

The Advantest Way

Since our founding in 1954, Advantest has developed and supplied the leading-edge measurement technologies that customers need, contributing to safety, security, and comfort worldwide through electronics quality assurance.

In 2019, the 65th anniversary of our founding, we codified our mission, vision, and core values in the form of "The Advantest Way". The corporate culture articulated in The Advantest Way is the force that drives Advantest's business growth.



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.

Vision : What we want to be

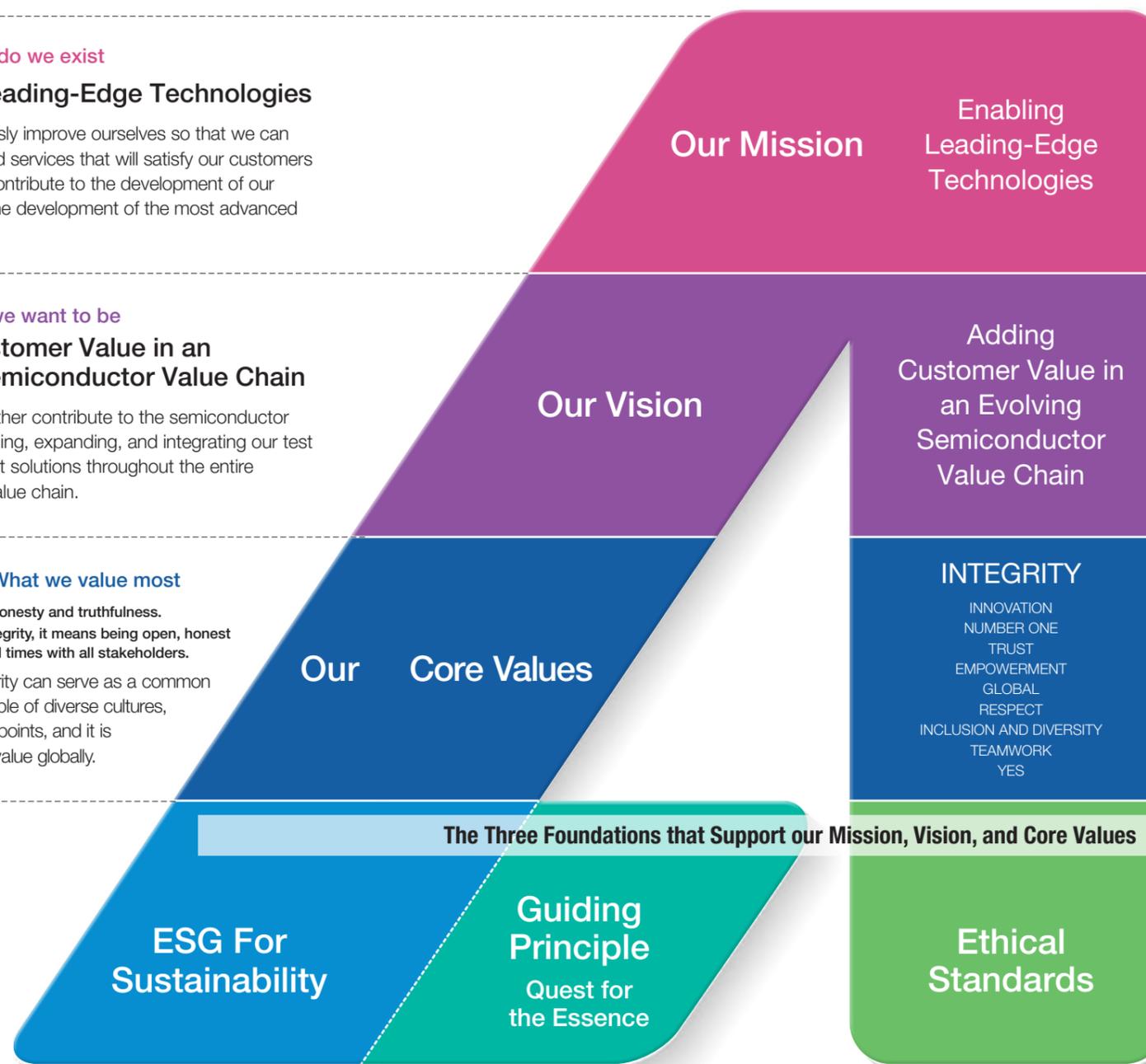
Adding Customer Value in an Evolving Semiconductor Value Chain

Advantest will further contribute to the semiconductor industry by enriching, expanding, and integrating our test and measurement solutions throughout the entire semiconductor value chain.

