

ULVAC

ULVAC

真空

ULVAC
VALUE REPORT

2019

ULTIMATE
IN VACUUM

Management Planning Department

ULVAC, Inc.

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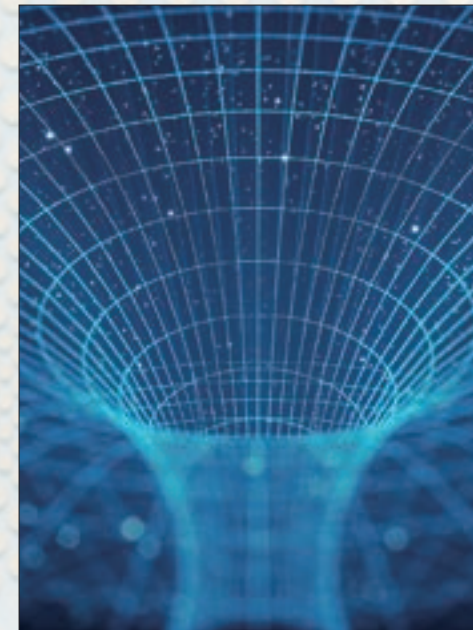
Basic Corporate Philosophy

The ULVAC Group aims to contribute to the development of industries and science by comprehensively utilizing its vacuum and peripheral technologies through the mutual cooperation and collaboration of the Group companies.

Management Policies

- Improve Customer Satisfaction
- Innovations in Production Technology
- Development of Original Products
- Free and Open-minded Organization
- Enhancing Corporate Value

Vacuum Technology, ULVAC's Core Competence



Stated simply, a vacuum is a space where the pressure is lower than the atmospheric pressure. A vacuum has interesting properties: for example, materials' lower boiling points in a vacuum mean they are more likely to evaporate and gas molecules can travel in a straight line in a space. ULVAC has developed various application technologies that exploit the properties of a vacuum in its quest to realize the remarkable potential inherent in vacuum technology.

For example, using vacuum technology, it is possible to create ultrathin films with micron- to nanometer-order thickness. Since such thin films cannot be produced by physically stretching materials, advanced vacuum deposition technology is required for depositing layers of atoms or molecules of materials in a vacuum.

Led by IoT, 5G, and AI, a tremendous wave of technological innovation has brought about the advent of the smart society. Vacuum deposition is destined to fulfill a vital role in the fundamental technologies underpinning the smart society.



ULVAC's Business Segments

Vacuum Equipment Business

FPD and PV production equipment

- Liquid crystal display (LCD) production equipment
- OLED production equipment
- Roll coaters
- Solar cell production equipment

Semiconductor and electronic device production equipment

- Semiconductor production equipment
- LED production equipment
- Electronic device production equipment

Components

- Vacuum pumps
- Vacuum gauges
- Helium leak detectors
- Process gas monitors
- Thin-film measuring equipment
- EB, RF and DC power generators
- Vacuum valves
- Deposition controllers
- Vacuum transfer robots

Industrial equipment

- Vacuum heat treatment furnaces
- Vacuum melting furnaces
- Vacuum brazing furnaces
- Rare-earth magnet production equipment
- Vacuum freeze-drying equipment
- High-vacuum distillation equipment
- Automatic leak testers

Vacuum Application Business

Materials

- Sputtering target materials
- High-melting-point materials and production of components
- Nano-metal inks

Others

- Surface analyzers
- Controllers
- Mask blanks

Major Vacuum Equipment

Sputtering equipment, vacuum evaporation equipment, CVD equipment, etching equipment, ashing equipment, ion implantation equipment, annealing equipment, etc.



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Editorial Policy

We publish the ULVAC VALUE REPORT as a summary of our initiatives in the past year to achieve sustainable growth and enhancement of corporate value, our medium- to long-term vision, and our management approach.

We consider this report to be an important communication tool to facilitate stakeholders' understanding of our activities and deepen dialogue with them.

■ **Published:**
November 2019 (Previous issue published in November 2018)

■ **Guidelines Referenced:**
ISO26000: 2010 (Guidance on social responsibility) First Edition
The International Integrated Reporting Framework, the International Integrated Reporting Council (IIRC)

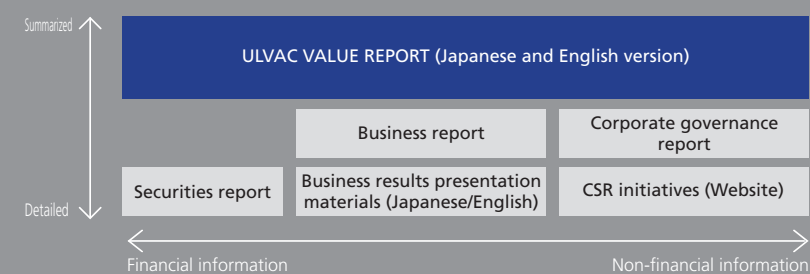
Report's Scope and Period

Scope: ULVAC Group
In principle, this report covers the ULVAC Group; any portions that cover only ULVAC, Inc. are indicated as such.

Period: Year ended June 30, 2019
(July 1, 2018 to June 30, 2019, Fiscal 2018)
Some portions of the report include activities and initiatives from July 2019 onward.

<Disclaimer>
Figures shown in tables and graphs in this report may not add up to the indicated total because of rounding. Some figures have been revised from previous years' data because the scope of reporting was expanded or calculating methods have been changed.

ULVAC's Communication Tools



We endeavor to achieve the optimum information disclosure by making various communication tools available to meet your needs.

To help you deepen your understanding of the ULVAC Group, our communication tools range from statutory disclosure documentation centering on information on financial closing to this report that offers non-financial information, such as social and environmental initiatives indispensable for creating corporate value, in addition to information on business activities, management strategies, and financial information. Please also refer to our website for the latest information.

ULVAC's History

When ULVAC was founded back in 1952, vacuum technology had not yet entered widespread use in Japan. As a trailblazer, we championed vacuum technology by introducing new technologies to the market and addressing the needs of customers in diverse industries. ULVAC will continue tackling technological innovation to speed progress toward the "smart society" to which we aspire.

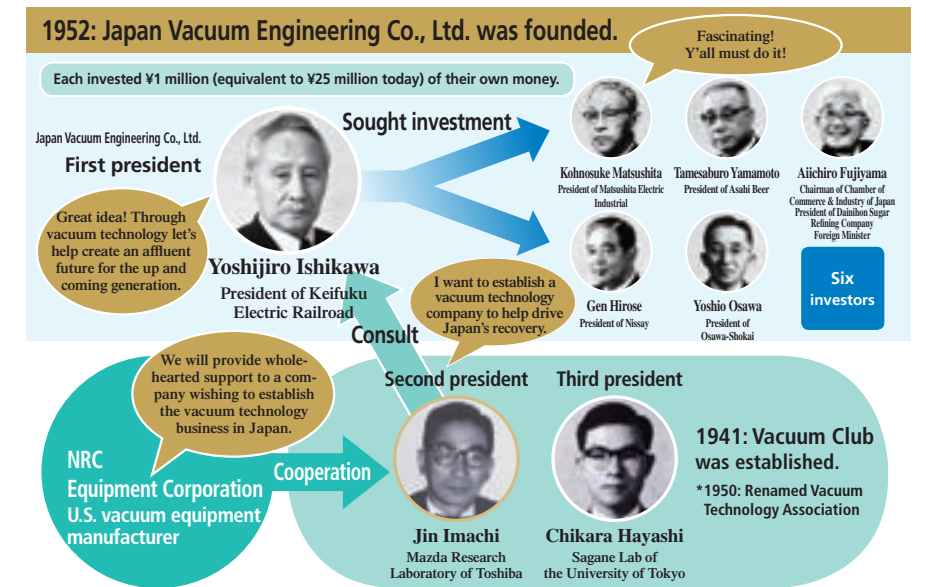
Challenging new industrial sectors

Ever since its foundation, ULVAC has been refining its capability to flexibly manipulate vacuum technology. In step with the changing industrial structure, we have always boldly sought to develop new technologies while expanding application fields to include the production of automobiles, chemicals, pharmaceuticals, and food, metallurgy, as well as mass production of semiconductors and electronic devices, flat-panel displays, and organic light-emitting diode displays.

Inspired by the promise of the emerging "smart society" where electronics support and connect every industry and lifestyle, we are confident that our vacuum technology will be a key to the advance of the cluster of transformative technologies, including IoT, big data, artificial intelligence, and self-driving vehicles, that will underpin next-generation lifestyles.

The story of ULVAC's foundation

At the time when Japan was engaged in post-war recovery, a group of talented young researchers and engineers gathered with the aim of "contributing to the revival of Japanese industry through vacuum technology." In 1952 six angel investors, impressed by the passion of these visionary young people, invested in the establishment of Japan Vacuum Engineering Co., Ltd., the forerunner of present-day ULVAC.



*Names of companies, organizations and titles are those at the time mentioned.

1952~

Automobile



Reflectors for automobiles



Vacuum evaporation equipment

1960~

Chemical/ pharmaceutical/food



Pharmaceuticals



High-vacuum distillation equipment for plasticizers

1962~

Metal/steel



Special steel



100 kg-class vacuum induction melting furnace

1973~

Liquid crystal display



LCD calculator display



Transparent conductive film deposition equipment

1975~

Semiconductor



Computer (Photo: Courtesy of IBM Archives)



System 731

1983~

Electronic storage media



Discs



In-line sputtering equipment

1992~

FPD



Flat-panel display



LCD production equipment

2016~

OLED



OLED



OLED production equipment

History

- 1952**
 - Japan Vacuum Engineering Co., Ltd. was founded.
- 1955**
 - Opened the Omori Plant in Tokyo to start manufacturing equipment in Japan.
- 1959**
 - Opened the Yokohama Plant in Kanagawa Prefecture.
- 1964**
 - Established the first overseas subsidiary in Hong Kong.
- 1968**
 - Head Office/Plant completed in Chigasaki, Kanagawa Prefecture.
- 1969**
 - Changed the company name in English to ULVAC CORPORATION to promote exports.
- 1971**
 - Established a subsidiary in Hamburg, then West Germany, as a base for cultivating the western European market.
- 1972**
 - Opened the Institute for Super Materials as ULVAC's first research facility.
- 1975**
 - Opened the North American Office. Established a subsidiary in North America as a base for exports to the U.S.
- 1977**
 - Established KYUSYU ULVAC CORPORATION (present-day ULVAC KYUSHU CORPORATION) in Kagoshima Prefecture to expand sales activities in the Kyushu area.
- 1982**
 - Established a subsidiary in Taiwan.
 - Established the Tsukuba Institute for Super Materials in Tsukuba Science City (present-day Tsukuba City), Ibaraki Prefecture.
- 1983**
 - Opened the Beijing Office in China.
- 1987**
 - Established ULVAC TOHOKU, Inc. in Aomori Prefecture to strengthen production of large-scale equipment.
- 1990**
 - Opened the Fuji Susono Plant in Shizuoka Prefecture, as a plant dedicated to semiconductor production equipment.
- 1995**
 - Established a vacuum pump production base in China.
 - Established a subsidiary in South Korea.
- 2001**
 - Changed the company name to ULVAC, Inc.
- 2002**
 - Established a subsidiary in Singapore.
- 2003**
 - Established a base for full-scale production and field support in China.
- 2004**
 - Listed on the First Section of the Tokyo Stock Exchange.
 - New buildings of the Head Office/Plant (Chigasaki, Kanagawa Prefecture) completed.
- 2005**
 - Established a large-scale production base for large LCD production equipment in South Korea.
 - Established a subsidiary in Thailand.
 - Established R&D bases in South Korea and Taiwan.
 - Established a subsidiary in Malaysia.
- 2006**
 - Established a production subsidiary for large LCD production equipment in Taiwan.
- 2007**
 - Established a base in India.
- 2010**
 - Relocated the Chiba Institute for Super Materials to the Tomisato Industrial Park in Chiba Prefecture to enhance R&D.
- 2011**
 - Established the South Korea Institute for Super Materials to enhance R&D in South Korea.
- 2015**
 - Established the Future Technology Research Laboratory in Tsukuba, Ibaraki Prefecture.
- 2016**
 - Began manufacturing production equipment for large displays in China.
- 2018**
 - Celebrated the 50th anniversary of the completion of the Head Office/Plant (Chigasaki, Kanagawa Prefecture).

ULVAC's Businesses

Across a wide range of industries, ULVAC is a source of numerous products and technologies that meet the needs of our customers and the market.

At present, ULVAC operates businesses in six areas.

Net sales by business segment (amount and %)

Vacuum Application Business

¥33.0 billion 15%

Vacuum Equipment Business

¥187.7 billion 85%

Others

ULVAC is a source of technology derived from vacuum-based production equipment for diverse industries.



X-ray photoelectron spectroscopy equipment

Materials

ULVAC is a source of electronic materials, such as sputtering targets, for diverse industries. In addition, in the high-performance materials sector, ULVAC is a source of integrated manufacturing and precision processing technologies for titanium, tantalum, zirconium, niobium, etc.



Sputtering target materials for FPD production equipment

Industrial equipment

ULVAC has been involved in this business sector since the emergence of vacuum technology in the 1950s. Leveraging the



Vacuum melting furnace

Components

As a comprehensive vacuum product manufacturer, ULVAC is also dedicated to the development of components.

ULVAC pursues cutting-edge vacuum technology while providing a wide range of product lines, extending from vacuum pumps and measurement and analysis equipment, to components, such as power generators for various types of deposition equipment and vacuum valves.



Cryopump



Leak detector



Dry vacuum pump



Electronic device production equipment



Semiconductor production equipment

FPD and PV production equipment

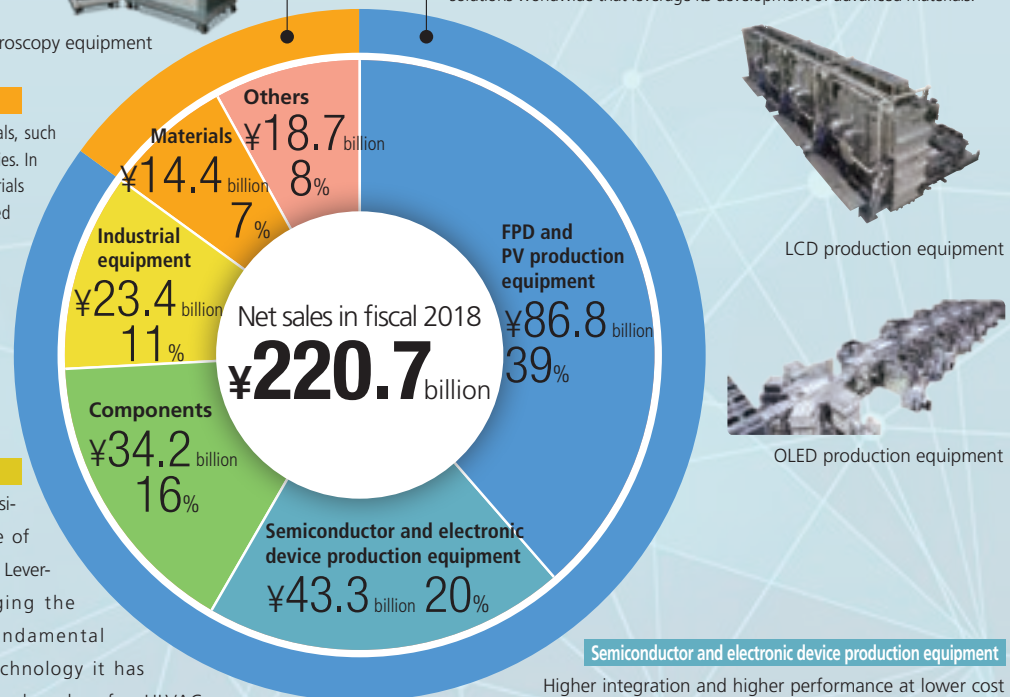
As fits a company involved in a range of FPD and PV manufacturing technologies, ULVAC not only develops production equipment but also offers solutions worldwide that leverage its development of advanced materials.



LCD production equipment



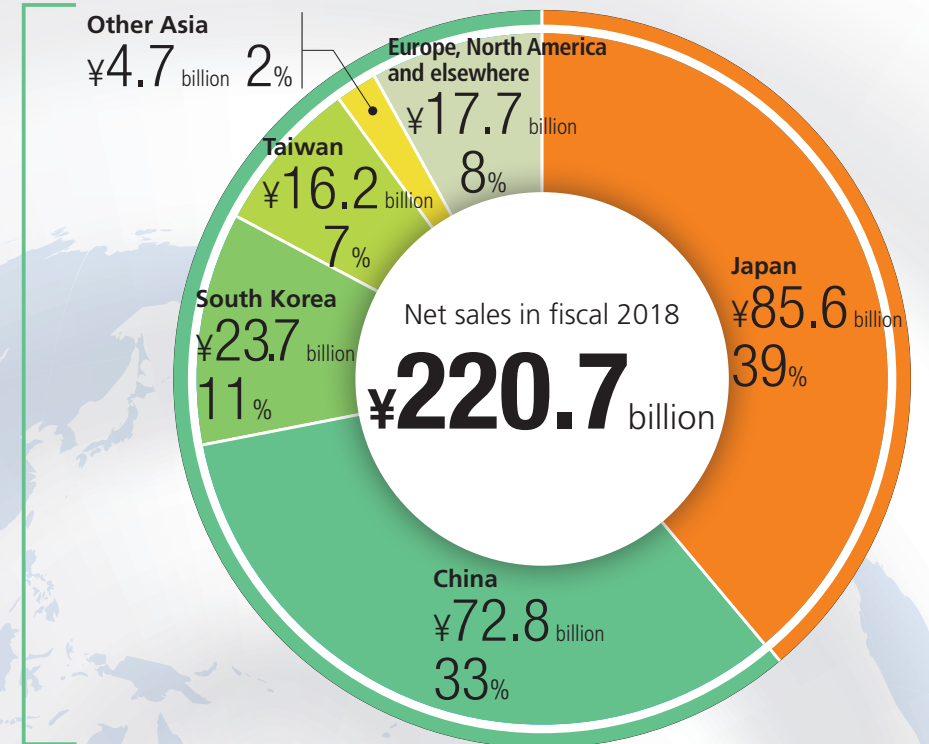
OLED production equipment



Net sales by region (amount and %)

