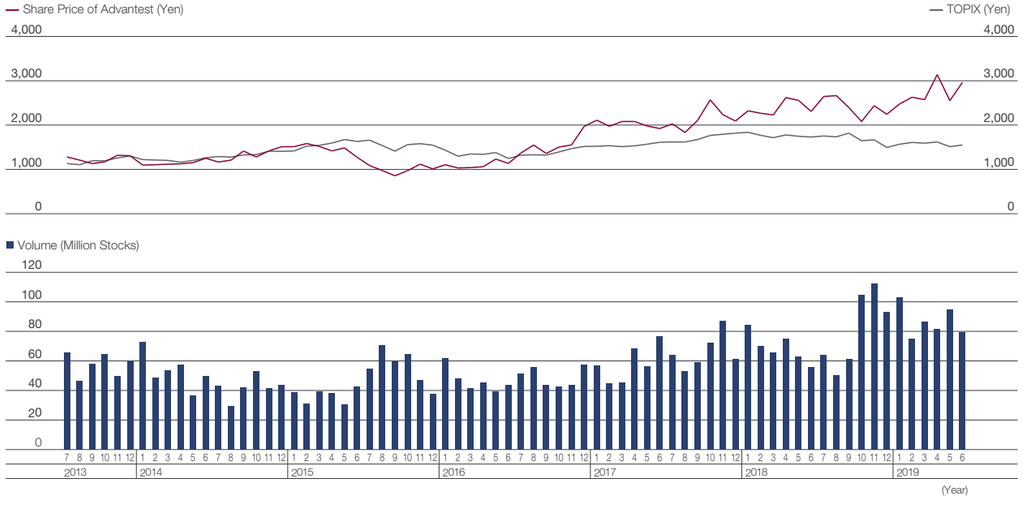
Name	Number of Shares (in thousand)	Percentage of Ownership (%)
The Master Trust Bank of Japan, Ltd. (trust account)	48,995	24.73
Japan Trustee Services Bank, Ltd. (trust account)	21,689	10.94
Trust & Custody Services Bank, Ltd. (investment trust account)	5,992	3.02
THE BANK OF NEW YORK MELLON 140051	4,220	2.13
Japan Trustee Services Bank, Ltd. (trust account 4)	3,795	1.91
CDSIL AS DEPOSITARY FOR OLD MUTUAL GLOBAL INVESTORS SERIES	3,014	1.52
JP MORGAN CHASE BANK 385151	2,981	1.50
BNYM FOR GOLDMAN SACHS JAPAN	2,871	1.45
Japan Trustee Services Bank, Ltd. (trust account 5)	2,673	1.34
SSBTC CLIENT OMNIBUS ACCOUNT	2,660	1.34

(Notes) 1. The number of treasury shares (1,460 thousand shares) that Advantest owns does not include Advantest shares which the Board Incentive Plan Trust owns (57 thousand shares) and Advantest shares which the Employee Stock Ownership Plan Trust owns (214 thousand shares).
2. Number of Shares is rounded down to the nearest thousand.
3. Percentage of Ownership is rounded down to the second decimal place.

Breakdown of Shareholders



Share Prices and Volume



Our Official Website



https://www.advantest.com/



Products

https://www.advantest.com/products



Investors

https://www.advantest.com/investors



Sustainability Report 2019

https://www.advantest.com/sustainability-report

External Recognition (2018)

- Selected as constituent stock of FTSE4Good Index series and FTSE Blossom Japan Index
- Chosen as member of SNAM Sustainability Index
- Named a 2018 Thomson Reuters Top 100 Global Technology Leader
- Earns 30th consecutive appearance on the VLSIresearch 10 BEST List in Annual Customer Satisfaction Survey
- Received excellence award in the Environmental Report Division of Environmental Communication Awards

Publication Policy

In addition to financial information such as the Company's performance, business activities, and Mid-Term Management Plan, the Integrated Annual Report 2019 contains comprehensive environment (E), social (S), and governance (G) information.

Please see Advantest's website for financial, CSR, and product information not contained in this report.

This is our very first attempt at an "Integrated Annual Report," and so we welcome comments and feedback from readers as to how it could be made more helpful.

Contact

Corporate Communications Division
TEL +81-3-3214-7500 FAX +81-3-3214-7711
https://www.advantest.com/contact/