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.



Core Values [INTEGRITY]

I	N	T	E	G	R	I	T	Y
INNOVATION is our Lifeblood	NUMBER ONE is our Aspiration	TRUST is our Foundation	EMPOWERMENT is our Motivation	GLOBAL is our Reach	RESPECT is our Heart	INCLUSION AND DIVERSITY is our Commitment	TEAMWORK is our Approach	YES is our Attitude
<ul style="list-style-type: none"> • We challenge the status quo. • We embrace technologies and entrepreneurship to create superior customer value. 	<ul style="list-style-type: none"> • We earn our leadership position in our business fields every day. • We establish an impeccable standard of excellence. 	<ul style="list-style-type: none"> • We are a trusted, collaborative partner. • We have confidence in each other's capabilities and intentions. 	<ul style="list-style-type: none"> • We are empowered to make decisions with an owner's mentality. • We own Advantest's success. 	<ul style="list-style-type: none"> • We embrace a world of constant change. • We are always ready. Anytime. Anywhere. 	<ul style="list-style-type: none"> • We respect different cultures, customs, and laws. • We never compromise on our ethical standards. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • We deliver on results promised to each other. • We recognize that impossible is an opinion, and with imagination, we can change the world.

Disclaimer Regarding Forward-Looking Statements

This report contains statements about Advantest's current plans, estimates, strategies and outlook. Anything that is not historical fact is a prediction of future performance based on the best judgment of management, derived from the information available at the time this booklet was published. The semiconductor test system market is constantly subject to fluctuations that affect Advantest's core business. In addition, important factors that can affect actual business performance include economic trends, rapid exchange rate fluctuations, intensifying competition, and natural disasters. Due to these risks and uncertainties, our future performance may differ materially from what is described in this publication. Therefore, it should not be assumed that the goals set forth herein will necessarily be achieved.

Scope of This Report This report covers FY2019 (April 1, 2019 - March 31, 2020). However, it also mentions dates before and after this period as necessary. The data aggregation range is identical with the scope of Advantest's consolidated financial statements, unless otherwise stated.

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About Advantest

Advantest is a provider of test and measurement solutions focusing on electronic measurement technology. Our core product line is semiconductor test equipment. These systems measure and test semiconductors with high accuracy and efficiency to ensure that they operate properly and meet performance and reliability requirements.

In their diverse roles in products used throughout the world, and especially in the processing and storage of large volumes of data, semiconductors are now a form of social infrastructure. Advantest plays a key part in the creation of a sustainable future for humanity by assuring their quality and reliability.

Tested by **ADVANTEST**



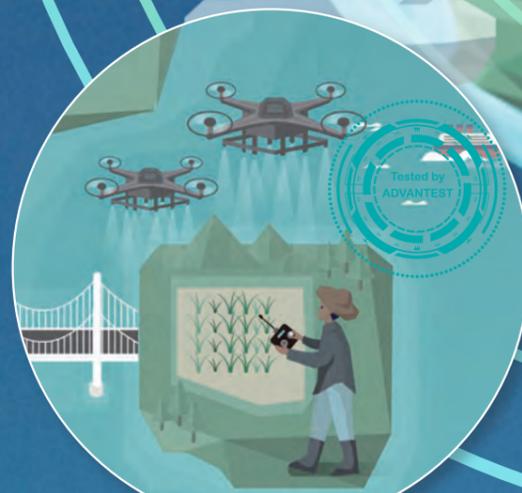
Medical Equipments



Data Centers



Base-station



Smart Agriculture



Smartphones



Robotics



Automotives



Greenhouse Gas emission reduction



VR & Game consoles

Advantest's History

Measuring the Future

Advantest's 66-Year History

Since Advantest's founding, we have paved the way for successive waves of innovation by providing leading-edge measurement technology. We will continue to support technological innovation and semiconductor production volume growth through test, contributing to the sustainable development of the world we all share.

- 1954 Takeda Riken Industries founded with four employees.
- 1957 TR-124B Electronic Counter for digitally measuring frequency became a hit product.
- 1963 Launched the Digital Multimeter, the first Japanese-made digital voltmeter.
- 1972 Launched the first Japanese-made semiconductor test systems, the T-320/20 and T-320/30.
- 1979 Launched the VLSI test system with a test frequency of 100MHz, boasting the highest performance in the world.