Ratio of sales overseas

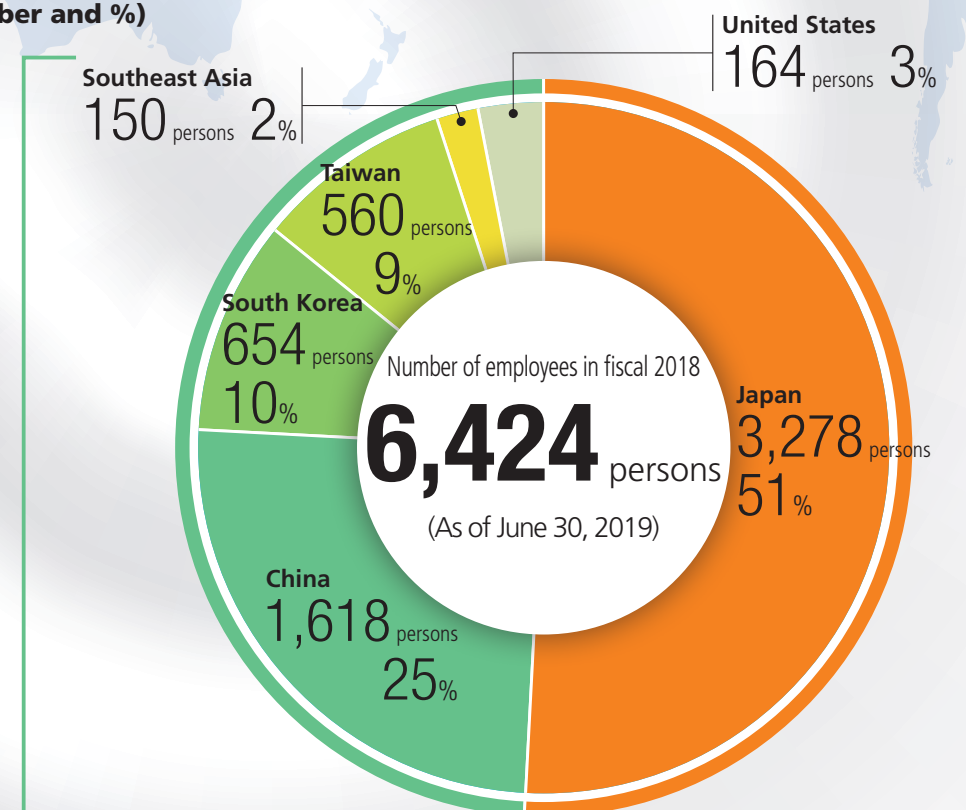
61%



Employees by region (number and %)

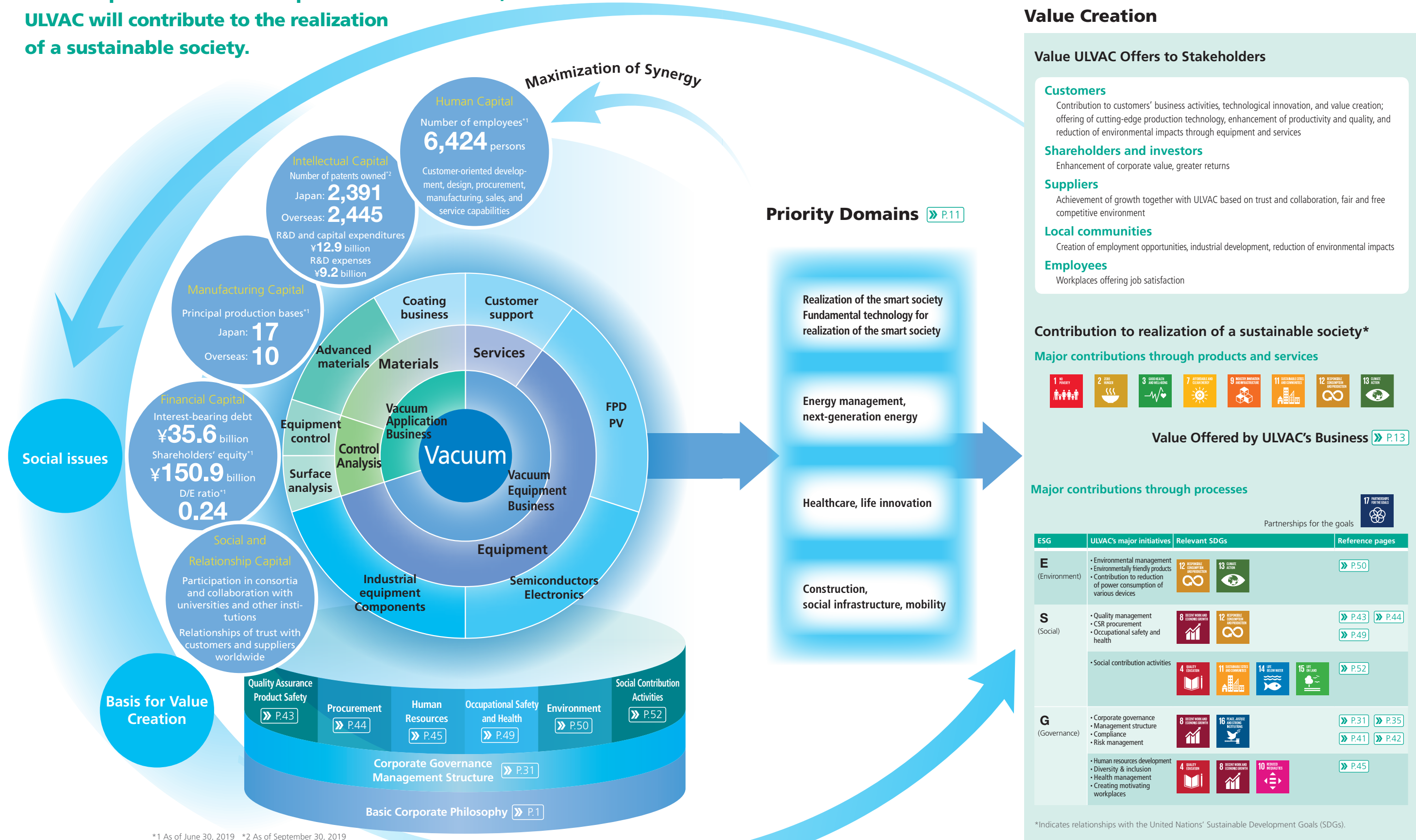
Ratio of employees overseas

49%



ULVAC's Value Creation <Process>

As a comprehensive vacuum product manufacturer, ULVAC will contribute to the realization of a sustainable society.



Value Creation

Value ULVAC Offers to Stakeholders

Customers

Contribution to customers' business activities, technological innovation, and value creation; offering of cutting-edge production technology, enhancement of productivity and quality, and reduction of environmental impacts through equipment and services

Shareholders and investors

Enhancement of corporate value, greater returns

Suppliers

Achievement of growth together with ULVAC based on trust and collaboration, fair and free competitive environment

Local communities

Creation of employment opportunities, industrial development, reduction of environmental impacts

Employees

Workplaces offering job satisfaction

Contribution to realization of a sustainable society*

Major contributions through products and services



Value Offered by ULVAC's Business >> P.13

Major contributions through processes

Partnerships for the goals





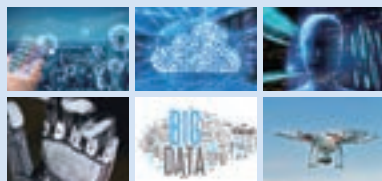
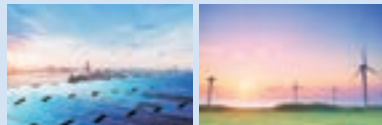


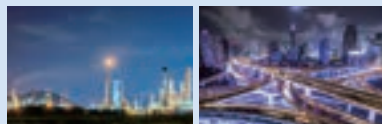
ESG	ULVAC's major initiatives	Relevant SDGs	Reference pages
E (Environment)	<ul style="list-style-type: none"> Environmental management Environmentally friendly products Contribution to reduction of power consumption of various devices 		>> P.50
S (Social)	<ul style="list-style-type: none"> Quality management CSR procurement Occupational safety and health 		>> P.43 >> P.44 >> P.49
	Social contribution activities		>> P.52
G (Governance)	<ul style="list-style-type: none"> Corporate governance Management structure Compliance Risk management 		>> P.31 >> P.35 >> P.41 >> P.42
	<ul style="list-style-type: none"> Human resources development Diversity & inclusion Health management Creating motivating workplaces 		>> P.45

*Indicates relationships with the United Nations' Sustainable Development Goals (SDGs).

ULVAC's Value Creation <Priority Issues>

We are committed to realizing a society that is not only safe and secure but also affluent and convenient by offering value utilizing vacuum technology, which is indispensable for industrial and scientific development.

We will continue helping to resolve social issues in cooperation with our customers through the provision of products and solutions to them.

Social issues	Market opportunities	ULVAC's business activities						Main value offered by the business	Customers and their products	Contribution to resolution of principal social issues*
		Priority domains	FPD and PV production equipment	Semiconductor production equipment	Electronic device production equipment	Industrial equipment	Components			
<ul style="list-style-type: none"> Establishment of global network infrastructure and the smart society, progress of 5G and IoT 	<ul style="list-style-type: none"> Aspiration for the progress of all industries and technological innovation Diversification of semiconductor and electronic device applications and needs Trend toward devices with smaller size, more speed, larger capacity and lower power consumption 	Realization of the smart society Autonomous-driving, agriculture, healthcare, virtual currency, etc. 	See >> P.26	See >> P.29	See >> P.30	Response to new semiconductor and electronic device fields and needs by applying vacuum deposition and other technologies and R&D of cutting-edge processes through collaborative creation with customers	FPD, semiconductor, electronic equipment, and device manufacturers Semiconductors: Memory, logic 3D-NAND, PCRAM, CPU, etc. Functional devices: Sensing, communication (5G), display MEMS, SAW/FBAR devices, OLED, etc.	Contribution to realization of an advanced, convenient, safe and secure, global society 		
		Fundamental technology for realization of the smart society IoT, cloud, AI, robots, big data, drones 							See >> P.25	See >> P.27
<ul style="list-style-type: none"> Environmental issues, such as global warming and climate change Global energy issues due to dependence on finite resources 	<ul style="list-style-type: none"> Progress of renewable and low-carbon energy systems Improvement in energy conversion efficiency 	Energy management, next-generation energy 	See >> P.28	See >> P.29	See >> P.30	Enhancement of performance of solar cells and power devices by vacuum deposition, ion implantation and other technologies, contribution to lower power consumption of various devices	Solar cell manufacturers, battery manufacturers, etc. Energy: Heat generation, power storage, conversion Solar cells, all-solid-state batteries, power devices, magnets for wind turbines	Contribution to creation of a sustainable society by power generation, energy storage, and energy saving 		
<ul style="list-style-type: none"> Food safety and security, population explosion and sharp increase in demand for food in emerging countries, increase in food loss Longevity, needs and progress of health promotion and healthcare 	<ul style="list-style-type: none"> Longer preservation of food and pharmaceuticals, volume reduction 	Healthcare, life innovation 				See >> P.28	See >> P.29	See >> P.30	Longer life and volume reduction of freeze-dried food, powder vaccines, drugs, etc. by vacuum freeze drying and other technologies	Food manufacturers, pharmaceutical manufacturers, etc. Foodstuffs, pharmaceuticals: Freeze drying Freeze-dried foods, emergency provisions, supplements, powder vaccines, etc.
<ul style="list-style-type: none"> Aging of infrastructure in developed countries Development of industrial infrastructure in emerging countries Wider gap between rich and poor 	<ul style="list-style-type: none"> Development of safe, secure and comfortable infrastructure 	Construction, social infrastructure, mobility 	See >> P.28	See >> P.29	See >> P.30				Enhancement of performance of industrial materials and response to new materials by applying vacuum heat treatment and other technologies	Chemical and materials manufacturers, steelmakers, transportation equipment manufacturers, etc. Industrial materials: Heat treatment Glass building materials, industrial materials, materials for transportation equipment, etc.

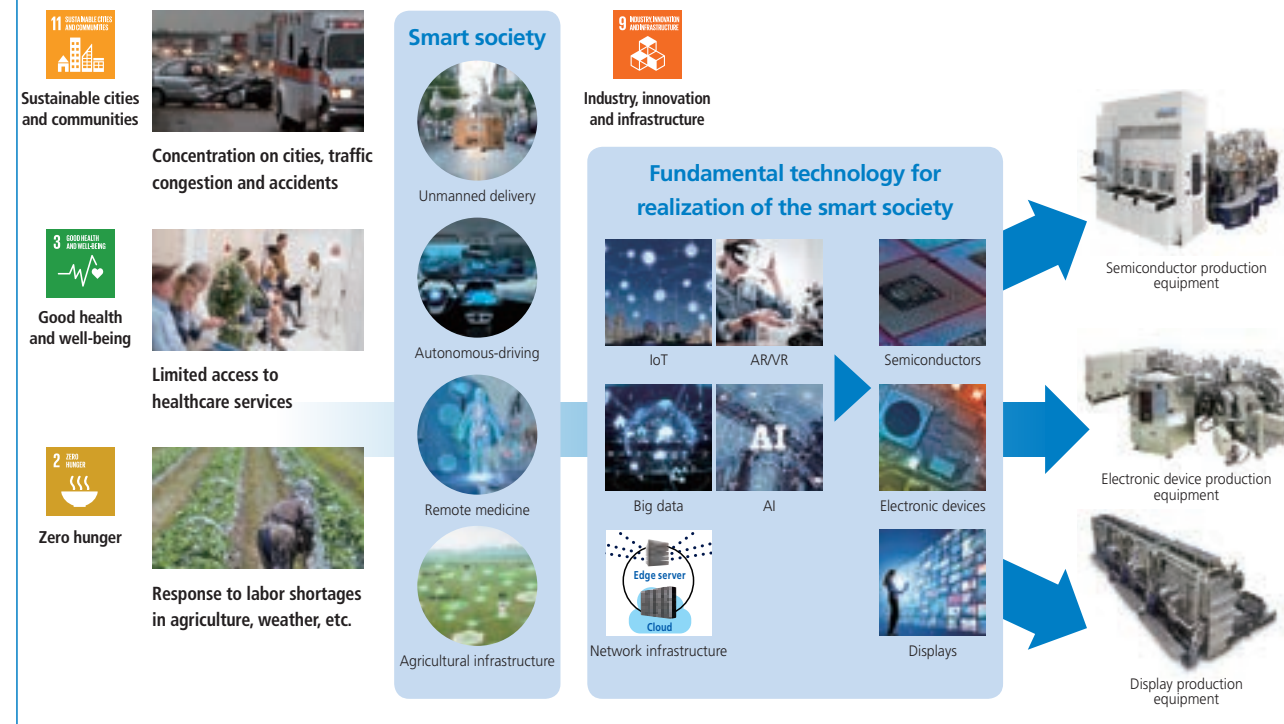
*Indicates relationships with the United Nations' Sustainable Development Goals (SDGs).

ULVAC's Value Creation <Value Offered by ULVAC's Business>

Through implementation of the Basic Corporate Philosophy stating that the ULVAC Group aims to contribute to the development of industries and science by comprehensively utilizing its vacuum and peripheral technologies, ULVAC aims to be an enterprise indispensable for society.

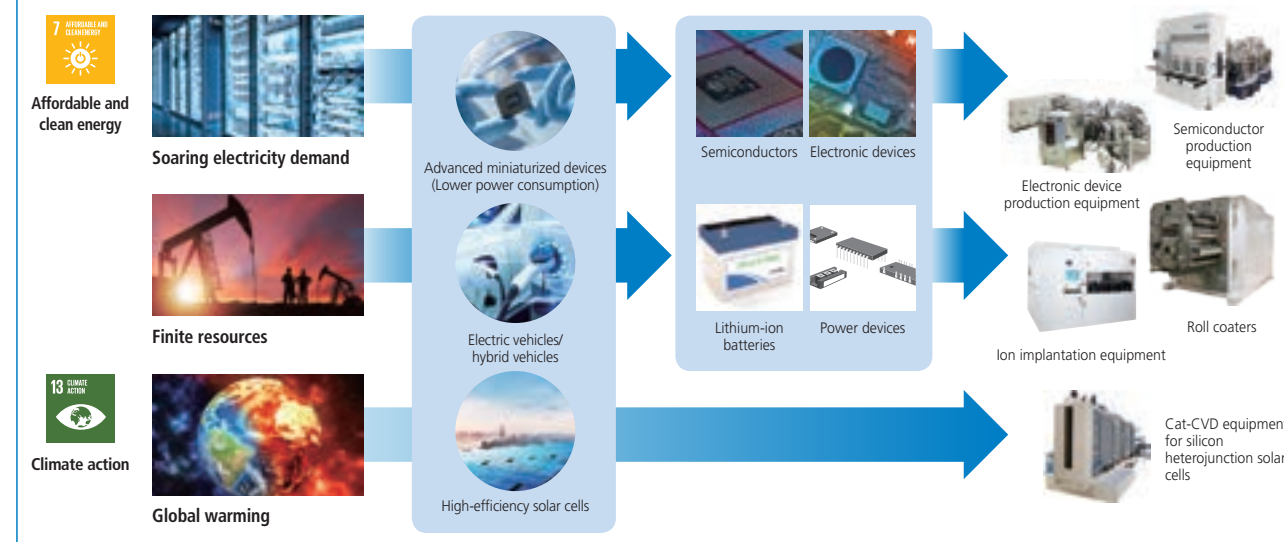
ULVAC supports the smart society

The smart society, as embodied by IoT and 5G, is expected to become a social infrastructure that can balance the resolution of the social issues addressed by the SDGs and economic development. ULVAC is helping bring about a smart society, whose attributes will include sustainable cities and communities, good health and well-being, and zero hunger, through technological innovation in semiconductors, electronic devices, displays, and other fields, thus contributing to realization of an advanced, convenient, safe and secure, global society.



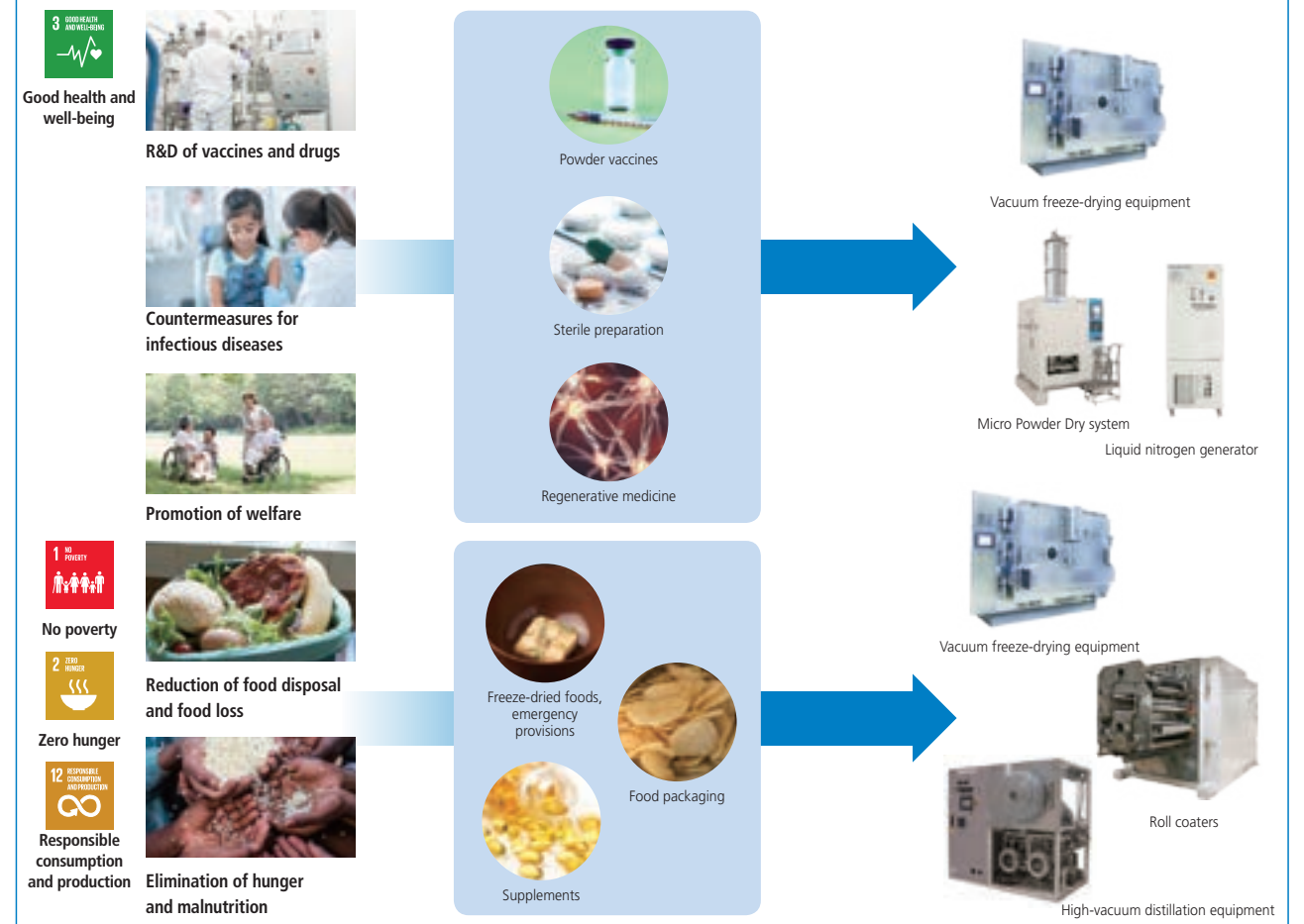
Addressing soaring electricity demand and environmental and energy issues

Environmental issues, such as climate change and global warming, and global energy issues due to dependence on finite resources are intensifying. ULVAC will contribute to the creation of a sustainable society by power generation, energy storage and energy saving through enhancement of the performance of solar cells, batteries, power devices, and other products. ULVAC will offer comprehensive support for digitization by helping address the issue of soaring electricity demand that entails the emergence of the smart society.



