

## Responsiveness to customers



In the era of IoT, when a variety of objects can connect to the Internet, semiconductor and FPD applications are expanding, and demand for technological innovation is growing. In such circumstances, Tokyo Electron (TEL) works to accurately grasp the demands of customers and to reflect this during consideration of product planning, and uses its strength as a production equipment company with a diverse product range to propose comprehensive solutions contributing to value creation for customers. TEL is also promoting the reuse and recycling of equipment main units and parts, and also provides high added-value maintenance services, to support the stable operation of equipment of various generations that handle a diversity of applications. TEL strives to further enhance customer satisfaction, which is a key management theme it has tackled since the company's founding, aiming to be the best and sole strategic partner for customers.

### Medium-term goals (2)

## Become the best and sole strategic partner

#### Priority themes, Main activities:



**Solutions that create value for customers**

#### ■ Solutions that create value for customers

System construction for customer value creation, process integration, initiatives for comprehensive proposals, field solution business

#### ■ Ensuring safety for customers

Provision of information, training

#### ■ Improvement of customer satisfaction

Customer satisfaction survey



**Improvement of customer satisfaction**

#### SDGs initiatives

■ Contribute to customer innovation generation and value creation through the proposal of comprehensive solutions

■ Ensure a sustainable form of production and consumption throughout product life cycles by responding to diversifying needs, considering safety and the environment, and so on



**Industry, innovation and infrastructure**



**Responsible consumption and production**

**SUSTAINABLE DEVELOPMENT GOALS**

## Solutions that create value for customers

### Building systems for creating value for customers

Tokyo Electron (TEL) is building an organization to implement more effective global operations aimed at providing cutting-edge technology products and the best technology services as required by customers.

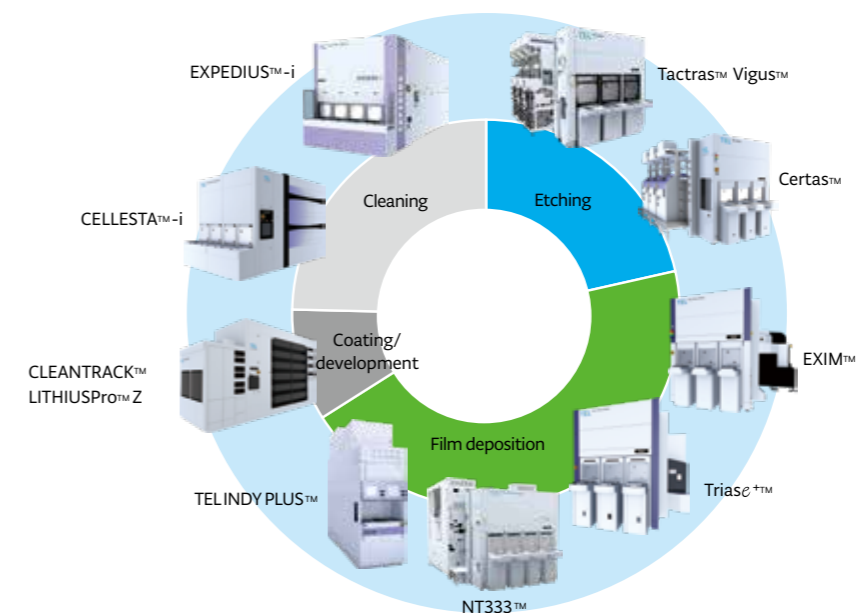
In 2018, TEL strengthened its customer responsiveness through the establishment of the Account Sales Division, which leads to new technology development based on needs for next-generation cutting-edge technology such as memory, logic, and foundry, and the Global Sales Division, which appropriately provides for new needs in fields such as electrical appliances, automobiles, medical treatment, and healthcare, which are continuously expanding with the arrival of the age of IoT and AI. Each sales division further strengthens its close collaborative relationships with each business unit and moreover with each overseas subsidiary whereby it provides solutions to customers with high-quality support and a sense of speed.