Our founding team. Founder Ikuo Takeda is second from left in the front row.



Our first product, the Micro Micro Ammeter.

- 1982 Established a local subsidiary in the United States. Facilities were later established elsewhere around the world.
- 1985 The company's name was changed to Advantest Corporation. Obtained the No. 1 share in the semiconductor test equipment market, according to VLSIresearch.
- 1993 Launched the T6691, a VLSI test system featuring an industry-best test speed of 500MHz/1GHz
- 1995 250MHz S-DRAM memory test system T5581 launched; become a best-selling product.



The T3340 LSI test system being delivered to a US customer in 1982



T3380 VLSI test system.



A blockbuster product of the 1990s, the T5581 memory test system

- 2003 Acquired Japan Engineering Co., Ltd.
- 2008 Acquired Credence Systems GmbH.
- 2011 Acquired major semiconductor test equipment provider Verigy Ltd. and started selling the V93000 Smart Scale test system



T2000 open architecture test system.



Press conference announcing Advantest's acquisition of major semiconductor testing equipment provider Verigy in 2011.

- 2018 New mid- to long-term management policy announced.
- 2019 Acquired the system level test business of Astronics, Inc.
- 2020 Acquired US company Essai, Inc. and announced a partnership with US company PDF Solutions Inc.



Advantest Developer Conference VOICE (2018).



System level test system.



Sales of the Company



Advantest Enters the Semiconductor Test Equipment Market by [Measuring the Future]

Under founder Ikuo Takeda, who began his career at the Electrical Testing Laboratory of Japan's Ministry of Communications, the company released a string of hit products. We continued to grow in step with the Japanese electronics industry, and calibrated our R&D investments to the coming era of semiconductors by applying our measurement technology to the development of test equipment. Overcoming a management crisis in the early 1970s, we succeeded in developing world-class semiconductor test systems combining high-speed, highly accurate measurement capability with mass-production performance that can measure up to thousands of semiconductors simultaneously.

Advantest Grows by [Measuring the Future] of the Semiconductor Industry

In the last decades of the 20th century, semiconductor demand expanded enormously with the popularization of personal computers and the Internet. Advantest's semiconductor test systems, combining state-of-the-art measurement technology with support for mass production, helped to enable semiconductor evolution and production growth, which in turn led to further demand for our products. In 1985, we gained the leading market share in the world semiconductor test equipment market for the first time, marking the central importance of our test system business to the company.