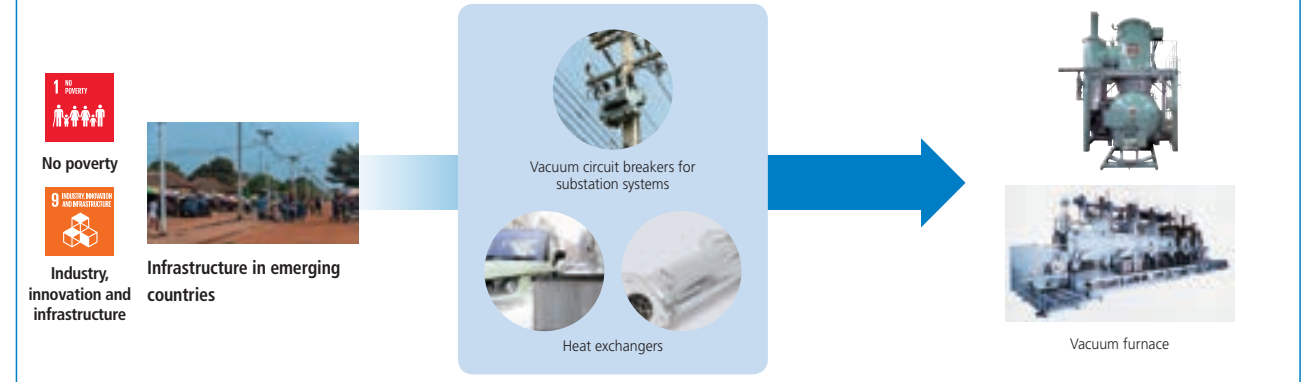
Contributing also to the food and pharmaceutical fields through comprehensive utilization of vacuum technology

While the population explosion and sharp increase in demand for food in emerging countries highlight the need to eliminate hunger and malnutrition, in developed countries, the disposal of food and food loss are increasing. There are also ever-greater needs for healthcare, including countermeasures for infectious diseases, greater access to healthcare, promotion of welfare, and development of vaccines and drugs. ULVAC contributes to human health, the future of medicine, elimination of hunger and malnutrition, and realization of a sustainable society with minimal food loss by enabling longer preservation of food and pharmaceuticals and safe transportation through longer life and volume reduction of food, powder vaccines, drugs, etc. using vacuum technology.



Contributing to development of infrastructure in emerging countries

ULVAC has been contributing to diverse industries through vacuum heat treatment technology ever since Japan's postwar economic boom. ULVAC will also contribute to development of safe, secure and comfortable infrastructure in emerging countries by enhancing the performance of industrial materials.



ULVAC's Value Creation <Research & Development and Global Expansion>

Research & Development

Ongoing value creation from a medium- to long-term perspective

ULVAC has long been a source of vacuum-technology-based products and materials indispensable for wide-ranging industries. We will continue to promote innovative, pioneering R&D capable of addressing actual and potential needs and create high-added-value products and technologies, thus contributing to the progress of society.

To continue to provide innovative technologies and products in the everchanging market, our R&D projects undergo selection and focus by making a clear distinction between "development for improvement of existing products" and "development of fundamental technologies in preparation for the future" based on analysis of customer needs and market trends. Moreover, our development structure leverages business partnerships with various companies and research institutions.

We are also striving to equip ourselves with the advanced technologies necessary to respond swiftly to the progress of 5G and IoT in line with the establishment of global network infrastructure and the smart society while flexibly addressing social issues such as global warming and climate change, thus establishing a foundation for long-term sustainable growth.

Principal themes

- Next-generation non-volatile memory
- High-density packaging
- Electronic devices, MEMS/sensors
- Hyperfine wiring
- Next-generation displays
- Power devices
- Next-generation batteries
- High-efficiency solar cells
- High-functional films
- The environment
- New energy
- Medical

Relevant SDGs

ULVAC-Osaka University Joint Research Laboratory for Future Technology opens at Osaka University

Establishment of a base for fundamental research and initiatives for human resources development

On November 1, 2018, ULVAC, Inc. and the Graduated School of Engineering at Osaka University established the ULVAC-Osaka University Joint Research Laboratory for Future Technology (hereafter referred to as the "Joint Research Lab") in the Central Terrace Building of the University's Suita Campus. Through Osaka University's industry-academia collaboration framework, the Joint Research Lab aims to promote mutual exchange among researchers and build an R&D network, contribute to scientific advancement and the resolution of technical issues in the medical engineering field, and develop highly creative university human resources. ULVAC aims to employ its own in-house technologies to create new value, which include applications for next-generation FPDs, fabrication of semiconducting quantum dots for artificial photosynthesis and technology for their mass-production, as well as ultra-high-speed freeze-drying technology for medical applications such as cell preservation.

Research themes

- 1) Development of cryogenic cold storage materials using rare-earth nitride
- 2) Development of alloy powder that is anisotropic and property-controlled
- 3) Establishment of a cell preservation technique using ultrafast freeze-drying technology, etc.

Central Terrace Building at the Suita Campus of Osaka University

Global Network

Solution networks offering solutions to support industrial development worldwide

ULVAC has established optimal networks covering development, sales, manufacturing, and services not only for Japan but also for the United States, Europe and Asia.

"Open R&D"

Group companies

- Raising R&D efficiency
- Enhancing ULVAC's technology portfolio
- Complementing and reinforcing technologies

ULVAC conducts R&D near customers and shares the outcomes throughout the Group.

Global production system

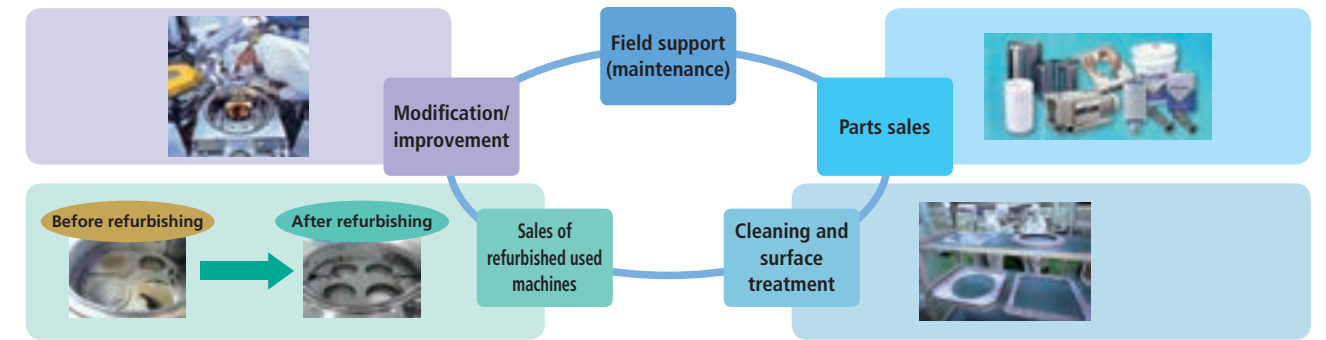
ULVAC has an extensive production system in Japan, China, South Korea, and Taiwan and has established a supply chain for each site.

Regional supply chain

Customer Support

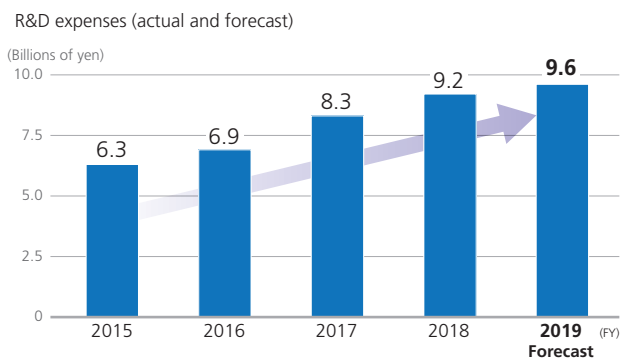
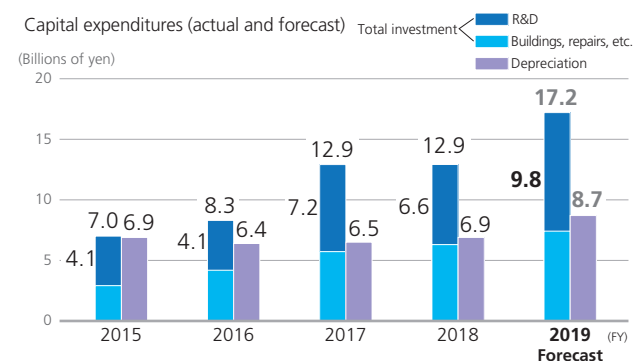
ULVAC's customer support solutions pool the Group's knowledge

Our customer support network (66 bases in 13 countries) in Japan and around the world underpins our customers' production operations in a manner that meets their needs throughout the lifecycle. We offer comprehensive maintenance service covering components and make proposals for improvement and refurbishment covering customers' processes. Furthermore, by using information on customer needs as feedback for the development of new equipment, we aim to offer even more sophisticated vacuum technologies and service.



Capital Expenditures and R&D Expenses (Actual and Forecast)

R&D investments (capital expenditures for R&D and R&D expenses) are expected to continue increasing. Active development is expected to lead to future growth, along with efforts in next-generation displays/logic and next-generation non-volatile memory.



Relevant SDGs

Effective utilization of resources throughout the life cycle and addressing environmental issues

Initiatives for enhancement of equipment recyclability and production technology improvement

Modification of equipment and machines already in operation, reduction of power consumption, maintenance that also covers components

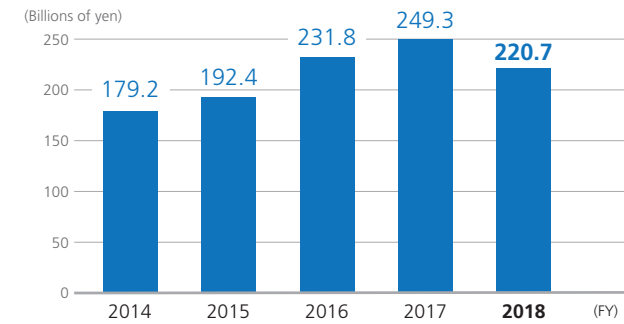
Rejuvenation, precision cleaning, and resource recovery (extension of component life and the cleaning cycle, recovery of valuable materials, etc.)

Modification of equipment, sales of refurbished used machines

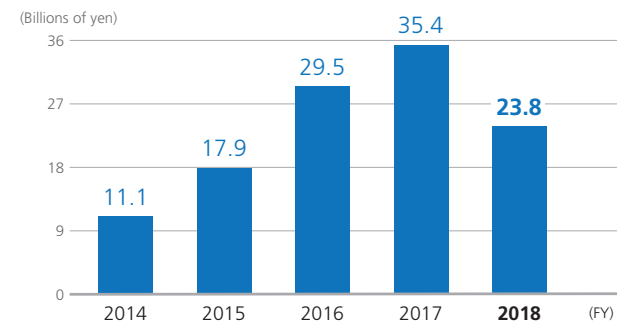
Consolidated Financial and Non-financial Highlights

Consolidated Financial Highlights

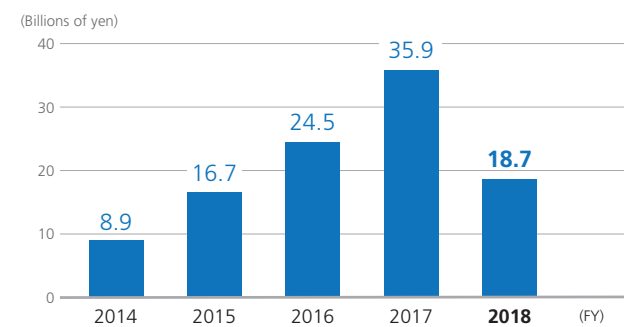
Net sales



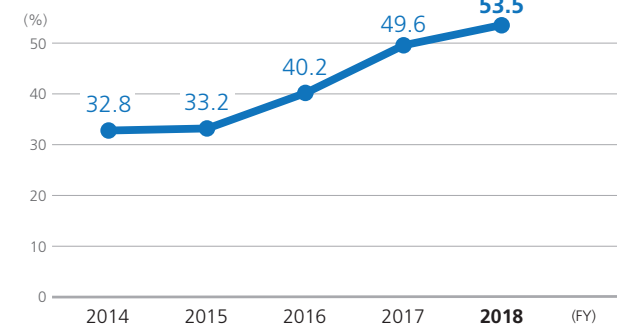
Operating profit



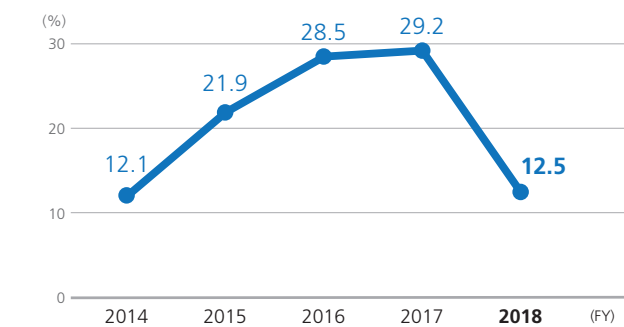
Net income



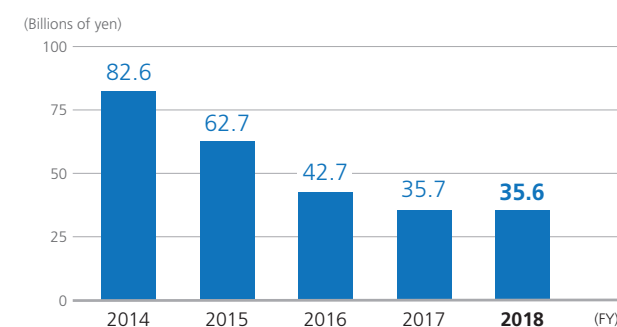
Equity ratio



ROE (Return on equity)

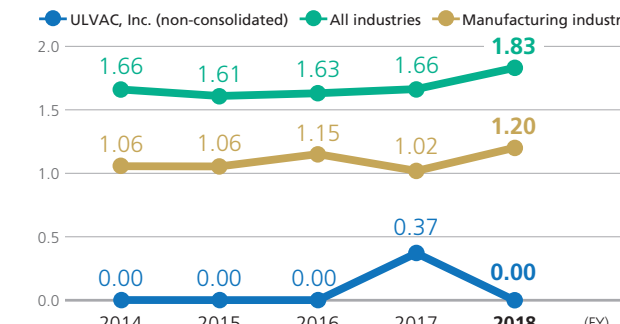


Interest-bearing debt



Non-financial Highlights

Rate of lost-work-time injuries

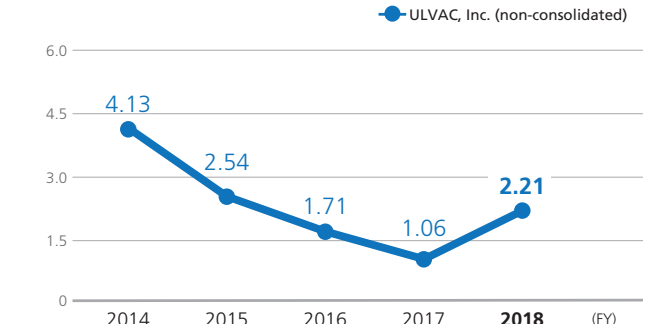


*Source for average data for all industries and manufacturing industry: "Survey on Industrial Accidents 2018" by the Ministry of Health, Labour and Welfare of Japan.

ULVAC has been promoting various safety initiatives, including risk assessment, through the operation of the Occupational Safety and Health Management System (OSHMS), resulting in workplaces whose safety greatly surpasses the industry average. With "safety first" as the Group's principle, we will redouble our efforts to eliminate occupational accidents.

For details >> P.49

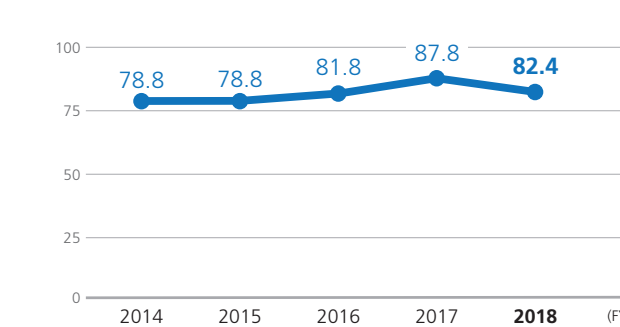
Voluntary retirement rate (%)



We recognize that people are the source of sustainable value creation and our most important asset. Retention of talented human resources is a prerequisite for continuous technological innovation in a rapidly changing industry. We will continue efforts to retain human resources by pursuing various initiatives.

For details >> P.47

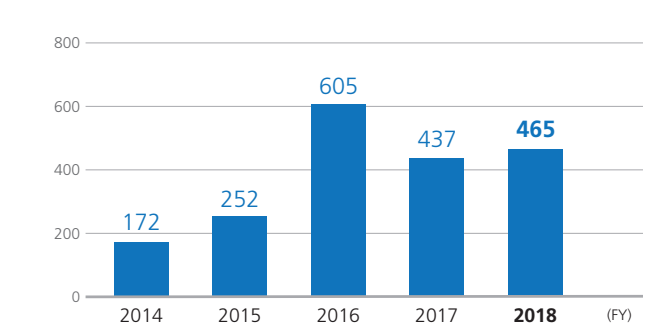
Localization ratio of presidents of overseas subsidiaries (%)



Convinced it is preferable to appoint people of the respective countries and regions to be in charge of management of overseas bases, we have been fostering and promoting local managers and next-generation executives and are promoting assignment of local employees to important positions overseas.

