Material Issues

Material Issues Crucial to Tokyo Electron's Sustainable Growth

As a manufacturer of semiconductor and flat panel display production equipment, we have identified "Product Competitiveness", "Customer Responsiveness" and "Higher Productivity" as three items to be enhanced in the Medium-term Management Plan. We have defined these three items, as well as "Management Foundation" that supports all our business activities, as high-priority material issues we must tackle in order to both expand our medium- to long-term profit and continue enhancing corporate value.

To appropriately respond to changes in the business environment surrounding our company, our management team, including our CEO, identifies material issues and reviews them on a regular basis by evaluating risks and opportunities as well as engaging with our stakeholders.

Additionally, continuing our support of the Sustainable Development Goals (SDGs), which are globally shared goals to be achieved by 2030, we have identified appropriate SDGs initiatives through our business for each material issue and are conducting these initiatives throughout the entire Group.

SDGs Initiatives

Product Competitiveness

By jointly creating technology roadmaps spanning multiple generations to respond to the requirements of technological innovation, we are promoting leading-edge research and development on a global level. It is important for us to utilize our expertise as an equipment manufacturer and all of our management resources to continuously create high-value-added, next-generation products based on innovative technology on a timely basis.

We are strengthening our ability to make technical suggestions by integrating the development departments with the production departments. We are also providing equipment suitable to various applications by improving the performance of individual products and merging the wide variety of technologies we possess.

- Create innovative technologies by promoting innovation and providing environment-friendly products and services to help develop a sustainable society

Customer Responsiveness

We are striving to further enhance customer satisfaction, which is a key management theme we have tackled since our founding, aiming to be the sole strategic partner for customers. We help customers manufacture leading-edge semiconductor devices and displays by maintaining an accurate and prompt grasp of customer needs and providing innovative technologies for future generations.

As an equipment manufacturer with a diverse product lineup, we propose optimal solutions contributing to value creation for customers. Making full use of leading-edge AI, digital technologies, and knowledge management tools, we help customers stably operate various generations of equipment by providing high-value-added services.

- Contribute to customer innovation generation and value creation by proposing optimal solutions, providing high-value-added services, ensuring equipment safety, and taking environment-conscious actions

Higher Productivity

To enhance corporate value, it is important for us to improve our business operations, implement quality-first management and improve operational efficiency continually. Through taking steps such as integrating business systems in each division and unifying databases, we are striving to standardize and improve business operations throughout the entire Group, promote automation and improve productivity along the entire value chain. At the same time, we are utilizing AI and promoting digital transformation.

Additionally, we are also working to optimize our production operations by formulating detailed production plans, procuring parts and materials, and leveling production and installation based on assessment and analysis of technological and market trends.

- Pursue productivity improvement, continually improve operational efficiency and promote sustainable production-consumption mode, to contribute to the development of the industry and society and to economic growth

Management Foundation

To ensure continued growth in business activities, building a strong and sound management foundation that supports them is vital. To ensure that operational decision-making and supervisory functions are exercised sufficiently, we are striving to build a highly effective corporate governance system, and further strengthen compliance and risk management.

Through our business, we are also working to preserve the global environment, ensure respect for human rights and build a sustainable supply chain. Furthermore, based on a belief that employees both create and fulfill company values, we are striving to further improve employee engagement by respecting diversity and building a workplace environment replete with dreams and vitality that enables employees to realize their full potential.

- Build a solid management foundation that achieves sustainable growth, respect human rights, take environment-conscious actions and promote value creation in the supply chain

For information about the material issues' identification process and the annual goals, please refer to the Tokyo Electron Sustainability Report 2021. www.tel.com/csr/report

Medium-term Management Plan

Overview and State of Progress of the Financial Model

We are aiming for sustained growth in corporate value through a management base with global-standard strength. As the semiconductor production equipment industry enters a new stage in its development, our business activities in focus areas are progressing smoothly, with our sales far outpacing the market as one example of our progress.