Furthermore, TEL is currently working to build globally unified systems and operations in order to further enhance the quality of sales and service activities. The Global Service Committee, a regular gathering of the service leaders of each department and each overseas subsidiary, shares information and undertakes in-house coordination, leading to improvement of TEL's ability to make proposals to meet customer needs and resolve problems, including improving the technical skills and interpersonal skills of the more than 3,000 field engineers worldwide, the localization of start-ups, improving work efficiency using the work-time management system and the concept of the Total Support Center.

### Process integration

TEL leverages its broad lineup of semiconductor production processes such as thin film deposition, coating/development, cleaning, and etching to be the first to devise and develop new integration technologies that aim for reciprocal optimization of multiple processes to propose to customers.

In response to the new growth in technological requirements for semiconductor production processes, TEL is advancing joint development with customers from an early stage, based at its Process Integration Center (PIC), established in 2017. One important issue that PIC is addressing is combination optimization of new deposition and related processing technology required for next-generation memory, AI, devices for 5G, and devices for future quantum computing. Development activities at PIC lead to the provision of the latest technology to customers and the strengthening of partnerships, for seamless work in research, development, integration, production, and services.



### Initiatives for integrated proposals

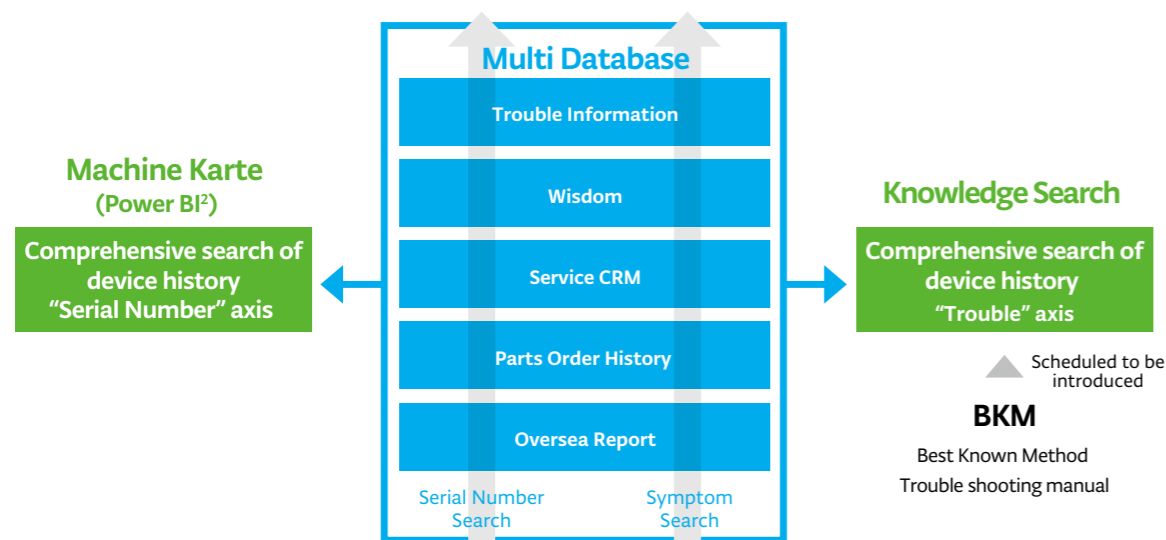
#### Knowledge management

TEL promotes company-wide knowledge management<sup>1</sup> to deliver high-quality service to its customers.

In the area of field service, the company creates a database of customers' equipment records (support and incident history) which can be accessed by global field engineers, thus providing an environment that enables TEL to quickly respond to calls from customers. Furthermore, from April 2019, TEL released a system (in Japanese, English, and Chinese) that allows engineers from around the world to search in their own natural language for information they require, from the vast amount of accumulated technical documentation. These systems have made it easier to retrieve knowledge on issues, whereby the causes of phenomena that arise can be predicted with greater accuracy. This has enabled the company to respond to customers more quickly and more efficiently.