For details >> P.39

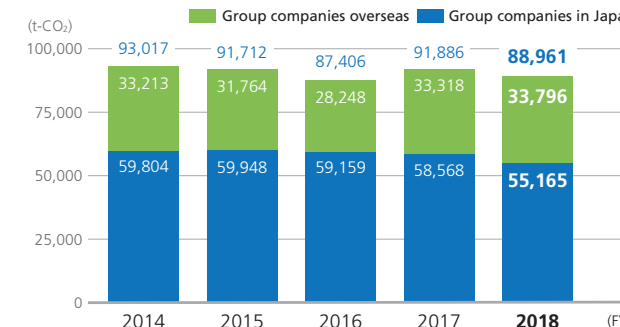
Number of people participating in vacuum demonstration classes (Persons)



ULVAC holds vacuum demonstration classes and plant tours for local schools and other public institutions and for people in local communities. As part of our collaboration with Chigasaki City on education in recent years, we are vigorously conducting activities designed to encourage as many young people as possible to take an informed interest in science, since the future leaders will be drawn from their ranks, for example by holding classes for high school students on the world of work and offering junior high school students opportunities to gain experience in the workplace.

For details >> P.52

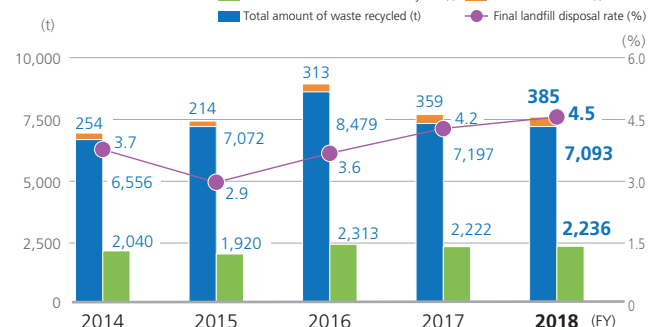
CO₂ emissions



Recognizing that electricity accounts for a large proportion of energy consumption, we are promoting energy saving in production and product development and evaluation while introducing facilities with excellent energy-saving performance.

For details >> P.50

Waste emissions



We are taking steps to reduce landfill disposal of waste and increase the recycling rate while promoting resource-conscious manufacturing, including design to reduce processing losses and minimize waste materials.

For details >> P.50

Commitment of Top Management

Aiming for sustainable growth and resolution of social issues by capitalizing on vacuum technology



Setsuo Iwashita

President and Chief Executive Officer

ULVAC's vacuum technology: supporting a sustainable society

● ULVAC's mission and vision

Ever since our foundation in 1952, adhering to the Basic Corporate Philosophy stating ULVAC's aspiration "to contribute to the development of industries and science by comprehensively utilizing its vacuum and peripheral technologies," we have developed various application and processing technologies capitalizing on the properties of vacuum, expanding application fields—ranging from automobile to chemical, pharmaceutical, and food, metallurgy, semiconductor and electronic devices, including LCD panels (FPD) and OLED—by embracing a succession of new technologies as industry continues to evolve.

Going forward, ULVAC is committed to supporting the smart society in which diverse industries will become increasingly electronics-oriented as it engages in technological innovation. In terms of management, according greater emphasis to maximizing our contribution to the sustainable development of society and resolution of social issues through the development of industries and science by comprehensively utilizing vacuum technology, ULVAC aims to achieve sustainable growth over the medium to long term and enhancement of corporate value.

● Sustainable growth by supporting technological innovation for the smart society

In view of increasing urban concentration and population aging, the contemporary world is exposed to risks, including shortages of energy, water, and food, traffic congestion, inadequate healthcare, and changes in the natural environment. Meanwhile, as a mighty wave of technological innovation, the like of which is thought to occur only once in several decades, opens up extraordinary new possibilities, moves are afoot to resolve social issues through speedier telecommunications, lower power consumption, automation of transportation and logistics, major gains in agricultural productivity, and progress in healthcare to extend healthy life expectancy.

As technological innovation progresses, with AI, IoT, and 5G communication to the fore, diverse industries are becoming electronics-oriented amid rising expectations that the advent of the smart society will lead to resolution of various social issues. In this regard, semiconductor memories and logic devices, MEMS/sensors, power devices, and OLED are key devices. In these growth markets, ULVAC will support the realization of a smart society by providing deposition processing technology and equipment fundamental technologies. Moreover, by integrating such core technologies and creating and offering new applications, we will contribute to the progress of the smart society and the related expansion of business opportunities.

● Contribution to resolution of social issues as a comprehensive vacuum product manufacturer

As a comprehensive vacuum product manufacturer mindful of ESG and determined to address the SDGs, there are numerous fields where ULVAC is in a position to contribute to the resolution of environmental and social issues on the global stage.

Among the fundamental technologies that support the smart society, there is a need for semiconductors with higher processing speed and lower power consumption, in response to rapidly growing volumes of data and to curb the explosive rise in demand for electrical power. ULVAC is responding to these needs by offering technology and production equipment in the field of advanced miniaturized devices, such non-volatile memory and packaging. We are also addressing the demand for the high-density packaging technology essential for the AI chips that will be applied in increasingly sophisticated computing systems. In addition, we will help bring about new applications in the smart society, including CASE transformation in the automotive industry, advances in mobile devices, and the expansion of 5G communications networks, through key enabling technologies for high-performance displays, batteries, power devices, MEMS/sensors, and more. By seizing such opportunities in the market, we will contribute to the realization of an affluent society that is safe and secure.

Turning to energy management and next-generation energy that can help resolve social issues such as global warming and climate change as well as resource depletion, the progress of renewable low-carbon energy systems and the enhancement of energy conversion efficiency are market requirements. We will contribute to the creation of a sustainable society by power generation, energy storage and energy saving through solar cells, lithium-ion batteries, and power devices by capitalizing on vacuum deposition and ion implantation technologies.

Expanding market opportunities in the healthcare field and the life innovation field are also relevant to such social issues as the need to enhance healthcare and extend healthy life expectancy and to satisfy rising demand for food. For biomedical devices used for handling cells and DNA, sophisticated microfabrication technology is required. ULVAC can meet such needs through the application and further development of the thin-film formation technology it has cultivated in the semiconductor field. Vacuum technology can also be utilized for longer life and volume reduction of freeze-dried food, powder vaccines, drugs, etc. by vacuum freeze drying, evolution of regenerative medicine supported by cryogenic technology, enhancement of the efficiency of farming by smart agriculture, and promotion of remote medicine.

Commitment of Top Management

By developing advanced technologies and deploying its broad technical coverage, ULVAC will be able to offer multi-faceted support for the development of a sustainable society as it aims to be an enterprise indispensable to society.

Review of operations for fiscal 2018 and future prospects

● Sales and profit declined due to the postponements of capital expenditures

During fiscal 2018, market conditions, which had been favorable until the previous fiscal year, became subdued, and the ULVAC Group failed to achieve the performance initially planned.

Looking back on business conditions for fiscal 2018, orders received and net sales of FPD and PV production equipment declined year on year despite the contribution of orders received, especially from China, for LCD production equipment for large-screen TVs and OLED production equipment for smartphones. Orders received and net sales of semiconductor and electronic device production equipment both declined year on year due to the impact of the postponement of capital expenditures by semiconductor memory manufacturers, despite of the robust performance from items such as production equipment for high-performance devices for mobile devices and power semiconductors. Components performed well, with growth in orders received and net sales because of strong demand for cryopumps for mounting on OLED production equipment, as well as for vacuum pumps and measuring equipment for the FPD, semiconductor, and electronic device industries and for the automotive-related industry. However, orders received for general industrial equipment decreased partly because of the postponement of investment in manufacturing of high-performance magnets in China, and net sales remained at the same level as in the previous fiscal year, centering on vacuum heat treatment furnaces for production of automotive components and leak testers. Orders received and net sales of materials declined year on year, under the impact of factors such as reduced equipment operation in South Korea, despite recording of orders received for and sales of sputtering target materials for LCDs and other items.

The operating profit margin decreased to 10.8% from 14.2% in the previous fiscal year, and all profit categories declined, as an increase in selling, general and administrative expenses compounded the decrease in net sales.

As a result, for fiscal 2018, on a consolidated basis, orders received decreased 10.1% year on year to ¥218.5 billion, net sales decreased 11.5% to ¥220.7 billion, operating profit decreased 32.6% to ¥23.8 billion, ordinary profit decreased 30.7% to ¥25.6 billion, and net income decreased 48.0% to ¥18.7 billion.



● Accelerating the growth strategy in view of mid-to long-term market prospects, despite expectations that quantitative targets for fiscal 2019 will not to be achieved

At present, we face a business environment where capital expenditures are temporarily weaker due to delays in the resumption of investments by semiconductor memory manufacturers, and factors such as a hiatus in business negotiations regarding capital expenditures for LCD production equipment for large-screen TVs. In the semiconductor memory market in particular, active investment by memory manufacturers in 2017 and 2018 has led to continuing oversupply and price declines, and a full-scale resumption of capital expenditures is expected from 2020 or later, as the market continues to be affected by high-tech trade friction between the United States and China.

In this environment, in fiscal 2019, the current decline in orders received and net sales of FPD and PV production equipment is forecast to continue, as we expect to experience a lull in orders received for LCD production equipment for large-screen TVs, and it appears likely that our customers for OLED production equipment investment plans for smartphones will be from fiscal 2020. On the other hand, an upturn is expected in orders received and net sales of semiconductor and electronic device production equipment, with growth expected in new non-volatile memory (PCRAM), logic, communications devices, sensors and power devices, as well as the resumption of investment in semiconductor memory from the second half of the fiscal year.

Based on these predictions, for fiscal 2019, on a consolidated basis, we forecast orders received of ¥206.0 billion (-5.7% year on year), net sales of ¥205.0 billion (-7.1%), operating profit of ¥22.5 billion (-5.6%), ordinary profit of ¥23.5 billion (-8.1%), and net income of ¥15.5

billion (-17.0%). We are actively making R&D investments in future growth fields such as semiconductor memory and logic, MEMS and sensors, power devices, and OLED displays. We plan to invest ¥9.8 billion in capital expenditures for R&D (+¥3.2 billion year on year) and ¥9.6 billion in R&D expenses (+¥0.4 billion). Based on our current three-year mid-term management plan (covering the period from fiscal 2017 to 2019), we have set earnings targets of “net sales of ¥265 billion” and “operating profit of ¥38 billion,” but as mentioned previously, our earnings are forecast to fall short of these targets. However, the future targets that we have set for fiscal 2022 remain unchanged. We aim to achieve “net sales of ¥300 billion” and “operating profit margin of 16%” on a consolidated basis under our growth strategy, based on the mid- to long-term market prospects.

Capital policy

Regarding the capital policy, we take into account the balance among such factors as financial soundness, the capital structure, capacity for growth investment with a view to the future, and distribution of profit to shareholders.

ULVAC recognizes the sharing of profits with the shareholders as one of its most important policies. On the other hand, in an industry that undergoes significant changes in capital expenditure trends and technical innovations, ULVAC recognizes that, for further increasing its corporate value, it is necessary to enhance its internal reserves for further investments in R&D and strengthening its financial base. Therefore, the basic policy for distribution of profits to shareholders takes into account such factors as its financial base, consolidated performance for each fiscal year, and payout ratio.

To achieve sustainable growth and enhancement of corporate value

● To prevail in global competition

ULVAC's core competences are vacuum technology and its peripheral technologies. Synergy among our diverse business fields—encompassing equipment, materials, deposition processing, analysis, and services; broad technical coverage; the product lineup; and the establishment of supply chains in growth regions—is the source of our strength. Going forward, we will strengthen global strategic marketing functions and expand business partnerships with diverse companies and institutions to respond to new markets and technologies. We will also work to reestablish systems and strengthen initiatives to realize continuous development of innovative technologies and products. Through these endeavors, we will address market needs that are growing and evolving as technological innovation advances worldwide.

In terms of marketing, we are closely watching the U.S. market since many advanced technologies and products originate in the U.S. While vigorously gathering information, we are working to win projects that will lead to glob-

al collaboration covering every phase from R&D to mass production.

Meanwhile, in Taiwan and South Korea, which are driving forces of the world's semiconductor market, we have established R&D bases near our customers. Rooted in local markets while collaborating with development teams in Japan, ULVAC is pursuing development based on close relationships with customers.

In China, the trend is toward higher-value-added manufacturing and amid moves to facilitate high-tech investment. ULVAC is responding by enriching its R&D systems in China.

ULVAC, Inc. implemented an organizational restructuring as of July 1, 2019. We are working to advance the integration of our six business divisions, namely, Semiconductor Equipment, FPD-PV, Advanced Electronics Equipment, Industrial Equipment, Components, and Materials, as well as our group companies engaged in related operations. We have also established the Innovation Center of Excellence, which supports each business by reviewing operations and systems from the perspective of enhancing management efficiency, the New Business Development Center, which effectively utilizes the Group's combined management resources to create new business value, the Corporate Sales & Marketing Center, which controls the marketing function and sales management function and strengthens the global marketing structure, and the Manufacturing Center of Excellence, which enhances manufacturing capabilities, productivity, and collaboration with overseas production bases. Under this new organizational structure, we will strive to further enhance the efficiency of group management and transform ourselves company-wide, to prevail in global competition.

● Corporate growth utilizing external perspectives

The emergence of the smart society is creating new growth opportunities that ULVAC can benefit from by offering new value. On the other hand, competition is intensifying. For ULVAC, sustainable growth in these circumstances will require a tenacious and passionate approach to business, with management sharing with all employees its determination to achieve transformation.

As well as articulating these aspirations and inculcating them in all employees, we are striving to vitalize the Board of Directors and enhance its effectiveness by taking to heart the illuminating opinions of our external directors who bring a wealth of experience to the Board's deliberations from the perspective of strengthening corporate governance.

By pursuing these initiatives to achieve sustainable growth, we are resolved to prevail as an enterprise that earns the confidence of stakeholders. You can count on ULVAC to advance boldly into the future and I request our stakeholders to grant us their continued support over the long term.

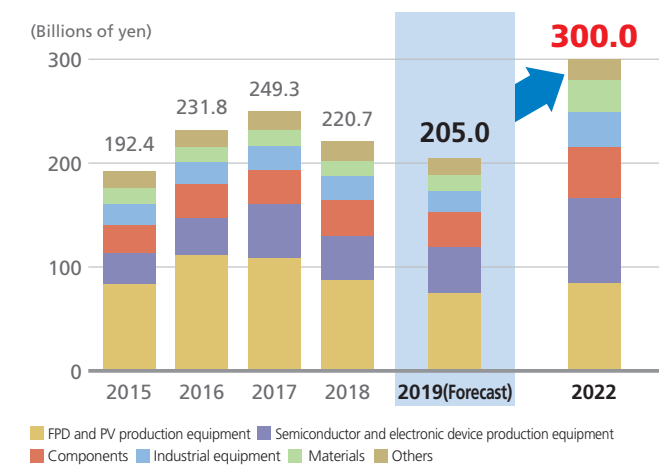
Revised Mid-term Management Plan and Growth Strategies

Whereas ULVAC's targets under the current three-year mid-term management plan (covering the period from fiscal 2017 to fiscal 2019) were net sales of ¥265 billion and operating profit of ¥38 billion on a consolidated basis for the fiscal year ending June 30, 2020 (fiscal 2019), the final year of the plan, our earnings are forecast to fall short of these targets owing to delays in the resumption of electronics-related capital expenditures. However, the future targets set for the fiscal year ending June 30, 2023 (fiscal 2022) remain unchanged. ULVAC aims to achieve "net sales of ¥300 billion" and "operating profit margin of 16%" on a consolidated basis under its growth strategy, based on the mid- to long-term market prospects.

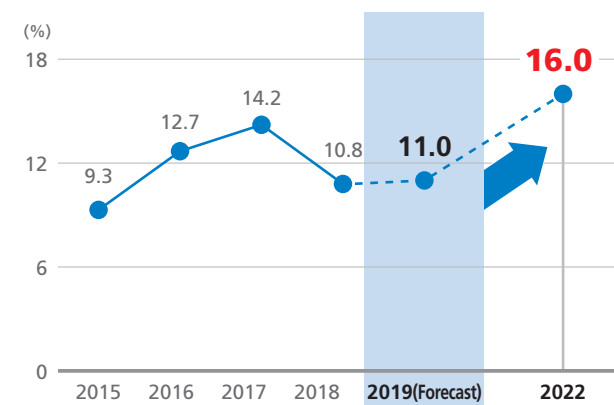
Vision

- Highly profitable corporate management by comprehensively utilizing vacuum technology, maximizing synergy among equipment, materials, deposition processing, analysis & services, and cooperating with global business partners
- Human resources development for the next leap forward and a corporate culture that relishes challenges

Targets for FY2022 Net sales: ¥300billion



Operating profit margin: 16.0%



Strengthening of management base

Current specific measures

Human resources development	More powerful business promotion capabilities	<ul style="list-style-type: none"> Promotion of global human resources and training of next-generation executive candidates Improvements for fairer assessment to bring out the full potential of employees' capabilities
Deepening relationships and coordination within the Group	More powerful manufacturing capabilities	<ul style="list-style-type: none"> Establishment of systems for efficient utilization of the Group's management resources Reinforcement of the global supply chain system and strengthening of cost competitiveness by enhancing manufacturing capabilities
Information platform development	Improve business judgments	<ul style="list-style-type: none"> Strengthening of global strategic marketing functions to respond to new markets and new technologies Facilitation of greater and vigorous use of IT in business processes
Financial strength improvement	Improve capabilities for growth investment	<ul style="list-style-type: none"> Improvement of the equity ratio to 53% (at the end of fiscal 2018) by a ¥3.5 billion increase in net assets and a ¥15.1 billion decrease in total assets The amount of R&D investment is scheduled to be unchanged from the amount planned in the mid-term management plan

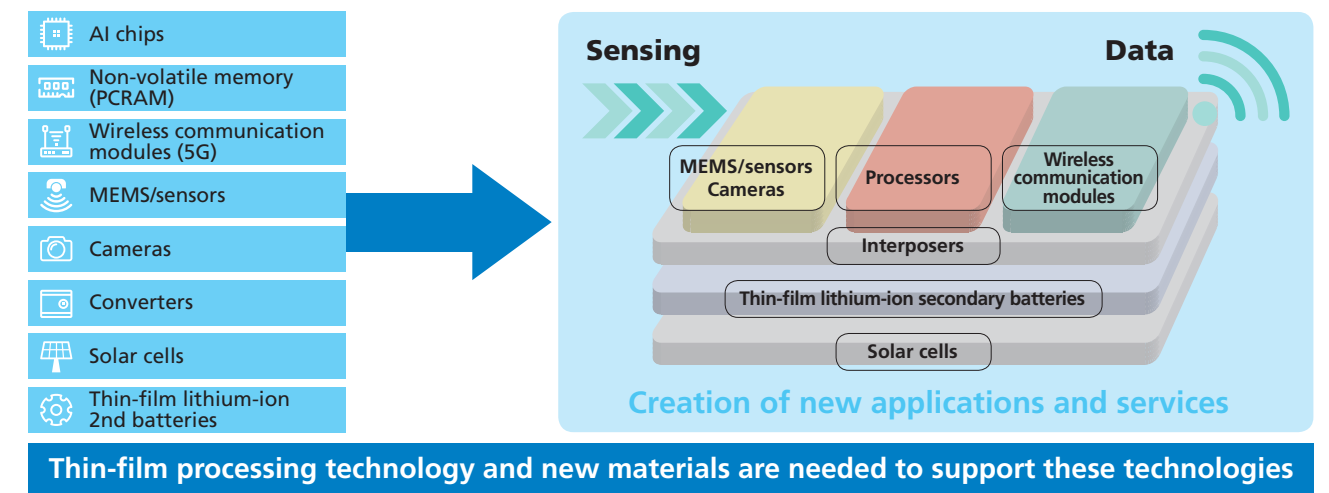
Growth strategies

Promotion of business growth	
Expand business in growth markets	The smart society in which industries become increasingly electronics-oriented is a growth market for ULVAC.
Provide solutions capitalizing on technical advantage	Create new application fields through integration of core technologies for semiconductors, electronic devices, energy, packaging, etc. to address new market needs
Further active strategic collaboration	Acquire top position in both technology development and business development
Further develop business in growth regions	Utilize local production systems, supply chains, and networks built in the high-growth regional markets
Promote initiatives to realize new value	Attract new customers and strengthen marketing by using ULVAC's wide technical coverage