It is in this environment that we have set our sights on achieving our financial model as the goal of the Medium-term Management Plan toward our further growth.

In the Medium-term Management Plan that was revised in May 2019, we added a model that aims to achieve net sales of 2 trillion yen and an operating margin of 30% or more. At the same time, the model—which we target to achieve by fiscal 2024—aims to achieve a return on equity (ROE) of 30% or more. Our financial model seeks not to anticipate the scope of our future sales but to optimize the business management that we should seek to achieve for each kind of sales scope anticipated. By realizing this financial model, we intend to improve operational efficiency and profitability as well as secure resilience to market fluctuations.

In addition, through continuous efforts such as securing and generating resources necessary for growth investment and proactive returns to shareholders, we are working to improve capital efficiency by implementing appropriate balance sheet management with a view of medium- to long-term growth.

In fiscal 2021, Tokyo Electron's net sales reached 1,399.1 billion yen with an operating margin of 22.9% and ROE of 26.5%. We achieved net sales of over 1 trillion yen, an operating margin of over 20% and ROE of over 20% for the fourth consecutive year. For fiscal 2022, we are planning for net sales of 1,850 billion yen with a 27.5% operating margin*, and we are making smooth progress toward the financial model of our Medium-term Management Plan. We will continue to aim for world-class operating margins and ROE.

* Net sales and operating margin for fiscal 2022 are estimates as of August 16, 2021.

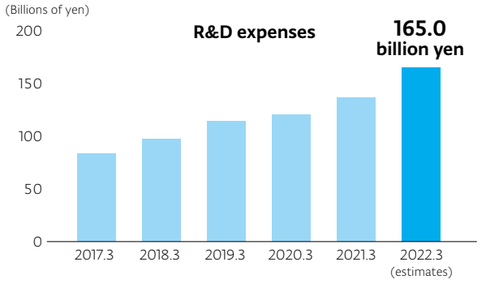
Actual Performance in Fiscal 2021, Estimates for Fiscal 2022* and Financial Model of the Medium-term Management Plan

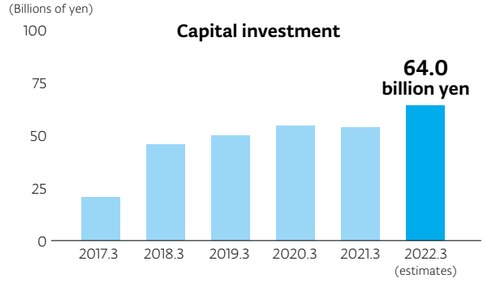
	Fiscal 2021 (Actual)	Fiscal 2022 (Estimates)	Financial Model (by Fiscal 2024)		
Net Sales	¥1,399.1 billion	¥1,850.0 billion	¥1,500.0 billion	¥1,700.0 billion	¥2,000.0 billion
Operating Margin	22.9%	27.5%	26.5%	28.0%	>30.0%
ROE	26.5%	—	>30.0%		

Principal Initiatives to Achieve the Financial Model

- To create the Best Products, operate business in the fields of semiconductor and flat panel display (FPD) production equipment where we have strength and can leverage our accumulated technologies and management know-how
- Introduce state-of-the-art technological products with high added value required by customers into the market ahead of others and provide the Best Technical Service
- Continue to make proactive research and development investments using our solid financial foundation to maintain and enhance our world-leading technological innovation capabilities
- Expand revenues in the after-sale market through the provision of sophisticated field solutions based on our world-leading installed base
- Provide highly efficient, high-value-added services through the use of equipment data and AI

Trends in R&D Expenses and Capital Investment





Technological Capabilities

Our Approach to Increasingly Advanced Manufacturing Technologies

More complex structures and new materials are being adopted to achieve evolution of semiconductors and displays that support the development of information and communication technologies (ICT). Production equipment manufacturers are required to have comprehensive capabilities that respond to all kinds of technologies.

