Reinforcing responsiveness to customers

Medium-term goal

Become an irreplaceable strategic partner

Priority themes

Accurate grasp of customer needs

Solutions that create value for customers

Relevant SDGs

9 Industry, innovation and infrastructure

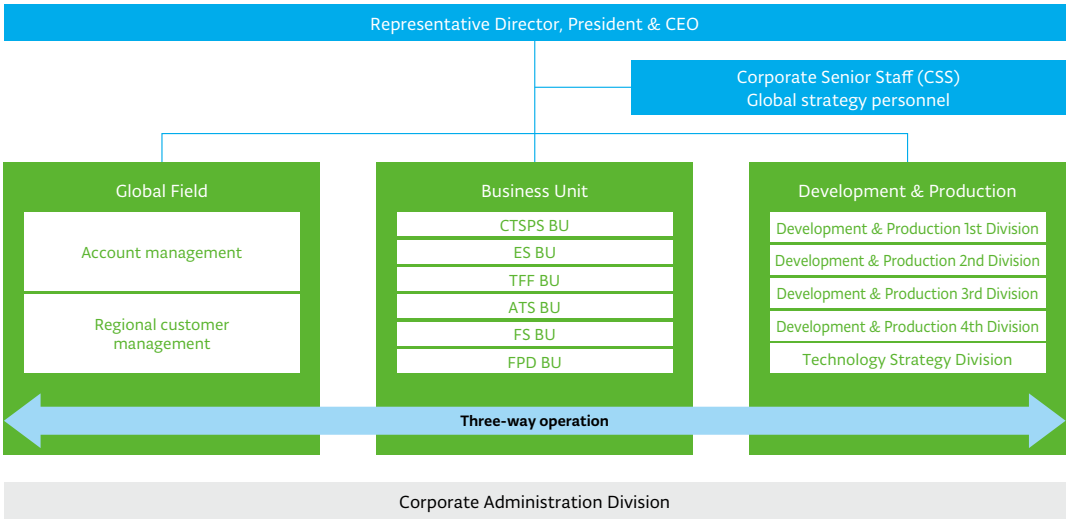
12 Responsible consumption and production

SUSTAINABLE DEVELOPMENT GOALS

Systems for grasping customer needs

System development

In 2016, TEL revised its organization structure to align with expansion in the global market by adding a customer (account) overlay to the structure, previously organized primarily by product-based business units. With collaboration between people focused on customer needs and people who are specialists in product-specific technologies, we aim to provide more global, high-value-added services.



Sharing information and best practices

TEL conducts company-wide knowledge sharing to enhance customer service. Knowledge management promotes internal company sharing of tacit knowledge previously held by individuals. It encourages innovation and improves overall productivity. By connecting different business units and overseas sites that might have weak knowledge-sharing capabilities, we are working to implement best practices across the entire company to deliver high-quality services to our customers. In 2016, leaders from across the world collaborated as a Global Service Committee. The committee has started to develop global standards for working time management, skills management, and education methods to improve service levels and make the most of our approximately 3,000 service employees around the world.

Finally, we are also working to improve the quality of our business operations and sales activities by sharing sales-related best practices and information company-wide. These sales-related best practices include how to build highly precise order prediction systems and how to enhance the strategic thinking of our sales professionals.

Strengthening human resources

TEL's Global Field Division was established in 2016 and is working alongside other divisions to develop an education system and education environment for the field engineers around the world. In addition to learning mechanics, electronics, software, and other basic technologies used by our equipment, field engineers develop a service mindset to see things from the customer's point of view. This focus supports them in further enhancing their customer support. With a comprehensive range of e-learning materials as well, we are creating an environment that delivers high quality training to all corners of the earth even when our equipment and other machinery is not available.

Solutions that create value for customers

Integrated solutions

TEL has a diverse range of products designed to resolve in-depth issues of leading-edge technology. As one of the few multi-product semiconductor equipment suppliers in the world, we must continually provide solutions optimized to the customer's entire manufacturing process. These days, semiconductor device manufacturers are facing on manufacturing devices with high productivity even down to five nanometer generation. With our diverse range of products, we support cutting-edge development and manufacturing operations through comprehensive and integrated solution proposals. We achieve this by collaborating with specialists in individual equipment as well as managers who oversee the customer's entire production process from a technology perspective.

Proposing solutions that overcome barriers in the manufacturing process

Recently, it has become necessary for semiconductor device manufacturers to have ultra-fine processing capabilities on the scale of sub ten nanometers. In order to form these ultra-fine patterns, it is essential to have a combination of equipment carrying out various processes, together with optimization of the overall process. One example is forming high aspect ratio contact holes for the leading-edge semiconductors. In addition to the advanced etching processes for trenches, holes, and patternings, it is necessary to consider the integrated processes, taking into account mask structures and mask materials. Our strength lies in our wide range of products, which enables us to provide integrated solutions for multiple processes. Through a merger of technologies in our diverse range of equipment, we are partnering with our customers to support cutting-edge development strategies.

Field engineers implementing workplace solutions

TEL field engineers work closely with customers' production sites and are able to proactively propose solutions. One of those solutions currently being implemented is predictive maintenance for coater/developer systems.* With almost 100 modules in the driver unit, lost productivity from failures and parts replacement is a problem. This solution continually evaluates the condition of the driver unit, checking for signs of failures or abnormalities, in order to maximize uptime of customer equipment. In addition, our field engineers strive to deliver services from the customer's point of view, using their familiarity with the customer's equipment usage to analyze alarm logs and other equipment information to offer solutions that improve the condition of the equipment and achieve high-quality, high-availability operation.