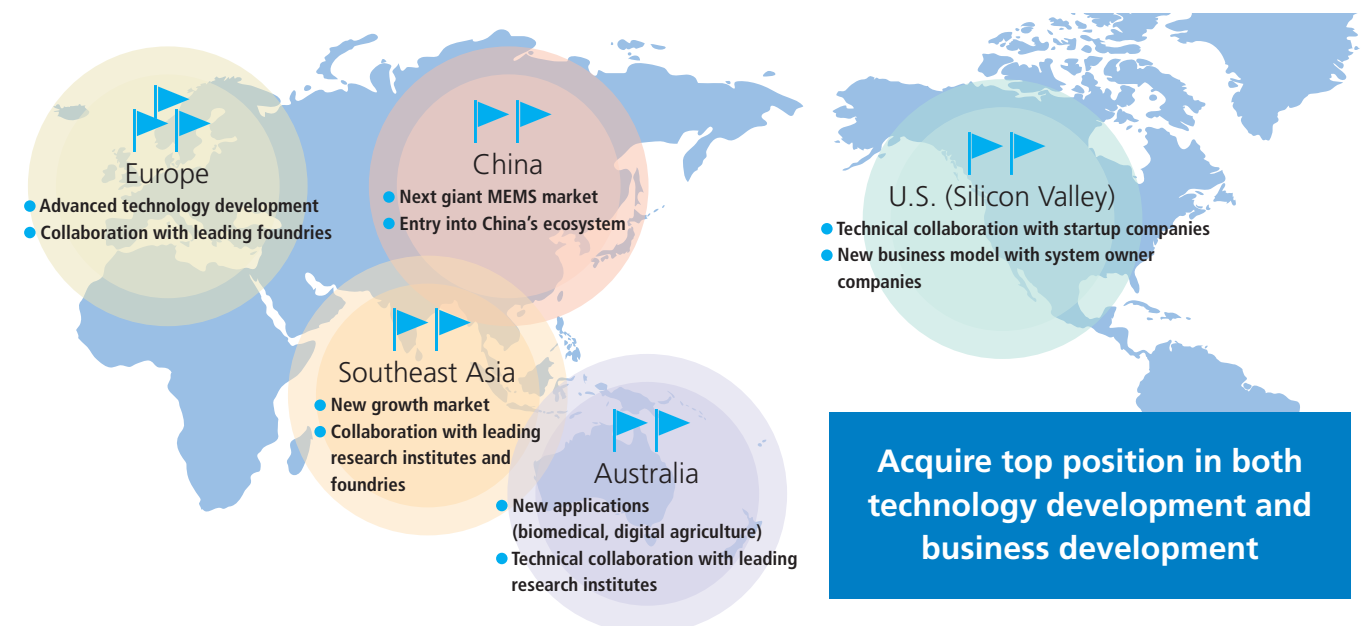
Technology enabling the smart society = Growth market

Growth industries						
Key devices						
Key technology	Vacuum deposition technology					

ULVAC's technical advantages (examples); Integration of core technologies (semiconductors, electronic devices, energy, packaging)



Example of strategic collaborations (PiezoMEMS)



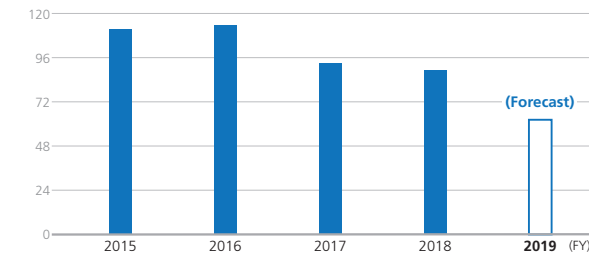
Creation of growth drivers and profit-oriented cost structure reform to achieve further growth



We have been working to create growth drivers and achieve profit-oriented cost structure reform since the previous year. By further promoting these initiatives, we will not only provide customers with superior products and technologies but also promote development and sales of new products for growth markets, thus expanding ULVAC's share of the market for FPD, PV and high functional films.

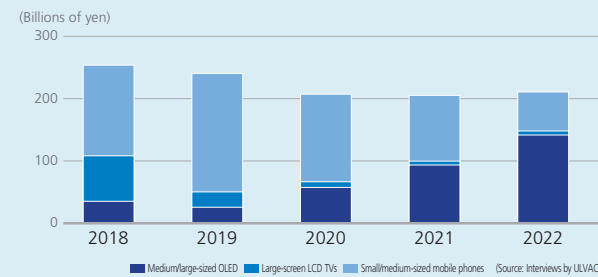
Yasuo Shimizu
General Manager of FPD · PV Division

Orders received (Billions of yen)



Maintaining high market share by receiving orders for LCD production equipment for large-screen TVs and OLED production equipment for smartphones in China
Regarding LCDs for large-screen TVs, device manufacturers rapidly expanded capital expenditures for G10.5 that is capable of producing multiple 65- or 75-inch panels from one substrate. Capitalizing on abundant experience in supporting the trend toward large screens in the TV market, ULVAC introduced sputtering equipment offering superior productivity ahead of competitors and engaged in continuous improvement programs, maintaining an overwhelming share of this market segment. Furthermore, regarding equipment for OLED, a key measure of the growth strategy, we won repeated orders for evaporation equipment from smartphone panel manufacturers in China. Regarding vacuum equipment for printed OLED TVs, which are promising next-generation large-screen TVs, the launch of the business proceeded well and we took an important step in the expanding OLED market. With regard to high-capacity lithium-ion batteries, whose market is expected to enjoy strong growth along with the FPD market, we have advanced from the basic development phase for metal lithium evaporation technology to the phase for examination of pre-production technology with a leading manufacturer, and expectations rose regarding the market launch of ULVAC's roll coater for lithium-ion batteries.

FPD capital expenditure trends



New products supporting the smart society
In the FPD market, owing to the trend toward lower prices because panel supply capacity greatly exceeded demand, investment in LCD production equipment is expected to be soft in the near term. However, in view of the demand for flexible OLED

with a high degree of design flexibility as the interface of choice in the smart society driven by 5G and IoT, companies are competing in the development of such displays. Compared with LCD, flexible OLED is characterized by light emittance, wide viewing angle, and high contrast. Their application is expected to grow in various fields, such as for automotive displays indispensable in the era of "connected cars."

In line with the strengthening of environmental regulations across the world, electrification of cars will be facilitated and various preferential measures are expected to spur expansion of the lithium-ion battery market. ULVAC is aiming for the No. 1 market share by developing new models of sputtering equipment for OLED, organic evaporation equipment for OLED, and roll coaters for lithium-ion batteries. Moreover, although robust market growth of the production equipment for solar cells, a promising source of renewable energy, is expected to continue centering on China, price competition is fierce. Therefore, we will switch to production in China to enhance competitiveness.

Recognized Business Opportunities

1. Expansion of the medium/large-sized OLED market
2. Expansion of new display applications and of the lithium-ion battery market in the smart society
3. Robust growth of the solar cell production equipment market of China

Conceivable Risks

1. Delay in development of technically challenging technology for new applications and markets
2. Slowdown of the Chinese market
3. Intensifying competition and market entry of Chinese manufacturers of low-priced equipment

Measures for Reducing Risks and Maximizing Opportunities

1. Collaborate with leading manufacturers in development for mass production for new applications and markets
2. Develop highly competitive new products
3. Thoroughly eliminate waste in manufacturing processes and reestablish the supply chain to generate profit
4. Promote overseas production to reduce cost

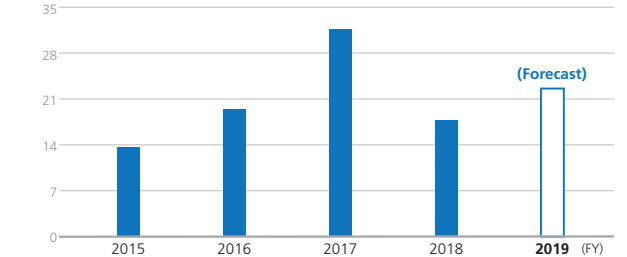
Continued growth through creation of new products and cultivation of customers



Our objective is to grow the semiconductor production equipment operation as one of ULVAC's primary pillars of revenue, and advance global business development by continuing to capitalize on investment trends in the semiconductor market. To accomplish this, we will endeavor to seize business opportunities based on our growth strategy emphasizing responsiveness to the needs and trust of customers.

Tomoyasu Kondo
Executive Officer, General Manager of Semiconductor Equipment Division

Orders received (Billions of yen)



Preparation is underway and aligned with the business strategy despite temporary postponement of investment by memory manufacturers
Whereas memory manufacturers made vigorous investments in 2017 and 2018, many of them are temporarily postponing investment due to oversupply and price declines of memory products since the end of 2018. However, investment is expected to resume moderately from 2020 onward and we are steadily preparing for that.

In the logic/foundry market several major customers recently adopted our sputtering equipment for the process step that requires extreme ultraviolet lithography (EUV) and we were able to establish a foundation for future growth.

Regarding the sputtering process of PCRAM non-volatile memory, which has good prospects for future market growth, our equipment is being adopted not only by existing customers for their new lines but also for development and pilot lines by all other customers who are planning mass production.

To build on these gratifying accomplishments and progress, we are promoting initiatives to further reinforce the foundation for growth by strengthening sales & marketing, production, and customer support systems.

Increase market share in the semiconductor production equipment market that is continuing to grow in the smart society

The requirements of semiconductor devices and related components are evolving to support the emergence of IoT's big data demand and servers for edge computing. Growth opportunities are increasing not only for traditional DRAM and NAND but also for storage-class memory consisting of non-volatile memory. Miniaturization is fueling innovation in processor technology.

Amid these technical innovations in semiconductors, in addition to NAND and DRAM memory, ULVAC positions PCRAM and the logic/foundry business as the axles of growth.

We will focus on growth engine keywords: "Miniaturization process requirements," "Nonvolatile

memory deposition," "Wafer level package deposition," and "Logic/foundry miniaturization mass production support." Based on a business growth strategy unique to ULVAC, we will pursue business development different from other major competing equipment manufacturers.

As for mid-term strategic products, we are promoting the development of leading-edge technologies that leverage our strengths in the native oxide removing system and sputtering system.

Recognized Business Opportunities

1. Full-scale mass production of leading-edge 7-5nm logic devices
2. New processes for leading-edge DRAM and 3D-NAND products and change in materials
3. Expansion of wafer level package deposition process
4. Mass production of PCRAM

Conceivable Risks

1. Intensifying of competition
2. Slowing growth of the leading-edge device market
3. Delay in expansion of the PCRAM market

Measures for Reducing Risks and Maximizing Opportunities

1. Develop products by embracing customer requirements through meticulous marketing and achieve differentiation
2. Strengthen support for development and mass production launch by new customers
3. Strengthen support for development and mass production of leading edge devices
4. Provide thorough support to PCRAM customers and maintain 100% market share

Electronic Device Production Equipment

Advent of the smart society—Further expand global business development of equipment for electronic devices

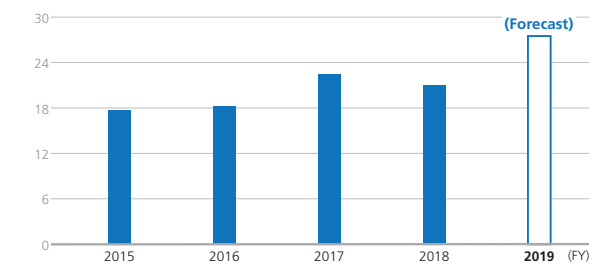


In addition to various devices indispensable for the realization of IoT and the smart society, such as communication devices, sensing devices, optical devices, and power devices, the development of compact miniaturized packaging technology for such devices is bound to accelerate. We aim to further expand this business in the electronic device market.

Tetsuya Shimada

Executive Officer, General Manager of Advanced Electronics Equipment Division

Orders received (Billions of yen)



Ongoing establishment of systems to seize opportunities without fail in a buoyant market

Orders received in fiscal 2018 were lower than the result for the previous fiscal year, reflecting the temporary stagnation of the market. In fiscal 2019, amid robust growth in capital expenditures eyeing the smart society, we will work to win more orders by further strengthening and fostering sales engineers.

In the electronics device-related business, delivery lead times are very short for manufacture and shipment of equipment. We are establishing a front-loading system from the order-forecasting phase onward.

How to meet customers' delivery requirements is an issue. We will continue to establish a system for seizing opportunities without fail through flexible responses, such as by reviewing the procurement method.

Priority fields

Priority fields	Final products
Communication devices	<ul style="list-style-type: none"> Smartphones Smart devices
Optical devices	<ul style="list-style-type: none"> 3D sensors In-vehicle displays
Electronic devices (MEMS)	<ul style="list-style-type: none"> 5G-ready equipment
Power devices	<ul style="list-style-type: none"> Devices for EV application Industrial robots Energy-saving equipment
Electronic packaging	<ul style="list-style-type: none"> Smartphones High-speed data servers IoT devices

Expand equipment sales worldwide to become a truly global enterprise

With the advent of the smart society, needs for electronic devices that support IoT will further increase. Development of these devices is progressing concurrently around the world. The ongoing evolution of production equipment for them is predicated on the development of innovative new technologies and improvement of existing technologies.

In Europe and North America, where many new devices are developed, we are cultivating collaborative relationships with customers through collaboration among Group companies. To play the role of a trailblazer, we aim to vigorously cultivate new customers.

In Asia where many of our customers have production bases, we will vigorously implement activities to expand sales while strengthening innovative proposal capabilities in addition to building on our delivery track record so far. Through these initiatives, we aim to expand business globally.

Recognized Business Opportunities

1. Realization of the smart society by IoT and 5G
2. Technological innovation by leading companies in Europe and North America
3. Manufacturing and mass production of electronic devices in Asia

Conceivable Risks

1. Slowdown of the Japanese electronic device production equipment market
2. Intensifying competition due to customers' shift of production locations
3. Longer equipment production lead times because parts production and supply cannot keep up with the short delivery lead time

Measures for Reducing Risks and Maximizing Opportunities

1. Cultivate a range of applications
2. Establish relationships with leading European and North American companies and grasp market trends
3. Continue development of cutting-edge technologies eyeing the smart society

Industrial Equipment

Contributing to industries and society with vacuum technology involving thermal application

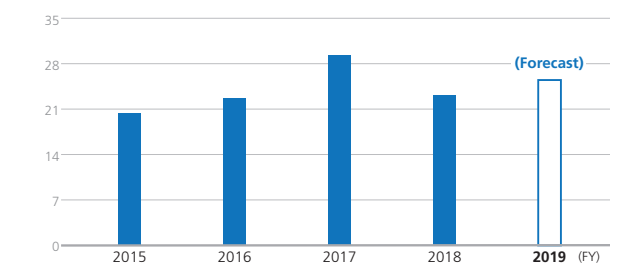


The Industrial Equipment Division offers vacuum technology solutions involving thermal application. We are developing the equipment customers require in order to create higher-value-added products of superior quality. Our solutions contribute to the full spectrum of industries and cover such processes as vacuum heat treatment and brazing of internal combustion engine parts, vacuum melting of magnetic materials, vacuum freeze drying of pharmaceuticals, high-purity refining of vitamin E, eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) using vacuum distillation, and special vacuum drying of food without spoiling the taste.

Hisanao Kusaba

General Manager of Industrial Equipment Division

Orders received (Billions of yen)



Offering solutions for higher-value-added products of superior quality based on a sure grasp of customer needs across the full spectrum of industries

Industrial Equipment constitutes the infrastructure for high-tech industry. ULVAC supports customers' innovation by combining vacuum technology with fundamental technologies, such as heat treatment of parts to increase hardness and luster, melting for development and production of high-performance materials, brazing for bonding different kinds of materials, and drying and distillation to increase purity and preservability.

In order to respond to customers' global business development, we enhanced activities targeting customers in the Chinese market in fiscal 2018. Going forward, we will strengthen approaches to the Southeast Asian market and the Indian market.

Contributing to the full spectrum of industries

The industrial equipment business is contributing to the full spectrum of industries.

Heat exchangers Radiators, EGR coolers, electronic parts cooling, etc. → Vacuum brazing furnaces, vacuum leak testing	Rare-earth magnets for electric motors HVs, EVs, wind turbines, home appliances → Vacuum sintering furnaces and melting furnaces
Resin fuel tanks → Vacuum leak testing	
Pharmaceuticals and food Generic drug manufacturing Extraction of high-purity substances → Vacuum freeze-drying equipment, vacuum distillation equipment	

Cultivating growth markets and pioneering new markets

Regarding systems employed in the manufacture of the rare-earth magnets widely used in wind turbines, electric vehicles, and mobile phones, we will meet customer

needs by optimizing hydrogen furnaces, pulverizers, and SC melting furnaces. China is the principal market. We will provide high-quality equipment manufactured in China at reasonable prices.

In the automotive components field, we will meet demand for heat exchangers for exhaust gas recirculation (EGR) coolers used in internal combustion engines and heat exchangers for electronic parts cooling in EVs by offering vacuum brazing furnaces, which are ULVAC's forte.

In the pharmaceuticals field, investment in generic drugs and in high potency active pharmaceutical ingredients, such as for anticancer drugs, is booming. This is creating opportunities for ULVAC to display its strengths in vacuum freeze-drying equipment.

New applications of ULVAC's unique Micro Powder Dry technology for producing porous powder include blood plasma preparation, ceramic capacitors, and new materials. We will meet customers' expectations by realizing mass-production technology and sterilization technology at an early stage.

In the food field, distinctive drying technologies, such as superheated steam drying and puffed freeze drying, have made it possible to preserve and commercialize foodstuffs that were previously disposed of as waste. We aim to offer solutions to alleviate food shortages and food losses worldwide.

Recognized Business Opportunities

1. Expansion of demand for magnets, automotive parts, and pharmaceutical formulation
2. Rising awareness about food safety and security and reduction of food waste and food losses

Conceivable Risks

1. Progress of commoditization and intensifying price competition
2. Customer retention by first-movers

Measures for Reducing Risks and Maximizing Opportunities

1. Enhance production efficiency through integration of production bases
2. Cultivate new application fields for porous powder production
3. Develop competitive new products
4. Expand the domain for creation of added value by using the vacuum process in the food products field

Components

Become a driving force of ULVAC's global business with an extensive product lineup

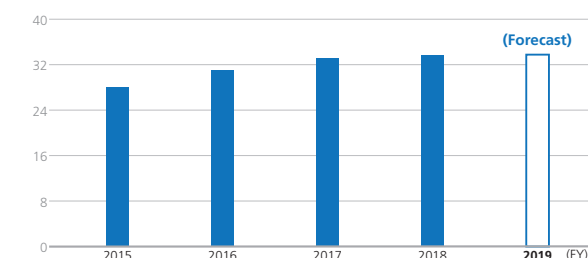


Vacuum technology is essential for diverse industries. As a comprehensive manufacturer of vacuum components supporting industrial infrastructure, we offer an extensive lineup of vacuum components. Bringing our comprehensive capabilities into full play, we will develop business from both aspects of regions and industrial fields in an aim to become a driving force of ULVAC's global business.