We have a rich product lineup that includes equipment capable of the series of four key processes—deposition, coater/developer, etch and cleaning—required to achieve higher performance and lower power consumption of leading-edge semiconductor devices. We are undertaking the development of equipment with innovative and extreme processing performance, centered on (1) deposition systems that can handle new materials and structure while utilizing batch, semi-batch and single-wafer characteristics and allow optimal film thickness and film quality control; (2) coater/developers for leading-edge EUV lithography; (3) etch systems that achieve precision processing of fine structure and processing of deep holes and trenches with high selectivity; and (4) cleaning systems that remove particles and residues—which are causes of lower yields—without causing the collapse of fine patterns. We also have a range of other equipment, such as wafer probers used in the wafer testing process and wafer bonders/debonders used for 3D integration of semiconductor devices.

The wide range of our product coverage allows us to propose solutions for issues faced by customers from a variety of approaches, including process integration based on an understanding of upstream and downstream processes. Specific examples include proposals for processing methods in the deposition and etch of hard masks necessary for the processing of ultra-fine patterns as well as proposals for cleaning methods according to the residues generated after deep-hole etching and deposition methods—including preprocessing—according to the surface state after cleaning. We strive to accurately understand the characteristics of our customers' devices and peripheral steps of processing and provide optimal solutions.

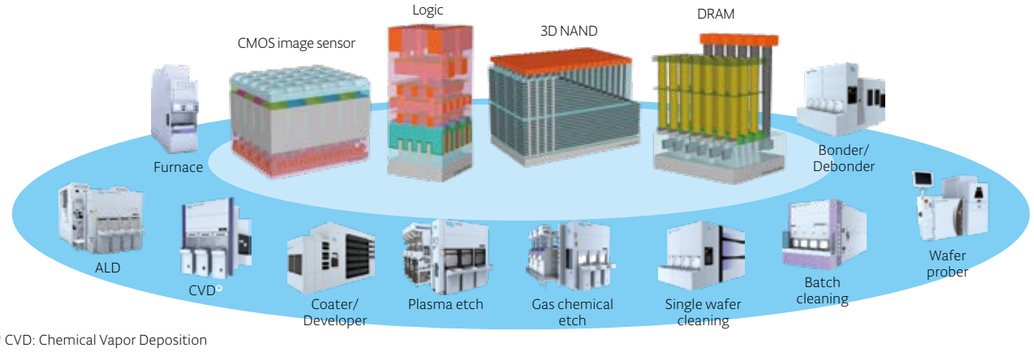
In the field of flat panel displays (FPDs), the patterning precision is becoming more advanced and progress is being made in technologies related to OLEDs. Under such conditions, in addition to the increasing deployment of PICP™ etch systems with plasma modules that are excellent in processing uniformity and energy efficiency, development and evaluation of inkjet printing systems, which have strong advantages in handling larger sizes and material efficiency, are also accelerating toward adoption for mass production.

We are also actively working to improve unit area productivity and energy consumption of our equipment. Positioning environmental performance as part of our equipment's basic specification, we reflect it in our product roadmaps of major models. We are promoting the reduction of CO_2 emissions that include reducing the usage of energy, water, process gases and chemical substances, reducing product footprint, volume and weight, reducing frequency of parts maintenance and increasing lifespan, and even shortening the time for equipment installation.

In addition, for the equipment we have shipped, which amounts to a cumulative total of 76,000 units, we will carry out maintenance, inspection and continuous improvement toward stable operation. At the same time, through our field solutions business, we will strive to reflect customer requirements in the development of next-generation technologies. We are contributing to our customers' manufacturing of semiconductor devices and displays by conducting high-value-added upgrades and providing re-engineered equipment*, including the strengthening of services such as through promoting digital transformation (DX).

In the development and production of semiconductor and FPD production equipment, it is important to fuse technologies by specialists in various fields—process, hardware, software, quality management, manufacturing and field engineering. Our employees' creativity, sense of responsibility and strong teamwork that achieve this fusion form the core of our technological capabilities. Using our rich technological capabilities developed over many years, we will continue to pursue the Best Products and Best Technical Service together with our employees who both create and fulfill company values.