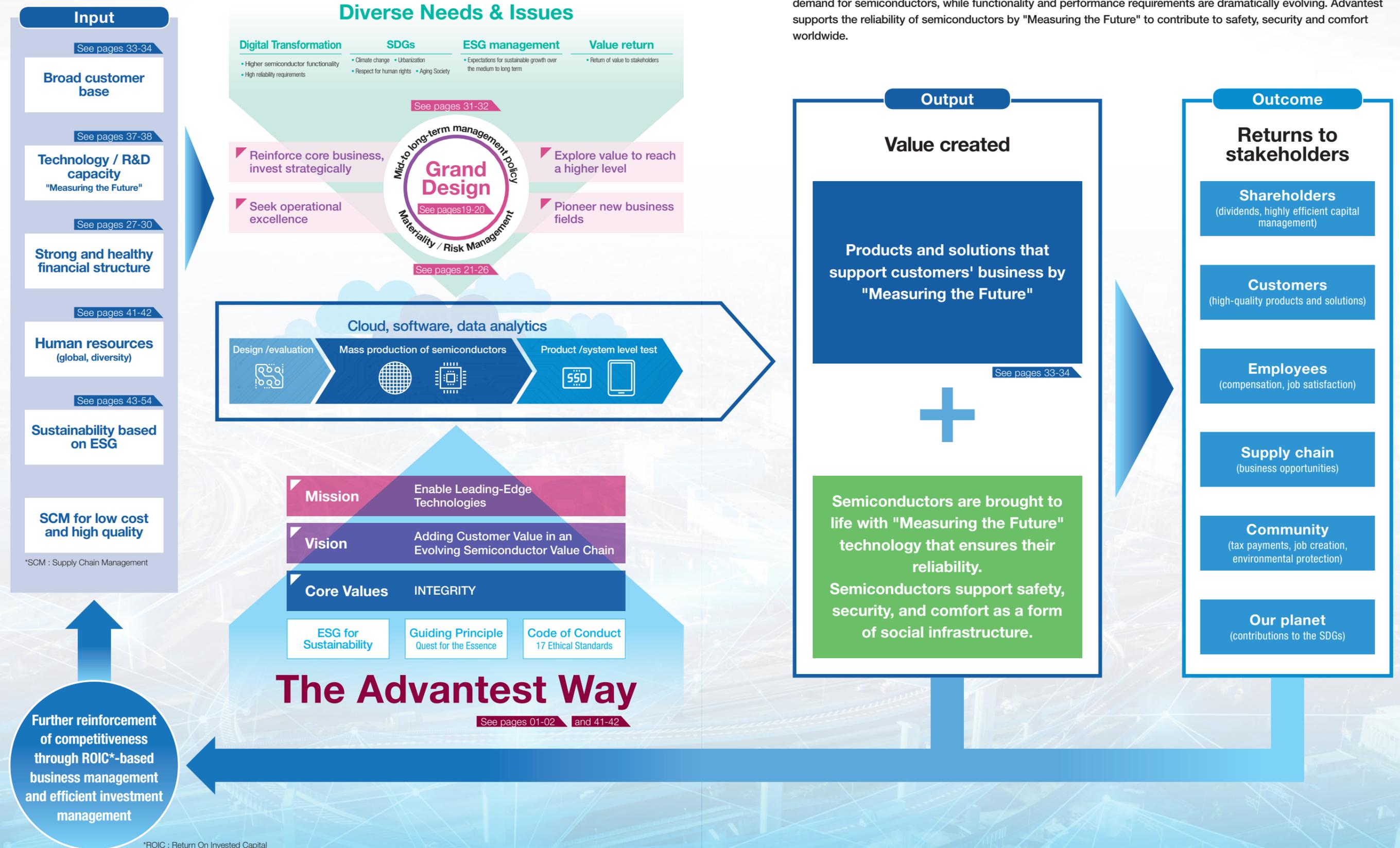
Advantest Overcomes Intense Competition by [Measuring the Future] Better

With the bursting of the dot-com bubble and through 2008 financial crisis, the main semiconductor demand driver shifted from PCs to smaller, more affordable smartphones. In response, the semiconductor test equipment market demanded higher efficiency and lower costs, kicking off an era of intense competition when loser companies were weeded out. Advantest emerged stronger than ever, thanks to our industry-leading measurement technology, the cost advantages we offer for mass production, and our aggressive M&A policy.

As the Market Enters a New Growth Phase, Advantest Continues to [Measuring the Future] of Semiconductor Evolution

Semiconductors now play a central role not only in smartphones but also in automobiles, data servers, and various other devices that support our safety, security, and comfort. As devices gain in functionality, complexity, and capacity, reliability demands also continue to grow. Semiconductor test items and test times are increasing, underlining the importance of leading-edge test technology. To capture this opportunity, we formulated a new mid- to long-term management policy in 2018. By adding new value in the evolving semiconductor value chain, including system-level test and cloud-based services, Advantest aims to become a company that will last for a hundred years and more, while proudly upholding our founders' focus on unique technology and dedication to meeting customer needs.

The Value Creation Process and Advantest's Business Model



As our lives become ever more digitized through the IoT as well as the shift to online, value creation is increasingly driven by data rather than physical objects, a change that can be described as "the digital transformation" (DX). The explosive increase in data volumes, and the diversifying roles that applied data plays in society, are accelerating demand for semiconductors, while functionality and performance requirements are dramatically evolving. Advantest supports the reliability of semiconductors by "Measuring the Future" to contribute to safety, security and comfort worldwide.

CEO Message



Achieving the Goals of Our Grand Design One Steady Step at a Time

Representative Director, President and CEO

The unprecedented global difficulties triggered by COVID-19, which broke out during Advantest's fiscal year 2019, including the economic and political impact of the pandemic, as well as the changes forced upon us individually and collectively, have made a deep impression on me. The restrictions imposed by our response to the virus will likely continue for some time around the world, but it is my sincere hope that we will soon be able to put the pandemic behind us and resume safe and healthy lives.