Ju Hoon Shin

General Manager of Components Division

Orders received (Billions of yen)



Achieve further growth through Group synergy

In fiscal 2018, despite a slowdown of investment by FPD and semiconductor manufacturers following several years of buoyant investment, OLED-related investment supported ULVAC's business results.

The vacuum pump business is conducted by ULVAC CRYOGENICS, which is a manufacturer specializing in cryopumps and cryocoolers, and ULVAC KIKO, which handles compact vacuum pumps, as well as ULVAC, Inc. By enhancing the efficiency of production and sales through integrated management of the Group, we are establishing a system that will enable us to aim for further growth.

Regarding product development, we released low-noise, compact high-vacuum pumping equipment targeting R&D applications. We will step up development of products offering higher productivity and environmental friendliness.

Components business

Components essential for vacuum equipment.

ULVAC supplies vacuum pumps, vacuum gauges, vacuum valves, vacuum leak testers, gas analyzers, power generators for deposition processes, etc. to vacuum equipment manufacturers, machinery manufacturers, etc.

Application example

Applications for OLED production equipment

- Dry pumps
- Cryopumps
- Film deposition controllers
- Vacuum valves

Vacuum measurement

- Helium leak detectors
- Vacuum gauges
- Gas analyzers

Advanced research, medical, etc.

- 4K cryocoolers for cooling superconductive magnets
- Liquid nitrogen generators

Reaching out from Japan to China, Europe and North America in pursuit of global business development

Despite uncertain prospects in the near term, it is evident that manufacturers will make major investments with a view to the big data era and the smart society over the medium to long term.

The vacuum components business is becoming increasingly borderless. Tackling this market inevitably involves competing against powerful European and American manufacturers. In order to prevail, we are strengthening our global marketing structure, enhancing efficiency of production systems, and establishing systems for developing products attuned to market needs.

By offering the optimum products for various fields, including analysis, medicine, and food, we are cultivating vacuum applications and promoting expansion of the cryocooler business so as to contribute to the enhancement of the comprehensive value of the ULVAC brand.

Recognized Business Opportunities

1. Large-scale investment in view of big data and the smart society
2. Expansion of market in emerging countries

Conceivable Risks

1. Stronger competitors expanding business through M&A
2. Intensifying price competition, market entry by low-cost manufacturers

Measures for Reducing Risks and Maximizing Opportunities

1. Expand business fields by strengthening alliances
2. Enhance efficiency of production and sales to reduce cost

Materials

Be a pioneer in offering excellent materials to the market

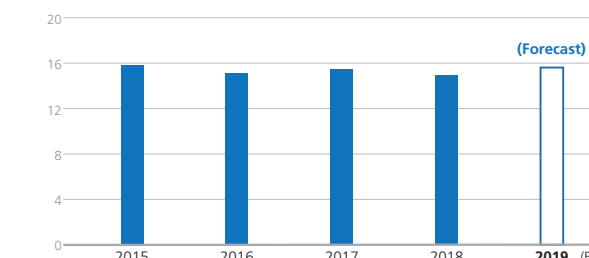


Sputtering equipment, ULVAC's mainstay product, requires target materials as a source for deposition substances. We are endeavoring to develop products such as target materials endowed with functions required in the emerging smart society, power-generation markets, and corrosion-resistant, superconductive high-performance materials, in cooperation with the equipment divisions and research institutes. Moreover, we aim to be first-to-market so that our customers can be the first to enjoy their benefits.

Seigou Kinugawa

Executive Officer, General Manager of Materials Division

Orders received (Billions of yen)



Steady growth in the markets that are expected to expand in the future

In fiscal 2018, sales grew steadily in the markets that are expected to expand in the future, namely, target materials for cutting-edge semiconductors, Cu and IGZO target materials for FPD, and high-performance materials. On the other hand, sales of materials mainly for OLED for smartphones were sluggish.

Materials business

The materials business centers on target materials used in sputtering, which is the mainstream method of vacuum deposition, and also includes development and manufacturing of functional materials.

Sputtering equipment for large-screen TV manufacturing

Sputtering target

Sputtering equipment for semiconductor manufacturing

Sputtering target

Acceleration cavity for high-performance accelerators (use of high-purity Nb materials)

Such a great opportunity comes only once in decades
With IoT, 5G communication, and AI to the fore, technological innovation geared to the needs of the

emerging smart society is underway. One consequence of this trend is that new high-performance materials are coming into their own in the semiconductor, cutting-edge electronic device, and the display field. They are destined to eventually supersede traditional materials. With a view to facilitating the emergence of the smart society, we are developing new materials required in this expanding application field in cooperation with ULVAC's equipment divisions and research institutes and together with our customers.

Recognized Business Opportunities

1. Increases of sputtering thin-film processes due to increases in semiconductors and electronic devices in the smart society
2. Switching to new materials as device performance improves
3. Switching to new materials in line with the trend toward larger, higher-definition, and flexible display panels
4. Expansion of the superconductive material business

Conceivable Risks

1. Difficulty of securing stable supply of raw materials in view of increasing demand
2. Intensifying price competition

Measures for Reducing Risks and Maximizing Opportunities

1. Promote joint development with leading manufacturers and influential private or public institutions
2. Invest and manufacture in growing markets (regions and products)
3. Further promote recycling of materials
4. Promote alliances

Others

Semiconductor mask blanks market

We will respond effectively to increasing needs for miniaturization and higher definition in line with the expansion of the application field and the proliferation of types, reflecting the improved performance of smartphones, development of self-driving vehicles, and the ramp-up of demand related to IoT and artificial intelligence (AI).

Surface analyzer market

Whereas university and company laboratories were previously the principal users of surface analyzers, this equipment is increasingly used nowadays for routine purposes such as product inspection. Surface analyzers are being applied to more materials in more regions and markets throughout the world. ULVAC will continue offering surface analyzers with functions attuned to customer needs.

Corporate Governance

Basic corporate governance policy and structure

In accordance with its Basic Corporate Philosophy, "The ULVAC Group aims to contribute to the development of industries and science by comprehensively utilizing its vacuum and peripheral technologies through the mutual cooperation and collaboration of the Group companies," ULVAC, Inc. works to ensure thorough corporate governance in order to increase corporate value over the medium to long term. From this perspective, we respect the interests not only of shareholders, but also of business partners, local communities, employees, and other stakeholders that are related to our business activities. We also value competitive and efficient operation, while ensuring strict compliance with laws and corporate ethics.

ULVAC, Inc. has adopted a company with a board of corporate auditors as its management structure. Particularly important institutional structures include the Board of Directors, the Board of Executive Officers, the Board of Corporate Auditors, and the Committee for Appointment and Remuneration, etc.

Firstly, ULVAC, Inc. has a Board of Directors, which is a decision-making body for important management issues. The Board holds regular meetings once a month, as well as ad hoc meetings as necessary to ensure flexibility. The Board of Directors comprises nine members, of whom four are external directors. Three of the external directors are designated as independent external directors. By virtue of this structure, ULVAC, Inc. is not only able to make swift and efficient judgments concerning important management issues, but is also able to achieve fair, impartial, and highly transparent deliberation, as well as operational supervision.

Next, with the introduction of an executive officer system, executive officers exercise executive functions, having been granted a certain amount of responsibility and authority over their designated areas, through delegation by the Board of Directors. ULVAC, Inc. also has a Board of Executive Officers that comprises a total of 15 internal directors and executive officers. The Board of Executive Officers holds regular meetings once a month, as well as ad hoc meetings as neces-

sary. By virtue of this structure, we have achieved more flexible and swifter business operations that are appropriate for a rapidly changing business environment, based on a clear expression of the responsibilities and authority of each executive officer.

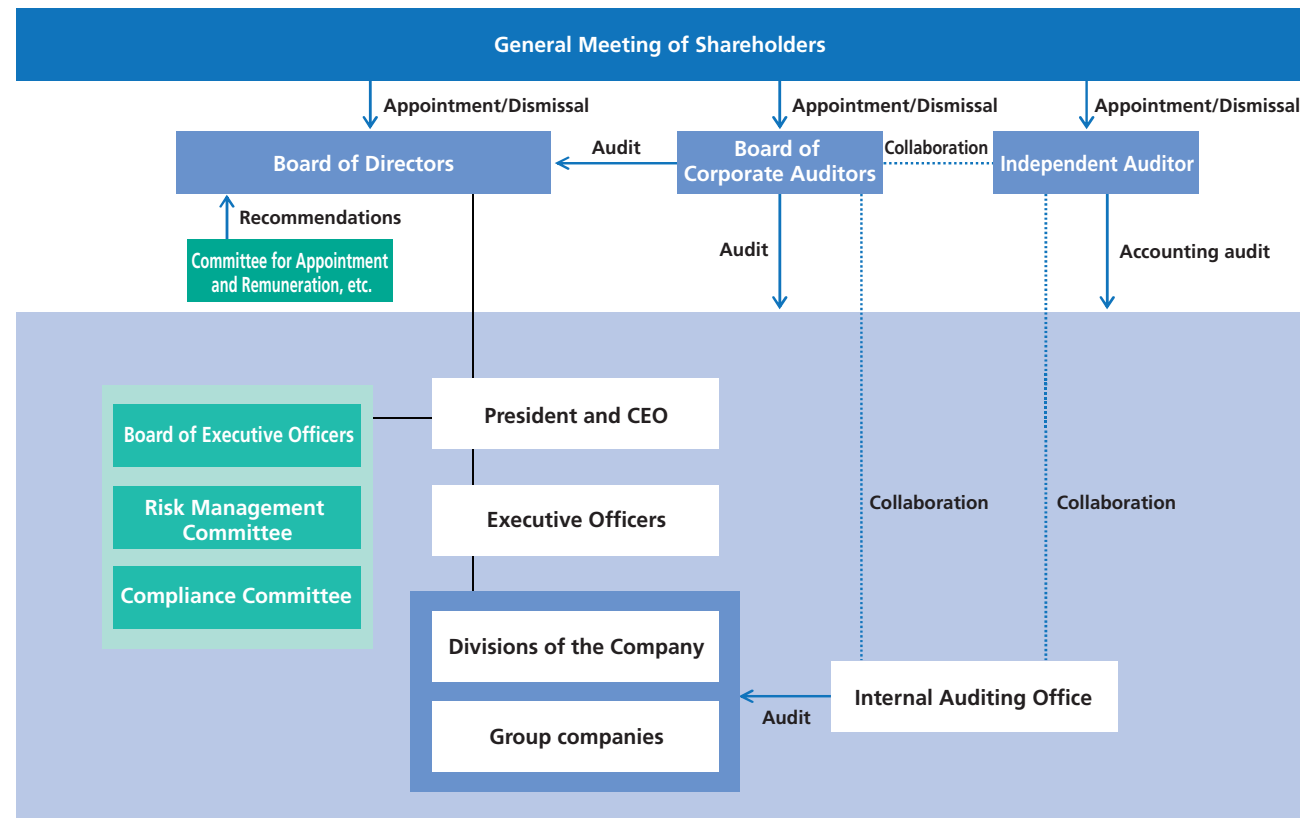
In addition, ULVAC, Inc. has a Board of Corporate Auditors, which performs auditing and supervision of management decision-making and business operations. The Board of Corporate Auditors comprises four members, of whom two are external auditors. Both of the external auditors are designated as independent external auditors. We ensure full auditing and supervisory functions through close links between auditors and the Internal Auditing Office and the independent auditor, whose independence is ensured, as well as through attendance and comments by auditors at important meetings, such as meetings of the Board of Directors and the Board of Executive Officers, and through regular meetings between the Internal Auditing Office and the President, etc. By virtue of this structure, we have achieved rigorous, fair, impartial, and transparent auditing and super-

visory functions, ensuring that each auditor obtains sufficient information.

Furthermore, we have a Committee for Appointment and Remuneration, etc. for instances that require objective determination of important matters, such as the appointment and remuneration of directors and executive officers. The Committee for Appointment and Remuneration, etc. comprises seven members, of whom five are independent external directors or independent external auditors. Of the remaining two members, one is an external director. By having these kinds of advisory bodies for the Board of Directors, we are able to achieve fair, impartial, and highly transparent deliberations with regard to especially important management decisions, and increase the effectiveness of the Board of Directors.

Members of the Board of Directors, the Board of Corporate Auditors, the Board of Executive Officers, the Committee for Appointment and Remuneration, etc. are indicated in the list below.

Corporate Governance Structure (As of September 30, 2019)



Title	Name	Board of Directors	Board of Corporate Auditors	Board of Executive Officers (Note)	Committee for Appointment and Remuneration, etc.
President and Chief Executive Officer	Setsuo Iwashita	●		●	●
Director and Executive Vice President	Mitsuru Motoyoshi	●		●	
Director and Senior Managing Executive Officer	Masasuke Matsudai	●		●	
Director and Managing Executive Officer	Dr. Choong Ryul Paik	●		●	
Director and Executive Officer	Sadao Aoki	●		●	
External Director	Akira Mihayashi	●			●
External Director	Norio Uchida	●			●
External Director	Dr. Kozo Ishida	●			●
External Director	Yoshimi Nakajima	●			●
Auditor	Makoto Ito	●	●	●	
Auditor	Mitsuru Yahagi	●	●	●	
External Auditor	Senshu Asada	●	●		●
External Auditor	Isao Utsunomiya	●	●		●

● Chairman ● Observer

Note: The Board of Executive Officers also comprises executive officers in addition to the above.

Corporate Governance

Directors' remuneration

In order to ensure management transparency, fairness, and appropriateness of remuneration, etc., ULVAC, Inc. has the Committee for Appointment and Remuneration, etc. consisting of external directors, external auditors, and the chairman of the Board of Directors. The Committee for Appointment and Remuneration, etc. analyzes and compares levels of remuneration of other companies, and then provides advice about remuneration, etc. suitable for ULVAC, Inc. Following the recommendations by the Committee for Appointment and Remuneration, etc., amounts of remuneration, etc. of directors are determined by a resolution of the Board of Directors within the total amount of directors' remuneration approved by the resolution* of the general meeting of shareholders. External directors' remuneration consists only of basic compensation, which is fixed compensation.

A performance-linked compensation plan is adopted for part of internal directors' remuneration, etc. Performance-linked compensation consists of annual performance-linked compensation based on business results for the corresponding fiscal year and stock-based compensation, etc. based on a performance-linked stock-based compensation plan called Board Benefit Trust (BBT), which corresponds to the degree of achievement of annual performance targets. Evaluation of individual directors, which will be reflected in the annual performance-linked compensation, is performed and the result is determined after reporting to the Committee for Appointment and Remuneration, etc.

Under the BBT system, the Company's shares are purchased through a trust using the money contributed by the Company and are allocated to the directors in accordance with the Rules for Granting Shares to Officers set out by the Company. In principle, directors are granted the Company's shares and money equivalent to the fair value of the Company's shares at the date of retirement through the trust.

As annual performance-linked compensation is based on business results for each fiscal year, the Company does not have a policy as to its specific ratio to the basic compensation, which is fixed compensation.

*The maximum amount of aggregate remuneration for directors was set at ¥500 million per annum (including a maximum of ¥60 million for external directors) by resolution at the 114th Ordinary General Meeting of Shareholders held on September 27, 2018. The maximum amount of aggregate remuneration for auditors was set at ¥100 million per annum by resolution at the 102nd Ordinary General Meeting of Shareholders held on September 28, 2006. Moreover, Board Benefit Trust (BBT) was introduced, separately from the above-mentioned maximum amount of aggregate remuneration for directors (excluding external directors), by resolution at the 112th Ordinary General Meeting of Shareholders held on September 29, 2016.

Evaluation of effectiveness of the Board of Directors

For the purpose of enhancing functions of the Board of Directors and thus enhancing corporate value, at ULVAC, Inc. an annual self-assessment survey of directors and auditors is conducted concerning the effectiveness of the Board of Directors.

Anonymity is secured as directors and auditors provide their responses to the survey directly to an external institution. Based on the external institution's report on the survey results, the Board of Directors of ULVAC, Inc. conducts analysis and evaluation.

As a result of analysis and evaluation about the effectiveness of the Company's Board of Directors for fiscal 2018, it is judged that effectiveness of the Company's Board of Directors is secured. However, in view of proposals for further enhancement of the effectiveness of the Board of Directors that have been submitted by members of the Board of Directors, we will continue to strive to enhance the effectiveness of the Board of Directors.

Policy on selection of external directors and auditors

In order to enhance the effectiveness of the Board of Directors by realizing multifaceted discussion at meetings of the Board of Directors, balance among knowledge, experience, capabilities, etc., diversity, and appropriateness of the size are taken into consideration regarding the composition of the Board of Directors. Based on these perspectives, the Board of Directors carefully selects director candidates. Regarding attendance at the meetings of the Board of Directors, efforts are made to ensure an appropriate number from the viewpoint of ensuring swift decision-making.

Name of external director/auditor	Reasons for selection as an external director/auditor	Attendance and principal activities
Akira Mihayashi	To receive valuable opinions based on his extensive experience and broad perspective as a corporate manager of other companies	Attended all 14 meetings of the Board of Directors held during the fiscal year and provided opinions for deliberation of the agenda as necessary, based on his extensive experience and advanced insight as a corporate manager of other companies.
Norio Uchida	To receive valuable opinions based on his extensive experience and broad perspective as a corporate manager of other companies in Japan and overseas	Attended all 14 meetings of the Board of Directors held during the fiscal year and provided opinions for deliberation of the agenda as necessary, based on his extensive experience and advanced insight in Japan and overseas as a corporate manager of other companies.
Dr. Kozo Ishida	To receive valuable opinions based on his extensive experience, technical expertise and broad perspective as a corporate manager of other companies	Attended all 14 meetings of the Board of Directors held during the fiscal year and provided opinions for deliberation of the agenda as necessary, based on his extensive experience and technical expertise as a corporate manager of other companies.
Yoshimi Nakajima	To receive valuable opinions based on her extensive experience and broad perspective as a corporate manager of other companies both in Japan and overseas	Attended all 11 meetings of the Board of Directors held after taking office on September 27, 2018 and provided opinions for deliberation of the agenda as necessary, based on her extensive experience and advanced insight as a corporate manager of other companies both in Japan and overseas.
Senshu Asada	To receive valuable opinions based on his experience and insight as an attorney	Attended all 14 meetings of the Board of Directors and all 19 meetings of the Board of Corporate Auditors held during the fiscal year and provided opinions for deliberation of the agenda as necessary, mainly from a specialist perspective as an attorney.
Isao Utsunomiya	To receive valuable opinions based on his experience and insight as a certified public tax accountant	Attended all 14 meetings of the Board of Directors and all 19 meetings of the Board of Corporate Auditors held during the fiscal year and provided opinions for deliberation of the agenda as necessary, mainly from a specialist perspective as a certified public tax accountant.

Policy on training of directors and auditors

ULVAC, Inc. provides its directors and auditors with opportunities for training deemed necessary in order for them to fulfill their roles and responsibilities.

Specifically, training for newly appointed external directors includes explanation of ULVAC's organizational structure, businesses, and the management plan and visits to ULVAC plants. Moreover, visits to principal subsidiaries and plants in Japan and overseas are regularly organized.