* Re-engineered equipment: Equipment that replaces old units and parts with new ones while maintaining compatibility with existing processes to offer performance at the same level as the latest equipment

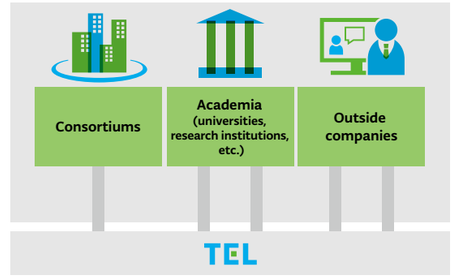


* CVD: Chemical Vapor Deposition

Various External Collaboration toward Achieving Technological Innovations

In addition to the development of leading-edge technologies at locations in Japan and overseas, such as in the United States, South Korea and Taiwan, we cooperate with customers in and outside Japan as well as international research institutions to pursue research for next-generation semiconductor manufacturing technologies in order to further strengthen our product competitiveness. Furthermore, we undertake collaboration with academia in a wide range of fields within our business areas—including a joint research bidding system with universities and research institutions in Japan—to discover advanced fundamental technologies. We also make investments in outside companies through TEL Venture Capital toward development of new technologies necessary for further business growth and application of our advanced technologies in other industries.

Through collaboration with various external organizations, we strive to establish our unique, innovative technologies and continue to create leading-edge semiconductor and FPD production equipment.

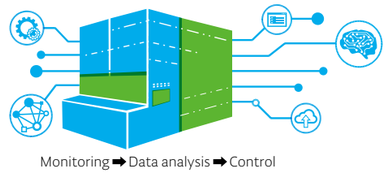


Maximization of Equipment Performance through the Promotion of DX

To meet the diverse technological needs of customers, we are strengthening DX toward early realization of aspects such as the establishment of performance and productivity improvement of our equipment and co-optimization of several process steps of manufacturing.

We are promoting the realization of smart equipment—which helps improve performance by controlling equipment based on using AI to analyze data on the states of operation and processes monitored through multiple sensors installed inside equipment—and TELeMetrics™, a remote maintenance service for equipment that has been installed at customers' fabs. Through these initiatives, we will provide functions and services meeting the needs of customers, such as improvement of equipment uptime, improvement of productivity and upgrades.

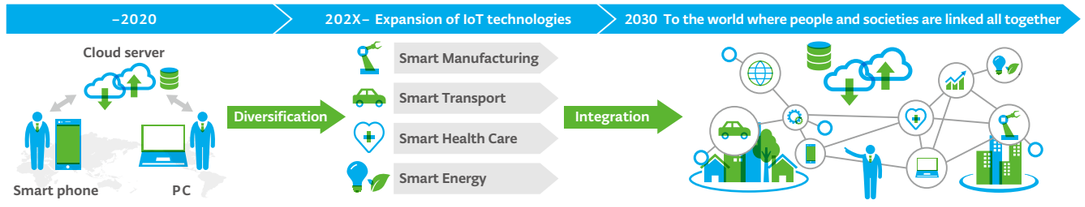
Realization of Smart Equipment



TELeMetrics™ Remote Maintenance Service

Development of Technological Development Strategy with a View of the Future

Together with the appearance of new technologies and services amid progress in building a "Digital × Green" society, lifestyles and business models are changing significantly. Manufacturing technologies for semiconductors and displays, which support such movements, are also becoming more advanced and diverse. Based on insights regarding changes in future social structure and people's values, we are constantly holding discussions on technological development strategies toward our sustainable growth. We share our medium- to long-term vision across the entire Group so that every employee can quickly grasp the changes of the times and respond flexibly and appropriately.



Value Creation Model

We will make the most of the capital we own and continue to provide new value that contributes to the resolution of issues and development of industry and society through our business activities in research and development, procurement and manufacturing, sales and installation and maintenance services in our value chain.