The unforeseen scale and speed of COVID-19's global spread has prompted rapid changes in our daily lives, unavoidably accelerating the digitalization of social life. My longstanding belief that semiconductors are the foundation of social infrastructure in the modern world is being confirmed day by day, in Japan and beyond, as the crucial role of these devices rapidly expands to arenas such as education, remote work, and electronic payments.

The mission of the Advantest Group is to deliver safety, security, and comfort for people around the world by guaranteeing the reliability of the semiconductors that enable their daily lifestyles. From FY2020, our value proposition will be put to the test more stringently than ever. As a company that specializes in test, we are confident that we can continue to meet the ever higher expectations placed on our technology.

FY2019 Results

Net sales	Operating income	Operating margin
275.9 billion yen	58.7 billion yen	21.3%
Net income attributable to owners of the parent	Return on Equity (ROE)	Earnings per Share (EPS)
53.5 billion yen	24.9%	270 yen

Numerical KPI Targets for FY2018–FY2020 Mid-Term Management Plan (three-year average)

	Net sales	Operating margin	ROE	EPS
Base scenario	250.0 billion yen	17%	18%	170 yen
Conservative case	230.0 billion yen	15%	15%	135 yen
FY2018 results	282.5 billion yen	22.9%	35.3%	302 yen
FY2019 results	275.9 billion yen	21.3%	24.9%	270 yen

A Look Back at the FY2019 Market Environment & Advantest's Results

For two consecutive years we have achieved record high orders, hitting our targets under our current mid-term management plan (FY ending March 2019 – FY ending March 2021). The success of the measures we have steadily promoted under this plan is starting to show up in our business results. Meanwhile, our investments in R&D and M&A will power the company's growth in the medium to long term. We intend to continue making these strategic investments even if upfront costs temporarily suppress profits.

Market Environment

Historically prey to cyclical downturns every two years on average, the semiconductor test market has been supported since about 2015 by continuous demand growth fueled by the "digital transformation" now taking place in society. Advantest also saw steady growth during this period. However, in 2019, factors such as the prolonged trade friction between the United State and China, and the ripple effects of their competition for technical hegemony, depressed demand for end products and capital investment across a wide range of areas including electronics, automobiles, and industrial equipment. Manufacturers have adjusted production and reviewed their capex plans. On the other hand, the rising demand around the world for full-scale commercialization of 5G communications is stimulating need for higher performance and enhanced reliability assurance for high-end SoC (System on Chip) semiconductors, such as devices for smartphones and HPC (high performance computing) that are manufactured on advanced process nodes, which in turn supported strong test demand throughout 2019. Memory and automotive semiconductor device inventory adjustments also entered a recovery phase in the second half of FY2019, creating high expectations for growth in FY2020. Although demand will inevitably rise and fall periodically in the future, the overall outlook for semiconductor test demand continues to be a growth scenario in the medium to long term. What we did not see coming was the impact of COVID-19 on the global economy. This will be discussed later.

Performance Relative to Our Mid-Term Management Plan & Notable Steps Towards Achievement of Advantest's "Grand Design"

As the market for high-end testers with high performance and high unit prices expands, Advantest's steadily expanding market share enabled us to end FY2019 on a high note by reaching all our targets under our medium-term management plan (base scenario).



One objective of our “Grand Design” medium- to long-term management policy which we have already made strides towards achieving is the expansion of our business domains to adjacent markets. As a part of the vision of “adding customer value in an evolving semiconductor value chain” set forth in our Grand Design, we aim to build greater resistance to cyclicity into our profit structure. In line with one of the four strategies we outlined to achieve this vision—“Reinforce Core Businesses, Invest Strategically”—we have substantially reinforced our system level test (SLT)* business. In February 2019, we acquired the SLT business of Astronics, an American company, and in January 2020, Essai Inc. joined the Advantest Group. SLT is utilized for testing products and system-level processes that are located downstream in the semiconductor value chain from the chip test process which has been Advantest’s core business so far. Adding a richer range of SLT solutions to our existing ATE product portfolio has expanded the range of solutions we can provide to customers. At the same time, the addition of Essai’s high-precision IC sockets and thermal control units enables us to differentiate our solutions from the competition. We expect that our SLT business, a relatively high proportion of which is recurring business, will expand in the next fiscal year and beyond, contributing to the stabilization of our earnings.

Operating income declined in FY2019 due to R&D investments and an increase in SG&A expenses due to increased employment of engineers and other personnel. We will continue to secure our investment quotas for human resources and M&A.