<sup>1</sup> Knowledge management: Management approach to promote internal company sharing of tacit knowledge held by individuals, in order to encourage innovation and to improve overall productivity

#### Knowledge Management Tool



<sup>2</sup> BI: Business Intelligence

#### Work optimization

TEL is striving to improve work efficiency and to enhance service quality by implementing precise work-time management covering about 3,000 field engineers active worldwide. A global timesheet is used for unified management of the types of tasks that engineers undertake, including work involved in starting up equipment and repair work, and the time is taken for them. By analyzing the work data thus accumulated through the global timesheets, the company is intent on improving the efficiency of work, the adjustment of personnel, and approaching issues, leading to the provision of value to customers.

#### Human resource training

TEL is engaged in skills management of field engineers and enhancement of its training structure to provide customers with a high level of service. TEL built a group-wide skills management system in accordance with standards established by SEMATECH (a U.S. consortium for the joint development of semiconductors) and provides service with the most suitable human resource placement for customers, based on an objective understanding of the skills of each engineer. TEL is working on a global basis to review and improve its training curricula and content, with the aim of providing optimal training programs that match the skills of each field engineer.

#### Total Support Center

TEL has built a system to provide global support for its customers based on its Total Support Center (TSC), situated in Japan, the United States, and China. At each TSC, dedicated representatives use accumulated data on information about customers' equipment and similar incidents, collaborating with field engineers and plants in an effort to promptly and appropriately respond to inquiries and troubles that arise.

#### Field solutions business

Semiconductors are seeing advances in miniaturization and integration, focused on demand for MPU<sup>1</sup> and DRAM,<sup>2</sup> while demand is also increasing for general-purpose semiconductors in a wide range of fields, such as medical treatment, finance, transportation, and manufacturing. Extending the life cycle of products is another challenge, evidenced by demand for the long-term stable operation of semiconductors for automobiles and industry.

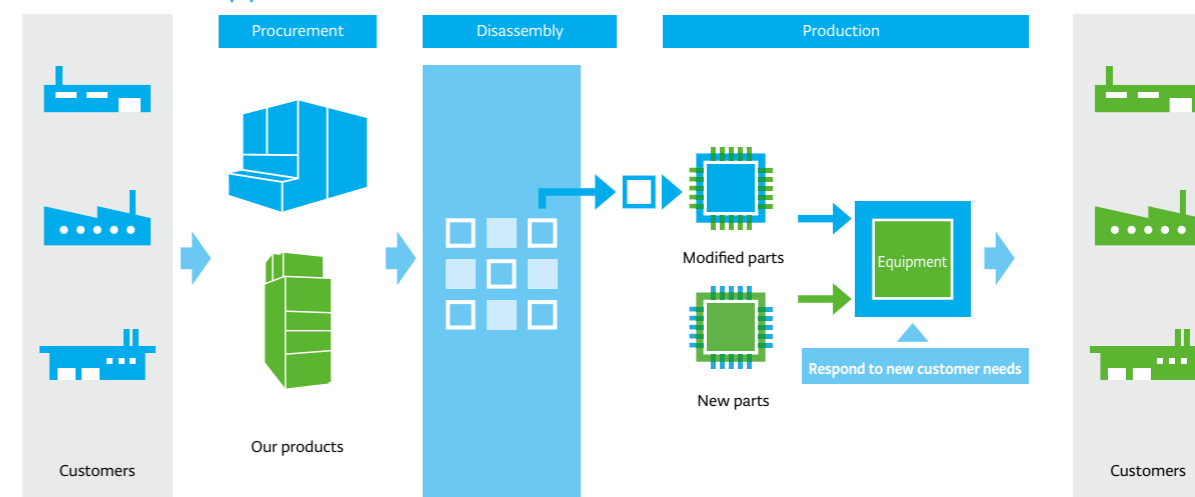
TEL leverages its strength in having delivered more than 69,000 units of equipment the most in the industry, providing used equipment and enabling the provision of remanufactured equipment restored by disassembling used TEL products into modules, modifying those parts that are still usable, and adding new parts where they are lacking.

Also, the company is working to meet the needs of customers, establishing products that accommodate renewal models centered on 200 mm wafers, providing more added value than used and remanufactured equipment, for customers who produce IoT-related products using previous-generation equipment. Renewal models replace old units and parts with new ones, maintaining compatibility with existing processes and offering performance approaching that of the latest equipment in terms of transfer speed, and other aspects. In addition to strengthening its renewal model supply system, TEL is also working on the accumulation and transfer of technology and knowledge related to previous-generation equipment. The company will contribute to customers' businesses while responding appropriately to changing semiconductor needs.