INPUT (investment capital) Fiscal 2021

Financial capital

Net assets **1,024.5** billion yen

Equity ratio **71.1** %

Manufactured capital

Manufacturing sites **9** total
(6 in Japan and 3 overseas)

Manufacturing-related capital investment, such as new plant buildings and manufacturing equipment

Many years of know-how and proven performance in manufacturing operations

Vertical transfer system, from development to mass production

Production capacity and capabilities that can respond to increases in demand

Intellectual capital

R&D sites **12** total (6 in Japan and 6 overseas)

R&D investment **136.6** billion yen

Broad-ranging knowledge and technological capabilities in semiconductor and flat panel display (FPD) manufacturing processes

Customer needs and equipment-related data obtained from installed equipment base

Infrastructure for promoting digital transformation (enterprise system/database/talents and skills)

Human capital

Number of employees **14,479**

Proportion of engineers **66.9** %

Personnel able to perform globally

Employee skill upgrade programs and human resource development

Social and relationship capital

Foundation for business activities in local communities

Relationship of mutual trust with customers built through many years of performance records

Solid cooperative working relationships with suppliers

Natural capital

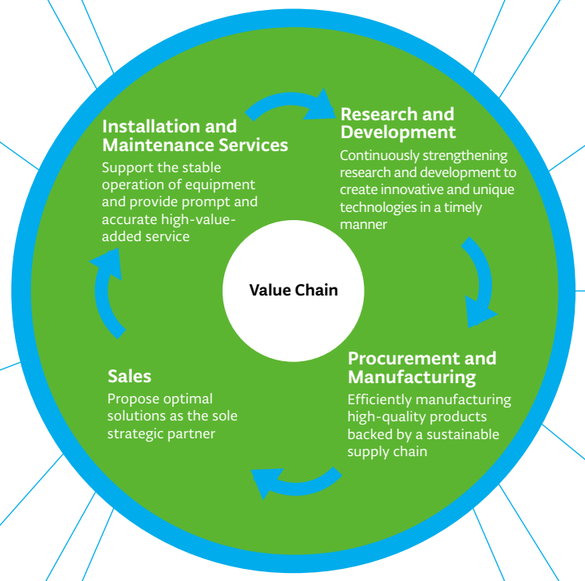
Energy consumption **94,640** kL

Water consumption **1,397** km³

Corporate Philosophy

Management Policies

TEL Values



The driving forces behind our company

Abundant technological capabilities
cultivated as an industry leader

Trust from customers
based on our reliable technical services

Challenging spirit of our employees,
who are capable of flexibly and rapidly adapting to changes in the environment

OUTPUT (value created through business activities) Fiscal 2021

Net sales **1,399.1** billion yen

Operating margin **22.9** %

Net income **242.9** billion yen

ROE **26.5** %

Total annual dividend **121.9** billion yen (payout ratio: 50%)

Cumulative number of equipment installations Approximately **76,000** units
(annual shipment volume of approximately 4,000 units)

High-quality and high-reliability products incorporating leading-edge technologies

Contributing to customers' productivity enhancement

Safety-first operation (TCIR*) **0.27**

* TCIR: Total Case Incident Rate. The number of workplace incidents per 200,000 work hours.

Observing equipment delivery and installation schedules

Innovative and unique technologies

Building a product portfolio with technical superiority

Number of patents owned **18,692**

Semiconductor production equipment
Product lineup with No. **1** or **2** market share

Turnover rate **2.5** %

Average service years **17** years and **4** months (Japan)

Improvement in engagement score **12** points (compared to fiscal 2016)

Improvement in desire for growth and demonstration of the challenge spirit in employees, who both create and fulfill company values

Percentage of respondents who selected "Very Satisfied" or "Satisfied" in the customer satisfaction survey **96.7** %