* Coater/developer systems: Used in the semiconductor production process, these systems employ a photolithographic process, which uses the same technology as photography, to apply and develop photoresist

Business opportunities driven by IoT

In the era of the Internet of Things, where almost everything is connected to networks, the importance of semiconductors is increasing. With the use of semiconductors in a wide range of fields, from medicine to education, finance, automobiles, aviation, space, safety, and the environment, requirements for semiconductor manufacturing equipment are also becoming more diverse. So far, demand has centered on DRAM[1] and MPUs,[2] the "brains" of systems used in computers and mobile devices. With subsequent miniaturization and high integration, semiconductor manufacturing equipment has evolved as well. The diversification of semiconductors over recent years has led to increasing demand for high-performance semiconductors that handle big data for various applications, including servers, automated driving, and artificial intelligence. Demand is also increasing for general-purpose semiconductors in applications such as sensors, power devices, and discrete and analog semiconductors. At the same time, there is increasing customer demand for equipment that employs cutting-edge technologies as well as equipment that features standard technologies. Having delivered more than 60,000 machines as one of the largest suppliers in the industry, we are also providing customers with TEL Certified Used Equipment, including previous generation 300 mm or 200 mm equipment. We provide the modifications, upgrades, service, and parts needed to continue using our existing equipment. Altogether, we are working to meet the various needs of our customers.

1 Dynamic random access memory (DRAM): A type of semiconductor storage element for computers, etc.

2 Microprocessing unit (MPU): Microprocessors or semiconductor chips that mainly provide the computing power for computers

Ensuring safety for customers

Information provision

TEL provides relevant safety information to customers to enable safe handling of products that require hazardous chemicals or high voltage electricity.

All of our products come with a standard TEL Safety and Environmental Guidelines manual. With consistently organized information, this manual describes the potential risks associated with the use of our products by category, such as chemical, electrical, mechanical, and ergonomic, together with the methods for averting those risks. The manual also describes safety measures applied to products and recommended methods for product disposal. The manual is offered in 10 languages* to ensure the content is correctly understood by our customers around the world. Each product also comes with a manual detailing the procedures for avoiding product-specific risks and securing safe operation and maintenance, thus ensuring safe use of the equipment.

Close attention must also be paid to safety when delivering our products to new customer production lines. We check the facilities, equipment, and workplace safety standards beforehand according to our internal rules to ensure a safe working environment prior to delivery.

* 10 languages: Japanese, English, German, French, Italian, Dutch, Russian, Korean, Traditional Chinese, and Simplified Chinese

Training

TEL provides its customers with training on equipment operation and maintenance procedures to ensure they are able to handle TEL products safely. To meet the needs of customers around the world, we have established training centers at various TEL sites, with approximately 80 instructors conducting training courses including practical skills needed to work on TEL equipment. We also provide web-based training and on-site training at customer sites. In fiscal 2017, we provided approximately 9,500 days of training to our customers in total.

In addition, we have introduced a certification system for our instructors in order to assure we provide high quality training. We survey participants after they complete a training course to measure their satisfaction with the training. We then use their feedback on the training programs and equipment used in order to continually improve our training system.

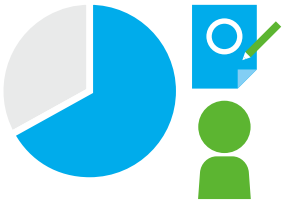
Training centers

Customer Satisfaction Survey

TEL conducts a Customer Satisfaction Survey (TEL CS Survey) every year, with the goal of making continual improvements based on customer feedback.

The survey started in 2003 with a limited number of departments. Since then, we have made numerous improvements to the questions, survey method, analysis, feedback to customers about targeted improvements, and overall management of the program. The survey grew to include all semiconductor production equipment departments in 2014. The FPD production equipment division and overseas subsidiaries were added in 2016 to make the survey a key organization-wide initiative. The questions are designed to allow multi-faceted analyses of customer opinions, so that feedback can directly lead to practical improvements in the sales, development and production, and service divisions.

To ensure the survey results lead to improved customer satisfaction, in 2016, we began analyzing the results by account and function (software, development, etc.) in addition to analyzing by product. Results of the analysis are used by dedicated in-house personnel to respond to each specific case and to improve our services overall. Results of the function-based analysis were used to again identify common issues related to each product. We also developed a mechanism for immediately sharing feedback with related divisions, so that we can conduct further multi-faceted analyses and accelerate our improvement activities.



Percentage of responses that indicated customer satisfaction

67.6%

In the survey for fiscal 2017, which was conducted under this new system, approximately 1,300 individual customers responded for a 61.6% response rate. On a 4-point scale, we received an average of 3 points or higher (Very Satisfied or Satisfied) on 67.6% of the questions, compared to 62% of questions last year. Through this customer satisfaction survey, we take corrective action based on the valuable feedback received from our customers, analysis results, and issues requiring improvement. We make full use of the survey to improve our services and product development, and we continually share the results of the survey and our plans for improvement with our customers. Our entire company is working to drive improvements through this customer satisfaction survey.

TEL CS Survey organization and workflow