<sup>1</sup> MPU (Micro Processing Unit): Microprocessors or semiconductor chips that mainly provide the computing power for computers

<sup>2</sup> DRAM (Dynamic Random Access Memory): A type of semiconductor storage element for computers, etc.

#### Flow of remanufactured equipment



### Ensuring safety for customers

#### Information provision

Tokyo Electron (TEL) is committed to providing relevant safety information to customers to enable the safe handling of products. All products purchased by customers come with a standard TEL Safety and Environmental Guidelines manual. This manual describes the potential risks associated with the use of our products together with the methods for averting those risks, divided into such categories as chemical, electrical, mechanical, and ergonomic. It also describes safety measures applied to products and recommended methods for product disposal. The manual has been translated into 11 languages\* to ensure that customers around the world can accurately understand the information and use the company's products safely.

Furthermore, the company provides the TEL Safety and Environmental Guidelines together with a manual specific to each equipment, thereby adapting to the specifications of each equipment. In cases where new warnings relating to safety are issued after shipment, TEL advises respective customers individually. TEL is thus providing safety information for its various customers.

In addition, TEL pays close attention to safety when delivering its products that involve the use of hazardous chemicals or high voltage electricity. Particularly when delivering its products to a customer's new production line, the company checks its facilities, equipment, and workplace safety standards beforehand according to its internal rules to ensure a safe environment.



TEL Safety and Environmental Guidelines

#### Training

TEL provides its customers with training on equipment operation and maintenance procedures to ensure they are able to handle TEL products correctly and safely. Centered around its manufacturing sites, TEL has established training centers all over the world, with approximately 50 dedicated instructors conducting practical training courses using actual TEL equipment. So that the training the company provides is always of the highest quality, it uses its own certification system for instructors to ensure that training is delivered by personnel recognized as having the necessary skills. In addition to practical training, TEL also implements web-based education and on-site training at customer sites.

In addition, in order to speed up its response to requests from customers, TEL is promoting the development of surveys using online systems. Through its surveys, TEL collects and analyzes customer feedback on the content of its programs and its equipment, and strives to make improvements based on the survey results, in an effort to develop an enriched training environment.



\* 11 languages: Japanese, English, German, French, Italian, Dutch, Russian, Portuguese, Korean, Traditional Chinese, and Simplified Chinese

### Improvement of customer satisfaction

#### Customer satisfaction survey

Tokyo Electron (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, aimed at just a limited number of divisions. It was expanded to include all semiconductor production equipment divisions in 2014, and later the FPD production equipment division and overseas subsidiaries in 2016, and currently it is implemented company-wide as the Customer Satisfaction Survey Program (CSSP).

Under the CSSP, we conduct customers a survey of specific questions that can lead to practical improvements once a year. Results from the survey are analyzed by product, account (customer), and function (software, development, etc.), and given as feedback to customers. In an effort for improvement, the results are also shared with relevant divisions, such as sales, production, and support. Improvements are also made continuously to all aspects of the actual survey method, from the questions asked, to the analytical methods, and overall operation of the survey activities.

In the CS Survey for fiscal year 2019, responses were received from approximately 1,300 individual customers, which is 67.8% of all customers. TEL received evaluations three points\* or higher on 84.4% of all questions asked.

TEL will continue to aim for three points or higher on 100% of the questions asked, and the entire company will work in unity to drive improvements initiated from the customer perspective.

\* On a four-point scale, three points or higher represents "Very Satisfied or Satisfied"

#### Improvement example

Results of the customer satisfaction survey brought to light certain issues that would not have ordinarily been identified, and the persons-in-charge and managers who are in direct contact with customers took the lead in making improvements, with the cooperation of the relevant divisions.

Continuing from last fiscal year, as a result of efforts to implement more accurate and quick responses to the demands and issues of customers, including enhancing support for software operating across multiple pieces of equipment, TEL improved the evaluation scores received from customers for all questions.