Rate of improvement after supply chain CSR assessment **23.1** %

Number of TEL FOR GOOD programs **136**

Creating employment opportunities in and paying taxes to local municipalities and nations where we carry out business activities

Per-wafer CO_2 emissions **16** % reduction (compared to fiscal 2014)

Renewable energy consumption **7,763** MWh

Energy consumption at plants and offices per net sales **10** % reduction (compared to fiscal 2020)

Waste material recycling rate **98.8** %

OUTCOME (value provided to industry and society)

Financial capital

- Returning generated profit to stakeholders
- Building a solid financial foundation
- Continuing proactive investment for growth

Manufactured capital

- Contributing to customers' product manufacturing and the growth of semiconductor and FPD markets through the Best Products
- Contributing to customers' fab utilization rate and yield improvement through the Best Technical Service

Intellectual capital

- Providing leading-edge technologies to contribute to technological innovation and manufacturing in semiconductors and FPDs
- Operating fair and sound business that respects intellectual property rights
- Providing new value to industry and society through technological innovation

Human capital

- Creating fulfilling workplace environments that motivate employees
- Improving value provided to stakeholders by cultivating employees with a high level of engagement
- Building a sustainable operation

Social and relationship capital

- Maintaining soundness and strengthening competitiveness throughout the entire supply chain
- Contributing to customer value creation by providing the Best Products and Best Technical Service
- Contributing to the revitalization of and sustainable development in local communities

Natural capital

- Implementing products and business activities that have a low environmental impact and help to preserve the global environment
- Providing technologies that help customers manufacture semiconductors and FPDs that have a low environmental impact

Stakeholder Engagement

Actively providing opportunities for engagement with our stakeholders and promoting mutual communication allows us to accurately comprehend their requirements and reflect them in our business activities. We strive to build a solid relationship of mutual trust with all the stakeholders surrounding our company and respond to each of their expectations, so that we can fulfill our roles and responsibilities in society.

Stakeholders	Relationship with Stakeholders	Value Provided to Stakeholders	Main Engagement Opportunities
Shareholders/ Investors	• Shareholders and investors support our company's business expansion from a financial aspect and participate in company management by exercising their voting rights, etc. • We share our management vision and growth scenario with shareholders and investors, and incorporate the feedback received from them through constructive dialogue into management decision-making in an effort to enhance our corporate value	• Return of profit generated from business activities • Realization of medium- to long-term growth and enhancement in corporate value	• Earnings release conference, Medium-term Management Plan briefing, non-financial briefing (IR Day) • IR conference, IR road show*, individual IR interview • Shareholders' Meeting * IR road show: IR activities presented directly to shareholders and investors
Customers	• Customers purchase the semiconductor and flat panel display (FPD) production equipment our company provides and also utilize services necessary for maintaining that equipment • We not only provide products and services but also create technology roadmaps spanning multiple generations and carry out joint technology development with customers toward developing next-generation devices and processes	• Best Products with world-leading performance that incorporate leading-edge technologies • High-value-added Best Technical Service • Environment-friendly products and services with a focus on safety and quality • Solutions that satisfy a variety of application needs	• Technology conference • Customer satisfaction survey • Joint development
Suppliers	• Suppliers supply the parts, materials and human resources necessary for our company's equipment manufacturing, and also perform customs clearance and logistics operations • We improve and enhance the quality of our products and services collaboratively with our suppliers, audit their business environments as needed, and promote improvement activities. In this way, we build a sustainable supply chain that takes into account labor, the environment, health and safety and ethics	• Maintaining soundness and strengthening competitiveness throughout the entire supply chain • Further improving added value of products and services through collaboration with our company • Providing business opportunities in the semiconductor and FPD production equipment market	• Production update briefing • TEL Partners Day • STQA* audit * Refer to Initiatives with Suppliers on p. 30
Employees	• Employees help enhance corporate value by utilizing their individual abilities and know-how, and by improving their skills through training • We strive to improve employee engagement so our employees can realize their full potential	• A workplace environment replete with dreams and vitality that enables employees to demonstrate a challenge spirit • Opportunities for career development and skill improvement • Fair performance review and remuneration commensurate with results	• Employee meeting • Global engagement survey • Career interest survey (Japan)
Local Communities	• We strive to advance together with the local communities where we carry out business activities. We create employment opportunities, develop local industries and advance environmental preservation initiatives as well as pay taxes in line with the profit generated by our business activities	• Provision of employment opportunities • Promotion of environmental preservation in communities • Financial contributions, such as tax payments	• Community contribution activities • Tours of plants and offices • Environmental debriefing
Governments/ Associations	• In the markets where we carry out our business activities, we work to accurately comprehend societal needs by collaborating with highly relevant international organizations, industry associations, initiatives and NGOs, contributing to the resolution of issues faced by the industry and society, as well as to further development	• Solutions that help solve industrial and societal issues • Equipment technology that increases environmental performance as well as CO_2 emission reduction in our products, plants and offices • Business development based on respect for human rights	• Industry group activities • Collaboration with global initiatives