For newly appointed auditors, ULVAC, Inc. provides training opportunities on a par with those for newly appointed directors upon the request of auditors. After they take office as directors and auditors, ULVAC, Inc. provides them with financial support for training deemed necessary in order for them to fulfill their duties and encourages them to enhance their expertise. These training opportunities are reviewed on a continuous basis and updated as necessary.

Policy on strategic shareholdings

ULVAC, Inc. makes distinction between investment shares held for pure investment purposes and those held for purposes other than pure investment purposes. We classify shares held for the purpose of receiving gains from changes in the share value or from dividend income as shares held for pure investment purposes and shares held for other purposes (strategic shareholding) as shares held for purposes other than pure investment purposes.

ULVAC, Inc. may acquire shares of a listed company with which it has transactions only when it is judged that maintaining and strengthening the business relationship with the entity by acquiring its shares contributes to ULVAC's sustainable growth and enhancement of corporate value over the medium to long term.

Regarding strategic shareholdings, an annual assessment is conducted on whether or not to hold each individual strategic shareholding, examining whether the purpose is appropriate in terms of the benefits and risks from each holding or the Company's cost of capital, and the results of this assessment are reported at a meeting of the Board of Directors. If, as a result of the assessment, it is judged that the holding of certain shares has little significance, the Company considers reduction of the shareholding of such shares.

Management Structure

Directors



Setsuo Iwashita
President and Chief Executive Officer

March 1984 Joined the Company
 August 1992 Manager of Beijing Business Office and Shanghai Business Office, Overseas Operation Division
 September 1995 Director and Chief Executive Officer of ULVAC (NINGBO) CO., Ltd.
 July 1998 General Manager of Chinese Region, Asia Division of the Company
 March 2006 Director and Chief Executive Officer of ULVAC (CHINA) HOLDING CO., LTD.
 October 2006 Chairman of ULVAC (Shanghai) Trading Co., Ltd.; Chairman of ULVAC (SUZHOU) CO., LTD.
 September 2011 Director of the Company
 July 2012 Director and Executive Officer
 September 2013 Managing Executive Officer
 July 2015 Senior Managing Executive Officer of the Company; Chairman of ULVAC (CHINA) HOLDING CO., LTD.
 July 2016 Senior Managing Executive Officer and Senior Manager of Management Planning Department of the Company
 September 2016 Director and Senior Managing Executive Officer, Senior Manager of Management Planning Department of the Company
 July 2017 President and Chief Executive Officer of the Company
 January 2019 President and Chief Executive Officer and General Manager of Human Resource Center of the Company (current position)



Mitsuru Motoyoshi
Director and Executive Vice President

April 1980 Joined the Company
 July 1995 Senior Manager of Management Department, Ultra-High Vacuum Products Division
 July 1998 Staff Manager of Management Planning Department
 July 2000 Senior Manager of Accounting Department
 September 2005 Director and Senior Manager of Accounting Department
 July 2010 Director and Senior Manager of Management Planning Department
 July 2012 Director and Executive Officer, Senior Manager of Management Planning Department
 July 2013 Chairman of ULVAC TAIWAN INC.
 July 2014 Director and Managing Executive Officer, Senior Manager of Management Planning Department of the Company
 July 2015 Director and Senior Managing Executive Officer, Senior Manager of Management Planning Department
 July 2017 Director and Senior Managing Executive Officer, Senior General Manager of Business Strategy Headquarters Chairman of ULVAC (Shanghai) Trading Co., Ltd. (current position); Chairman of ULVAC (SUZHOU) CO., LTD. (current position); Chairman of ULVAC SINGAPORE PTE LTD (current position); Chairman of ULVAC MALAYSIA SDN BHD. (current position)
 July 2018 Director and Executive Vice President of the Company
 January 2019 Chairman and Chief Executive Officer of ULVAC (CHINA) HOLDING CO., LTD. (current position); Chairman of ULVAC Automation Technology (Shanghai) Corporation (current position)
 July 2019 Director and Executive Vice President, General Manager of Management Empowerment Center of Excellence of the Company, responsible for associate companies (current position); Chairman of ULVAC Tianma Electric (Jingjiang) Co., Ltd. (current position)



Akira Mihayashi
Director
External

April 1978 Joined Nippon Life Insurance Company
 March 1999 Branch General Manager of Ota Branch
 March 2001 General Manager of Metropolitan Area Corporate Finance Dept.
 March 2002 General Manager of Actuarial Dept.
 July 2005 Director, General Manager of Marketing Planning Dept. and Marketing and Working Dept., Sales Manager and Head of Operational Reform Office
 January 2007 Director and Executive Officer, General Manager of Sales Representatives Operations Management Dept. and Head of New Sales Operations Promotion Office
 March 2007 Director and Executive Officer, General Manager of Sales Representatives Operations Management Dept. and Deputy Director-General (Corporate Planning Dept.)
 March 2008 Managing Executive Officer, General Manager of Risk Management Dept.
 July 2008 Director and Managing Executive Officer, General Manager of Risk Management Dept.
 April 2009 Advisor of Nissay Credit Guarantee Co., Ltd.
 June 2009 President (current position)
 June 2010 External Statutory Auditor of RAITO KOGYO CO., LTD.
 September 2014 External Director of the Company (current position)



Norio Uchida
Director
External Independent

April 1973 Joined Tokyo Optical Co., Ltd. (currently TOPCON CORPORATION)
 June 1980 General Manager of Topcon Singapore Pte. Ltd.
 February 1989 President of Topcon Australia Pty Ltd.
 October 1994 Senior Vice President of Topcon Laser Systems, Inc. (currently Topcon Positioning Systems, Inc.)
 July 1999 President of Topcon Laser Systems Japan, Inc.
 June 2003 Executive Officer of TOPCON CORPORATION
 July 2003 President of Topcon Sales Corporation (currently TOPCON SOKKIA POSITIONING JAPAN CO., LTD.)
 June 2005 Director and Executive Officer of TOPCON CORPORATION
 June 2007 Director and Managing Executive Officer
 June 2010 Director and Senior Managing Executive Officer
 June 2011 Representative Director, President & CEO
 June 2013 Advisor to the Board
 June 2015 External Director of Nabtesco Corporation (current position)
 September 2015 External Director of the Company (current position)



Masasuke Matsudai
Director and Senior Managing Executive Officer

April 1981 Joined the Company
 July 1992 Senior Manager of Technology Group IV, Advanced Electronics & Ion Equipment Division
 July 1997 Senior Manager of Technology Department I, Advanced Electronics Equipment Division
 July 2003 General Manager of FPD Division I
 September 2006 Director and General Manager of FPD Division I
 July 2012 Director and Executive Officer, Senior General Manager of Global Manufacturing Promotion Division
 July 2013 Director and Executive Officer, Senior General Manager of Corporate Sales & Marketing Division
 June 2014 External Director of SHOWA SHINKU CO., LTD. (current position)
 July 2014 Director and Managing Executive Officer, Senior General Manager of Corporate Sales & Marketing Division of the Company
 July 2015 Director and Senior Managing Executive Officer, Senior General Manager of Corporate Sales & Marketing Division
 July 2016 President of ULVAC TECHNO, Ltd.; Senior Managing Executive Officer of the Company
 January 2019 Senior Managing Executive Officer, Senior General Manager of Customer Support Headquarters
 July 2019 Senior Managing Executive Officer, General Manager of New Business Development Center of the Company and Chairman of ULVAC TECHNO, Ltd.
 September 2019 Director and Senior Managing Executive Officer; General Manager of New Business Development Center of the Company; Chairman of ULVAC TECHNO, Ltd. (current position)



Dr. Choong Ryul Paik
Director and Managing Executive Officer

April 1991 Joined the Company
 September 1999 Joined ULVAC KOREA, Ltd. as Senior Director
 September 2000 President of ULVAC KOREA, Ltd.
 September 2012 Executive Officer of the Company
 July 2015 Managing Executive Officer of the Company
 September 2016 Chairman of ULVAC KOREA, Ltd. (current position)
 July 2018 Managing Executive Officer, Senior General Manager of R&D Headquarters of the Company
 September 2018 Director and Managing Executive Officer, Senior General Manager of R&D Headquarters
 July 2019 Director and Managing Executive Officer, General Manager of Innovation Center of Excellence (current position)



Sadao Aoki
Director and Executive Officer

April 1986 Joined The Dai-ichi Kangyo Bank, Limited (currently Mizuho Bank, Ltd.)
 July 2002 Deputy Head of Uchisaiwaicho Sales Department No. 5, Mizuho Corporate Bank, Ltd.
 April 2005 Seconded to SEIBU RAILWAY Co. Ltd. as Deputy Head of Management Planning Headquarters
 March 2006 Corporate Examiner, Corporate Promotion Department No. 1, Mizuho Corporate Bank, Ltd.
 October 2007 Chief Relationship Manager, Sales Department No. 15, Mizuho Corporate Bank, Ltd.
 April 2009 Examiner, Corporate Examination Department No. 1, Mizuho Bank, Ltd.
 May 2011 General Manager, Shinjuku-Shintoshin Branch, Mizuho Bank, Ltd.
 December 2014 Seconded to Forum Engineering Inc. as Managing Executive Officer
 August 2015 Joined Forum Engineering Inc. as Managing Director
 May 2016 Joined the Company as Assistant Staff Manager to Senior Manager of Finance Department
 July 2016 Senior Manager of Finance Department
 July 2018 Executive Officer, Senior Manager of Finance & Accounting Department
 January 2019 Director and Executive Officer, Senior Manager of Finance & Accounting Department (current position)
 September 2019 Director and Executive Officer, Senior Manager of Finance & Accounting Department (current position)



Dr. Kozo Ishida
Director
External Independent

March 1970 Joined HORIBA, Ltd.
 June 1982 General Manager of Product Department I, Development and Sales Division
 June 1988 Director
 June 1991 Managing Director
 June 1996 Senior Managing Director
 June 2002 Vice President and Director
 June 2005 Executive Vice President and Representative Director
 March 2011 Director and Advisor of HORIBA STEC Co., Ltd.
 March 2014 Vice Chairman and Representative Director of HORIBA, Ltd.
 March 2016 Senior Advisor
 September 2016 External Director of the Company (current position)
 March 2017 External Director of Seiko Electric Co., Ltd. (current position)
 April 2018 Fellow of HORIBA, Ltd. (current position)



Yoshimi Nakajima
Director
External Independent

April 1980 Joined The Yasuda Trust and Banking Co., Ltd. (currently Mizuho Trust & Banking Co., Ltd.)
 February 1982 Joined AVON PRODUCTS CO., LTD.
 May 1997 Joined Citibank, N.A. as Vice President
 June 2000 Joined Societe Generale Securities Services as Senior General Manager
 April 2002 Joined American Express International, Inc. as Vice President in charge of Global Traveler's Check & Prepaid Card Service, Japan Branch
 August 2011 Country Manager in Singapore (President)
 February 2014 Senior Vice President of Japan Branch
 April 2014 President and Representative Director of American Express Japan Co., Ltd.
 June 2017 External Director of Yamaha Corporation (current position); External Director of AEON Financial Service Co., Ltd. (current position)
 June 2018 External Director of Japan Freight Railway Company (current position)
 September 2018 External Director of the Company (current position)

Auditors



Makoto Ito
Auditor

April 1984 Joined Nippon Life Insurance Company
 March 2008 General Manager of 1st Osaka Corporate Finance Dept. and Kyushu Area Corporate Finance Dept.
 March 2012 General Manager of Metropolitan Area Corporate Finance Dept.
 April 2015 Joined the Company, Counselor to Senior Manager of Management Planning Department
 September 2015 Audit & Supervisory Board Member (current position)



Mitsuru Yahagi
Auditor

April 1983 Joined the Company
 July 1995 Manager of Product Development Section, Vacuum Pumps Department, Precision Machinery Division
 July 1996 Manager of Section I, Product Development Department, Components Division
 July 1999 Manager of Section II, Precision Machinery Technology Department, Components Division
 July 2004 Senior Manager of Research Department II, Research and Development Division
 June 2011 General Manager of Research and Development Division
 July 2018 Adviser to Senior Manager of Management Planning Department
 September 2018 Audit & Supervisory Board Member (current position)



Senshu Asada
Auditor
External Independent

April 1977 Registered as an attorney. Joined the Daini Tokyo Bar Association
 October 1996 Jointly established Koju Law Firm
 June 2001 External Audit & Supervisory Board Member of HIMIKO Co., Ltd.
 September 2007 External Auditor of the Company (current position)
 April 2012 Auditor of Judo Federation of Tokyo (current position)
 March 2014 Councilor of All Japan Judo Federation (current position)
 June 2017 External Director of Ahkun Co., Ltd.



Isao Utsunomiya
Auditor
External Independent

April 1997 Registered as Certified Public Tax Accountant
 July 1999 Opened Isao Utsunomiya Certified Public Tax Accountant Office
 June 2011 Manager of Welfare Department of Kyobashi Branch, Tokyo Certified Public Tax Accountants' Association
 June 2012 Representative Partner of Tsukiji Accounting Tax Corporation (current position)
 June 2013 Director of Tokyo Certified Public Tax Accountants' Association
 June 2015 Director and Deputy Manager of General Administration Department
 June 2017 Manager of General Administration Department of Kyobashi Branch
 September 2017 External Auditor of the Company (current position)
 June 2019 Deputy General Manager of Kyobashi Branch, Tokyo Certified Public Tax Accountants' Association (current position)

The sustainable management to which ULVAC aspires

Ever since ULVAC was founded, we have always placed the Basic Corporate Philosophy at the core of our business and contributed to the development of industry and science through the comprehensive utilization of vacuum technology and peripheral technologies. Ms. Yoshimi Nakajima, who became an ULVAC external director in 2018, and President and Chief Executive Officer Setsuo Iwashita exchanged views on issues and initiatives for ULVAC to continue contributing to the creation of a sustainable society through its business activities.



Yoshimi Nakajima
External Director

Setsuo Iwashita
President and Chief Executive Officer

ULVAC businesses closely linked to people's lives

Iwashita A year has passed since you became an external director at ULVAC. Now that you have become actively involved in management, what impression have you formed of ULVAC?

Nakajima ULVAC is a company honestly committed to businesses that benefit the world, and I am delighted to be a member of the management team. Since ULVAC is a B2B company, I had an image of ULVAC being somewhat far from consumers. However, while learning about the business from the inside during the past year, I have come to understand that ULVAC is closely involved with consumers in many ways. I think that the task now is to find a way to more effectively communicate these aspects of ULVAC to the world.

Also, although it appears that ULVAC does not actively publicize its global presence, I now have a renewed awareness that it is in fact a global company in terms of geographical coverage, business scale, and market share.

Iwashita That's right. Although ULVAC is involved in manufacturing in a wide range of fields, the substance of our business is difficult to communicate. For instance, our employees even have trouble explaining it to their own families. Although for many years an issue was that we were not very adept at marketing or communicating information to the outside world, we have strengthened our capabilities in these areas during the past few years.

Nakajima It may be that many employees aren't ordinarily conscious of the fact that their work provides a secure livelihood and a prosperous and comfortable way of life for their families. I think that focusing attention on this issue will create an opportunity for employees to think about solutions to social issues and social contributions through ULVAC's businesses. I also think that looking back on the company history will provide the reason why ULVAC has maintained continuity in society.

Iwashita During the course of ULVAC's history, there have been surprisingly many examples of products that have played important roles in areas closely tied to people's lives. For instance, packaging made of aluminum vapor-deposited package contributes to the long-term storage of food products in developing countries. Although in Japan, where high-tech fields attract attention, ULVAC is known mainly for production equipment for flat-panel displays, semiconductors, and electronic parts, we are deeply involved in people's lives through numerous industrial fields.

The high extensibility and expanding potential of vacuum technology

Iwashita In today's world, we face numerous social problems, including shortages of energy, water, and food, traffic congestion, inadequate medical care, and changes in the natural environment. The term "smart society" provides us with a means of solving these problems. ULVAC supports the propagation of the advanced key technologies and applications that constitute a smart

society by providing vacuum deposition processing technology and equipment fundamental technology.

In that context, looking at energy-related applications, reduction of semiconductor power consumption is required in a smart society, where data growth entails consumption of enormous amounts of electricity. For the past 25 years or so, ULVAC has been involved in the development of fundamental technology that has led to PGRAM, a new type of non-volatile memory that reduces power consumption to 1/100th of the previous amount.

Nakajima I think the story of PGRAM you just mentioned is symbolic in that ULVAC's effort in embarking on the basic research that led to PGRAM some 25 years ago, at a time when mass consumption indicated social prosperity, has led to results in the present era thanks to our steady pursuit of development. It's also symbolic that the technology is now required worldwide. In a smart society, in which information processing is carried out on an unprecedented scale, I think the fact that ULVAC unerringly grasped this key point and has led the technology essential for end-to-end is a selling point.

Iwashita It's not as if we engage in this type of development project with the form of the final product or technology application clearly in mind from the start. Rather, as society changes and social issues change as the development process unfolds, an approach for utilizing the product or technology comes into focus, and shifting to that approach leads to practical application. In other words, the curiosity and spirit of inquiry of engineers eventually leads to results, sometimes after twenty years or longer. This R&D approach may be said to be a tradition at ULVAC. What then becomes necessary is to earn higher profits as a business.

Nakajima Since ULVAC has ample capabilities to create things society requires, the question is how to publicize those capabilities to the world and broaden ULVAC's reach. I have high expectations for ULVAC's marketing operations, which have been beefed up in recent years, and I also think it will become important going forward to listen to external feedback and utilize it in development.

Iwashita That's right. We now promote development from a B2B2C perspective that involves approaching the end users of our customers and are engaging in product development and manufacturing based on a medium-to long-term outlook. To achieve this, it is important that researchers and business operation leaders alike are able to picture a vision and have a dream for the future.

I previously mentioned the example of packaging processed with vapor-deposited aluminum. ULVAC has created tremendous value in the healthcare and life innovation sectors as well as in the electronics and energy sectors. In particular, vacuum freeze-drying technology, which enables long-term storage and volume reduction of food products and pharmaceuticals, is widely used in the manufacturing of freeze-dried foods, emergency rations, powder vaccines, and other products. This technology contributes to solving social problems by handling issues such as reducing food loss, ensuring food supply during disasters, and spreading medical care. Also, our original Micro Powder Dry technology, with which liquid sprayed



Yoshimi Nakajima

Personal Profile

Joined The Yasuda Trust & Banking Co., Ltd. (currently Mizuho Trust & Banking Co., Ltd.) in 1980. After working at manufacturing companies, Citibank, N.A., and Societe Generale Securities Services, joined American Express International, Inc. in 2002, serving as a senior vice president of Japan branch and later as president and representative director of American Express Japan Co., Ltd. Appointed an external director of ULVAC, Inc. in September 2018.

under vacuum is freeze dried, is attracting attention for use in the production of sterile products and a variety of other applications ranging from food and cosmetics raw materials to electronic materials.

Nakajima It would seem that the high extensibility of vacuum technology expands the application field, and potential usages became apparent in the development process, enabling value creation covering a number of fields.

Turning to another subject, I think that responding to global climate change is an important challenge in the industrial world. What are your views on environmental initiatives at ULVAC, in relation to the solving of social problems in the energy sector you mentioned earlier?

Iwashita We engage in environmental initiatives centered on three themes: pursuing environmental protection in our business activities, delivering environmental performance that meets the needs of customers, and contributing to the environment through final products.