*SLT is a test process that incorporates semiconductors into modules and products such as smartphones, servers, and automotive electronic devices that require high functionality and reliability due to the increasing functionality and complexity of semiconductors, and further increases the reliability of semiconductors.

Medium-Term Megatrends: Risks & Opportunities

Semiconductors, which are now a key element of social infrastructure, will be used in even more diverse roles in the future. Because of the need to ensure their reliability, semiconductor test demand will grow overall, despite cyclical ups and downs. Thus, the market outlook and growth strategy set forth in our Grand Design remain unchanged. On the other hand, recent events have given us a strong sense of crisis. We will respond more flexibly to environmental changes that are different from anything we have seen the last two years, such as the impact on the global economy of the COVID-19 pandemic, and the supply chain instability and operation issues that have diffused through the industry as a result of intensifying conflict between the United States and China.

Headwinds: COVID-19 & US-China Conflict

In terms of demand, the spread of COVID-19 is driving demand for WFH (Work From Home)-related data centers, while at the same time reducing demand for end products such as automotive equipment, industrial machinery, and consumer semiconductors. The Advantest Group’s operations may also be affected, if restrictions on movement around the world or urban lockdowns are prolonged, by procurement and product supply difficulties, as well as a reduced ability to provide in-person customer support by engineers. Also, the intensifying conflict between the United States and China is likely to have no small impact on highly specialized semiconductor supply chains. For example, the tightening of US regulations on Chinese companies will affect the investment stances of the OSAT (Outsourced

Semiconductor Assembly and Test) customers who use Advantest’s testers for smartphone SoCs. If the decoupling of the US and China economies progresses, some semiconductor-related manufacturers may choose to duplicate parts of their supply chains as a form of risk hedging, but the future is uncertain.

* For more on the impact of COVID-19 and Advantest’s risk management. [See pages 25-26](#)

Tailwinds: Demand Growth in High-End Semiconductor Test

On the other hand, the progress of the digital transformation represented by 5G commercialization will promote further semiconductor performance and reliability improvements. This trend is expected to strengthen even if demand slows temporarily. In response to this trend, wafer-level and package-level test are beginning to be reinforced by system/module-level test to enhance the reliability of high-end semiconductors and automotive semiconductors.

4 Strategies: Specific Measures

Thus, we enter fiscal 2020, the final year of our mid-term management plan, amidst instability. In this fiscal year, we will continue to develop our strategies for each of our businesses, work to expand and enhance our solutions across the semiconductor value chain, maintain and expand our market share, and aim to achieve the goals of our Grand Design. To this end, we will continue to grow our core business, expand our solutions by M&A and other means, and make necessary investments in R&D.



Reinforce Core Businesses, Invest Strategically: Focus on High-Growth Sectors

We are steadily implementing measures to reinforce the foundations of our business in sectors within our core business identified as having a particularly high growth potential: 5G millimeter-wave devices, high-frequency (RF) devices, high-end memory, and others. We will continue to work to maintain and expand our market share by boosting engagement with our customers so as to hone our ability to develop and provide the solutions customers need, when they need them. We have also globally reinforced our human resources over the last two years by hiring development and support engineers for our high-end SoC tester business. With a global support network that encompasses 17 countries and regions, now further reinforced at the local level, we are able to minimize the impact of COVID-19 on impact on customers, even if the pandemic should be prolonged.

Pioneer New Business Fields: Expansion into Cloud Data Analytics

We have begun developing new businesses to prepare the way for Advantest's next growth surge. As a foundation for this, in July 2020, we entered into a business alliance with PDF Solutions (PDFS) in the United States, including a capital investment in PDFS. This expands our business in the data analytics field, one of the target areas mentioned in our Grand Design. By incorporating PDFS's database and data analysis technology into our hardware-based business structure, we can utilize the data generated from customer workflows to provide feedback on processes from semiconductor design to manufacturing, chip test, and system level test. We aim to build a cloud platform with cross-departmental participation that grows new revenue streams over the medium to long term. Advantest relishes the challenge of building a new business by creating new customer value.