The Driving Forces behind Our Company

We are striving to enhance our medium- to long-term corporate value. As the driving forces behind further growth, we are utilizing our abundant technological capabilities cultivated over many years and the customer trust gained based on reliable technical services and relying on our employees and their spirit of challenge.

	Major Initiatives	Related Data
Driving Force 1 **Abundant technological capabilities cultivated as an industry leader**	• Creating innovative and varied technologies through joint development with customers who are leading in the semiconductor and flat panel display (FPD) market and collaboration with world-leading consortiums • Accurately comprehending customer needs to achieve early market introduction of next-generation products possessing overwhelmingly high added value and the level of performance that will be required in the future • Executing proactive R&D investment aimed at creating leading-edge technologies • Strengthening development capabilities and product competitiveness by promoting digital transformation, which utilizes data and AI • Proposing optimal processes that take advantage of a wide variety of product lineup	• Semiconductor production equipment Product lineup with No. 1 or 2 market share (Example: 100% share in EUV-compatible coater/developers) • R&D investment: More than 400 billion yen over three years from fiscal 2020 • Number of patents owned: 18,692 
Driving Force 2 **Trust from customers based on our reliable technical services**	• Carrying out activities to improve the customer satisfaction level and build a relationship of mutual trust with the aim to be the sole strategic partner for customers • Contributing to customers' manufacturing of semiconductors and displays by providing advanced field solutions that achieve steady operation of various generations of equipment and productivity improvement • Providing high-efficiency, high-value-added services, such as remote maintenance services that utilize AI and digital technology, and predictive maintenance that utilizes equipment operation data • Building a global service structure that responds to customer needs in a timely manner and strengthening the skills of front-line engineers* who work directly with customers * Refer to Enhancing Front-line Engineers on p. 34	• Business expansion: 76 sites located in 18 countries and regions of the world • Number of field engineers: Approximately 4,000 • Percentage of respondents who selected "Very Satisfied" or "Satisfied" in the customer satisfaction survey: 96.7% 
Driving Force 3 **Challenging spirit of our employees, who are capable of flexibly and rapidly adapting to changes in the environment**	• Sharing with our employees the "TEL Values", which summarize the corporate culture cherished since our company's founding and the codes of conduct for all employees • Focusing on strengthening human resource development and enhancing employee motivation to maximize "Employee capabilities and motivation" • Setting management goals that increase the promise of our company's future, providing opportunities for taking on challenges without fear of failing, providing a system for fair performance reviews commensurate with results, and creating a workplace environment conducive to teamwork and open communication • Enhancing productivity throughout the entire value chain and building a relationship of mutual trust with stakeholders by addressing issues and implementing policies based on a regular employee global engagement survey	• Improvement in the engagement score: 12 points (compared to fiscal 2016) • High employee retention rate*: 94.1% (Japan) * Retention after three years of joining the Company, average over the past five years • Low turnover rate: 2.5%