Seek Operational Excellence: A Slimmer Cost Structure for Investment Efficacy

As part of the efforts directed at achievement of our mid-term management plan's goals over the past two years, we have steadily improved profitability. Our goal of generating free cash flow of ¥85 billion to ¥100 billion during the cumulative period of the mid-term management plan was achieved ahead of schedule. Now that we are in a strong position, I have determined to free up management resources for medium- to long-term growth investments by reviewing budgets and recruitment plans and improving operational efficiency in order to implement a leaner management structure. In particular, the impact of COVID-19 has significantly reduced personnel transfers between overseas locations, and has changed our operational style, for instance through the partial shift of customer support to online and the implementation of telework for many employees. In response to these changes, the cost and workforce plans that we made six months ago have been re-examined.

At the same time, we will invest strategically in the realization of our Grand Design, and continue to review our business and product portfolios with a view to improving capital efficiency. As a part of the background to the partnership with PDFS announced in July, we also decided to sell our probe card business. These decisions exemplify Advantest's stance of responsiveness to change without fear.

For more on Advantest's capital policy, see Financial Strategy & Capital Policy on [See pages.27-30](#)

Becoming a "100-Year Company" With a Crucial Place in Society

Since I became president of Advantest in 2017, I have often said that I want us to become a "100-year company." Now that we have passed the two-thirds mark, the requirements for Advantest's sustainable growth going forward include not only good results in the short term, but also strengthening and promoting ESG management. The very existence of Advantest is premised on a healthy global environment. To preserve the environment and create a sustainable society into 2054 and beyond, it is essential to consider the entire supply chain. In this era when the future often seems uncertain, the Advantest Way—including our management philosophy, vision, core values and ethical guidelines—plays the role of runway lights for the Advantest Group, guiding us as we journey towards our centennial.

Management Philosophy: Enabling Leading-Edge Technologies

Our management philosophy of "enabling leading-edge technologies" leads us to aspire to make things that do not yet exist and take on challenges that no one else has attempted. Around 1954, when the company was founded, the transistor age was only just dawning, and in the late 1980s when we began to be a global company, the IoT and AI were still science fiction. There is no doubt that new



concepts and technologies will emerge in the next 33 years, and I believe that our support for these leading-edge technologies will continue to be the cornerstone of Advantest's business.

Human Resources Are Management Resources That Grow

Our management philosophy encourages each and every person who works at Advantest to fully demonstrate their diverse capabilities, to stimulate each other's creativity, and at times to take up the challenge of responding to new needs that have never previously existed. Rather than making excuses for why "I can't do it," an Advantest employee seeks to unlock his or her full potential, accept different opinions and ideas, and work with a diverse group of colleagues. This mindset, shared across our entire global team, is summarized by "INTEGRITY," an acronym standing for the nine core values we aspire to embody. Unlike devices, people are educated, gain experience, and learn teamwork, and they grow throughout their careers. To help them flourish, we in management are responsible for creating and maintaining a corporate culture in which employees can work and fully develop their abilities through an optimal personnel system, training opportunities, and workstyle reforms. We further believe that in order for our employees to continue to grow, we must constantly assess them, using our corporate culture, employee engagement metrics, and various other indicators.

ESG Management Promotion for Sustainable Development

I believe that as we continue our journey towards our 100th anniversary, we need to practice ESG management that enables us to share the value of the Advantest Group with all stakeholders, including customers, business partners, local communities, and employees. What value can Advantest offer by providing the solutions that society needs? From this perspective, ensuring the reliability of semiconductors enables us to contribute to society by making people's lives safer, more secure, and more comfortable. Going forward, we will redouble our efforts to secure human rights and improve workstyles, contribute to local communities and the global environment, and help our customers to reduce their environmental impact throughout the value chain. In addition, the Advantest Way includes a code of conduct that sets out 17 ethical guidelines which must be observed by all employees of the Advantest Group. Legally or ethically questionable behavior overshadows even the greatest achievements. Advantest is dedicated to maintaining impeccable ethical standards, and I am resolved to continuously improve the compliance awareness of the Group as we journey onwards.

Final Thoughts

Fiscal 2019 was a memorable year for us in another way: we achieved first place in the annual semiconductor manufacturing equipment customer satisfaction survey conducted by VLSIresearch, not only in testers, but in the entire semiconductor manufacturing equipment sector. I would like to express my sincere gratitude to each and every employee of the Advantest Group, all of our business partners, and our customers, for contributing to this achievement. I would also like to thank the communities where we do business every day, and the investors who make it possible. Advantest aims to reach its 100th anniversary as a company with a crucial place in society. With that vision in mind, each and every one of us, starting with myself, is sincerely motivated every day by the desire never to take for granted the trust that has been placed in us.