ULVAC operates six main production plants, located mainly in East Asia. Each plant not only conforms to and complies with local environmental standards and regulations but also undertakes environmental impact reduction by promoting energy and resource conservation and striving to reduce CO2 emissions, water use, and waste emissions.

The vacuum deposition systems and other products

made at our plants meet the stringent environmental performance conditions of customers and deliver added value in the form of reduced power consumption and improved energy conversion efficiency.

And, our development outcomes give rise to the development of applications, such as PCRAM, solar cells, lithium-ion batteries, power devices, and other final products, and contribute to the environment through power generation, energy saving, and energy storage.

Thus, I want to proactively convey the fact that we protect the environment in multifaceted ways throughout the entire supply chain with which ULVAC products are associated.

Nakajima That means that there are environmental impact reduction and environmental conservation effects available only from vacuum technology. I do think ULVAC should push forward the concept of “vacuum is clean.”

Sustainable initiatives supporting the realization of a sustainable society 50 years and

Iwashita If our customers didn't use vacuum technologies at their production sites, they would use more energy and need greater quantities of deposition materials. I think that ULVAC will need to communicate to the world in an easy-to-understand way the expanding potential and diverse value inherent in vacuums themselves.

HR policies for the realization of sustainable management

Nakajima Nowadays, work style reforms and diversity are important management issues facing companies, and workers are asking themselves again “What do I work for?” There is growing momentum for people to reexamine the relationship between him/her and company as well as between him/her and work. At ULVAC, what are your thoughts about human resources, a critical factor for companies to realize sustainable management?

Iwashita ULVAC currently has around 6,400 employees, half of whom work overseas, and localization of top management personnel has progressed at our overseas subsidiaries throughout the world. At the same time, although we are increasing the number of foreign nationals promoted to executive positions at the head office, nearly all of the top management personnel at the head office are Japanese nationals.

When I reflect on this Group management situation, I wonder whether our employees who work overseas

under orders from the head office really share a common mission and are able to fully play an active role with a sense of purpose in their work. This is because, with regard to the question “What do I work for?” that you mentioned, people's values and sense of purpose differ from country to country, or region to region. So, I think that ULVAC is at the stage where we should reconsider whether our traditional way of engaging in global management under one set of rules and a single policy is the best approach.

Also, at ULVAC there is no discrimination of employees on the basis of gender or race. Nevertheless, with respect to promoting the participation and advancement of women, the number of women promoted to a managerial position remains low. I recognize that this is the matter I must consider to make improvements.

Nakajima Promoting the participation and advancement



are important for the realization of a sustainable society 100 years ahead.

of women isn't based on achievement of a target ratio of women in management positions. I think that, first of all, it is important to recognize differences in the way men and women think and in the work at which they excel and create workplaces that enable people to demonstrate their capabilities free from unfavorable treatment due to those differences.

I don't sense preconceptions or stereotypes toward women in ULVAC's corporate culture, and I think diversity has taken hold in that regard. However, I think that what will be required going forward is inclusion that brings about a new culture arising from diversity. The transformation to global management, such as the promotion of foreign nationals to executive positions that you mentioned, is something that can be achieved as ULVAC promotes inclusion, and I believe that ULVAC is now in that transition period.

Iwashita Another topic I would like to discuss concerning HR policies is initiatives to develop people. A company should be a place where people grow and develop, and I think that companies should provide opportunities for growth and assistance for constant development of skills and abilities. I think that, in addition to operation of education and training programs, what's important is for employees to venture out of their current workplaces, think about things in circumstances different from those they have experienced before, and come to know themselves. This is true in development of next-generation executives as well. For instance, I want division

general managers to gain management experience at overseas subsidiaries and develop their talents while actually exercising authority and responsibility.

Nakajima This process of developing next-generation executives can be considered a succession plan unique to ULVAC, which has many overseas subsidiaries. Various skills are required of the executives of a global corporation, and this approach will also provide an opportunity to study management deeply rooted in each country.

Future aspirations and expectations for ULVAC

Iwashita You have been involved in the management of many companies, and I would like to create opportunities for you to speak to our employees and their families about ULVAC from an outside perspective. Also, I would be very grateful for your assistance in making Board of Directors meetings a forum for more free and frank discussion.

Nakajima I intend to continue to be thoroughly involved in the management of ULVAC as an outside director. Since I have a strong personal interest in people and corporate culture, I want to directly meet more people and support the development of ULVAC, which has a unique, open-minded corporate culture, and high potential. I particularly want to assist in establishing the brand and actively communicating ULVAC's uniqueness to the world.

Although in the past ULVAC followed a growth trajectory without taking major risks, I have high expectations that ULVAC will surely be able to secure even greater growth opportunities by focusing on and thoroughly discussing social and environmental risks that lie 50 years or 100 years ahead.

Compliance

Relevant SDGs



The ULVAC Group views compliance as a vitally important issue. In addition to conducting awareness-raising activities so that each person in the ULVAC Group acts with a spirit of compliance, we are establishing and operating a range of institutions and regulations to ensure thorough compliance.

Corporate Code of Conduct

ULVAC has established a Corporate Code of Conduct comprising 18 items, conducted education, and distributed booklets to inculcate a culture of compliance, in order to ensure that the execution of the duties of officers and employees is compliant with laws and regulations and internal rules, and that we fulfill our corporate social responsibility.



Compliance Education

ULVAC, Inc. is working to create a culture of compliance through awareness-raising activities. As part of this effort, we conduct periodic and ad hoc online training and face-to-face training on corporate ethics, export compliance, prevention of insider trading, prevention of harassment, and other topics, and test the degree of comprehension.

Whistleblowing System

ULVAC, Inc. has adopted a whistleblowing system operated through the Internal Auditing Office, which is an independent body. The Internal Auditing Office also serves as the secretariat for the Compliance Committee, and it is structured to give full consideration to confidentiality throughout the process of investigating the content of reports. This system does not prevent the person making the report from selecting other institutions or organizations within the Company as the destination for the report, and in such case, the report shall also be handled appropriately.

Individuals making reports are not treated unfavorably in any way. Reports can also be submitted anonymously.

After a whistleblower report has been received, the initial response is for the Compliance Committee of ULVAC, Inc. to conduct an investigation in order to establish the facts. This investigation is particularly mindful of fairness, and is conducted judiciously and thoroughly. If necessary, assistance may be sought from external experts, such as lawyers, and thorough interviews that are as wide-ranging as necessary may be conducted and analyzed.

The president chairs the Compliance Committee and the members of the Committee observe a strict duty of confidentiality in carrying out their duties.

Handling of Violations

In the event that, based on the results of an investigation by the Compliance Committee, it is deemed that a violation of laws or regulations has been committed, then the opinion of an external expert, such as a lawyer, may be sought as necessary, steps will be taken to ensure that the violation ceases with immediate effect and improvement measures will be implemented, and those involved in the violation will be dealt with after deliberation by the appropriate bodies. In addition, the root causes of the violation are also investigated in order to formulate effective measures for preventing recurrence.

Risk Management

Relevant SDGs



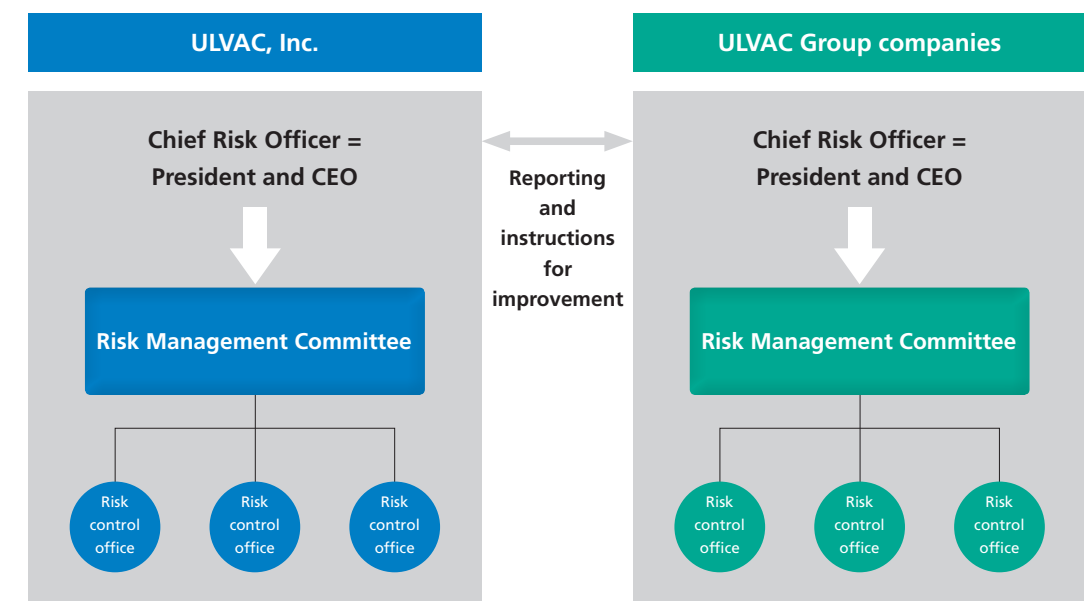
The ULVAC Group considers that responding appropriately to increasingly complex and diverse risk factors leads to the creation of governance structures that contribute to the fulfillment of legal requirements and the creation of internal control structures, and by extension, the medium- to long-term improvement of corporate value. We are expanding systems that can respond appropriately to risk factors through identification, classification, analysis, and evaluation, and we are working to increase corporate value by reflecting them in our management strategy.

Risk Management System

In regard to risk management initiatives, ULVAC, Inc. has established rules concerning its risk management system, classifying a broad range of risks from various perspectives, and designated the control offices primarily responsible for risk management according to the classification of risks. Furthermore, these risk control offices identify more specific risks and respond to them. We work to ensure that these offices efficiently gather important information in operating the risk management system. In addition, in order to share and evaluate information concerning the operation of the risk management system on a company-wide

basis, we have a Risk Management Committee, which is chaired by the president, and mainly comprises representatives of the risk control offices with primary responsibility for risk management. The Risk Management Committee holds regular twice-yearly meetings as an umbrella organization for risk management, and it determines company-wide basic policies, monitors the state of management and administration, and considers any improvements that can be made, etc. Furthermore, initiatives at ULVAC, Inc. are implemented at ULVAC Group companies as appropriate for the scale and business type of the company in question.

Risk Management System



- Risk control offices are designated according to risk classifications and they implement risk management through a PDCA cycle.
- Each Group company decides whether it is necessary to establish a Risk Management Committee in consideration of the size of the company in question and other factors.

Quality Assurance and Product Safety

Relevant SDGs



The ULVAC Group is engaging in initiatives worldwide to meet customer expectations for high-level, safe ULVAC quality through assurance activities centered on Front Loading.^{*1}

ULVAC Group Quality Policy

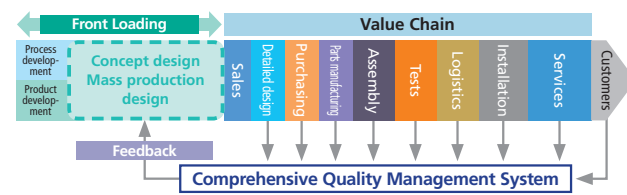
"Product quality assurance strengthens our customers' confidence in ULVAC."

- The ULVAC group is committed to promote ULVAC quality through front-loading in all business processes including development, sales, production and service and through offering products and services which include needs from all parts of the world.
- Each employee within the ULVAC group strives to ensure that their personal efforts contribute to the creation of value necessary to maintain the customer as an everlasting partner.

Global Integrated Certification for ISO 9001 and ISO 14001

As of the end of December 2017, 38 ULVAC Group companies had completed integrated certification for the 2015 versions of ISO quality and environmental management systems. We have aligned quality policies groupwide and conduct activities to address quality issues and deploy improvements globally.

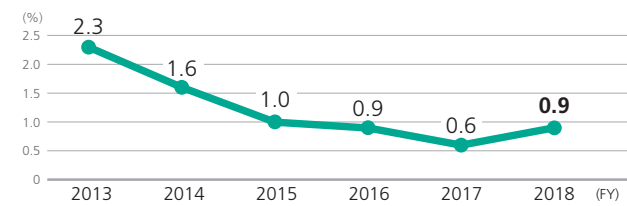
ULVAC Group's Comprehensive Quality Management



The ULVAC Group promotes quality creation by implementing Front Loading in all business processes. At ULVAC, the term Front Loading refers to activities to solve problems and resolve issues in the concept design phase prior to order-taking by reflecting technologies cultivated to respond to change in needs and seeds.



Year-on-year comparison of costs related to nonconformity after delivery (non-consolidated)

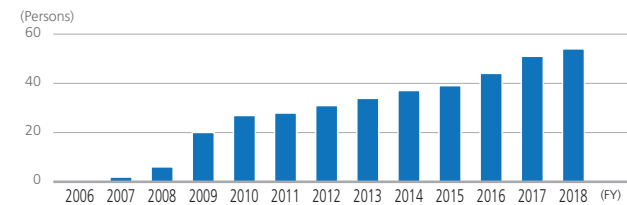


In fiscal 2018, the ratio of costs related to nonconformity to net sales deteriorated by 0.3 percentage points from the previous fiscal year. This is the result of our vigorous verification of development to meet increasingly stringent market requirements. Accumulated knowledge is shared throughout the Group to achieve comprehensive quality management.

Product Safety Activities

To deliver safe and secure ULVAC brand products to markets around the world, qualified safety assessors^{*2} play a leading role in product safety assessments and continuously engage in activities to verify the required safety and quality at the drawing release and product shipment phases. Whereas our activities to promote product safety systems have been centered on Japan, in the current fiscal year we have shifted the emphasis to promotion overseas in line with the gaining of global integrated certification for quality management systems. With the aim of establishing a framework in which each Group company assures safety and quality of its products to realize swift provision of safe and secure products, ULVAC is promoting product safety activities throughout the Group, which will lead to greater customer satisfaction.

Number of qualified safety assessors in the ULVAC Group

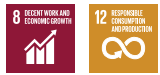


*1 "Front Loading" ordinarily refers to arranging or planning so that a large portion of work occurs in the initial phase. At ULVAC, it is an activity to create quality by identifying issues as soon as possible.

*2 Safety Assessor (SA) Qualification is a qualification scheme based on third-party certification of machine safety knowledge and competence under international safety standards.

Procurement

Relevant SDGs



Suppliers are important partners of ULVAC for MONODZUKURI. By linking procurement activities with development and design activities based on the information flow, the ULVAC Group is working to enhance efficiency of the entire supply chain, including suppliers, from the development and design phases while always being conscious of the environment and society.

Procurement Policy

ULVAC has established, observes, and promotes the Basic Procurement Policy. In fiscal 2018, ULVAC reviewed and revised the Basic Procurement Policy and established the Purchasing Code of Conduct to maintain "sound, good relationships with business partners and affiliates," and strove to renew the thorough understanding of employees engaged in purchasing.

Regarding "promoting CSR procurement," which is an item added to the revised Basic Procurement Policy, in July 2019, we conducted a questionnaire survey on CSR targeting our major suppliers in terms of the amount of transactions, with a view to ensuring that the operation of the supply chain contributes to the fulfillment of social responsibility.

Moreover, ULVAC conducts self-assessment and for that purpose refers to the RBA Code of Conduct, a set of social, environmental and ethical industry standards issued by the Responsible Business Alliance (RBA).



Communication with Suppliers

ULVAC holds operations briefing meetings once a year as a forum for ULVAC management to directly explain to suppliers the business environment and prospects and supplier meetings three times a year for the person in charge to communicate production plans in a timely manner.

At supplier meetings, ULVAC notified the revision of the Basic Procurement Policy mentioned above as well as initiatives concerning the RBA Code of Conduct and the questionnaire survey. Moreover, in order to reflect suppliers' proposals for improvement of parts



Operations briefing meeting

manufacturing methods in products and production, we hold technology exchange meetings in which design engineers and personnel in charge of purchasing also participate, as well as new product briefings, as necessary.

Global Production Bases

Taking advantage of their proximity to customers, ULVAC's principal production bases conduct local procurement and seek to optimize procurement as part of their ongoing efforts to establish a global supply chain.

Previously, when suppliers delivered parts for overseas production, all cargo was shipped via ULVAC's Chigasaki Plant.

With the introduction of a new transfer center, suppliers can now directly deliver parts to the center where all the processes from acceptance of delivery to export procedures are handled in an integrated manner, resulting in a great reduction of transportation distances in the supply chain and consequently lower energy consumption and lower exhaust gas emissions.

Global Logistics

Recognized for legal compliance concerning customs clearance procedures and self-management of cargo security, ULVAC is certified by Japan Customs as an authorized economic operator (AEO).

To simplify and expedite export customs clearance and prevent trade incidents, ULVAC holds meetings of the Export/Import Management Committee and implements trade risk management.



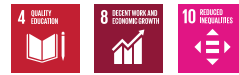
AEO post-clearance audit by Yokohama Customs



Workshop on trade risk management

Human Resources

Relevant SDGs



To achieve sustained growth, vitalized organizations must serve as a foundation enabling diverse human resources to fully demonstrate their potential. ULVAC will strengthen its management base by actively engaging in organization and human resources development and focusing on cultivating the leaders of tomorrow.

Basic Policy

In recent years, a shift toward the smart society has begun worldwide. With the advent of a wave of technological innovation, global competition is intensifying. Amid such tremendous changes, ULVAC, whose overseas sales account for 60% of total sales, cannot operate business sustainably unless it provides an environment where people with diverse personalities and strengths can maintain physical and mental health, bring their differing capabilities into full play, and enhance one another's capabilities through friendly competition.

At ULVAC, people with different backgrounds, in terms of nationality, ethnicity, philosophy, culture, language, gender, age, and specialty, are flourishing. Respecting such diversity and promoting inclusion, we aim to innovate to resolve customers' and

society's issues while continuing to deliver new value that also leads to the personal growth of each employee.

Based on this policy, in 2018, ULVAC, Inc. launched the Human Resource Center, which is under the direct control of the president, to reinforce the development of global human resources capable of thriving in a changing external environment in order to successfully compete in a business environment characterized by dramatic change. Recognizing that the development of a company, technological innovation, and product competitiveness depend on human resources and that people are ULVAC's most important asset, we will implement measures to maximize the value of this critical asset.

ULVAC Basic Policy for Human Resources Development

We are conscious that the most important resources for corporate vitality and competitiveness are the personnel and the organizations in which they work. We are conducting the following human resources development, based on our corporate philosophy and basic management policy.

- Human resources who respect other individuals, trust each other and fulfill their responsibilities
- Human resources who can see the true nature of each issue and create revolutionary technologies and projects with passion and tenacity
- Human resources who are full of aspirations to improve themselves and take voluntary actions to achieve goals
- Human resources who have a global perspective and aim to take leadership in exploring the world

Groupwide Education and Training

Starting with the introductory program for new employees, ULVAC also provides a program for employees in their third year as well as stratified training programs. Programs include ones designed to enhance motivation and management capabilities according to the roles expected from employees at each organizational level.

ULVAC Academy Portal

We are promoting e-learning throughout ULVAC based on the concept of providing an environment that enables learning anytime anywhere.

Since its launch in 2016, the contents posted on ULVAC Academy Portal have grown to include some 600 items.

Principal contents

- Message from the President
- Video clips of seminars held in ULVAC

- Engineering education on technology, design, manufacturing, etc.
- Mandatory education for onsite employees, such as basic product safety education
- Education on trading and security trade control, etc.

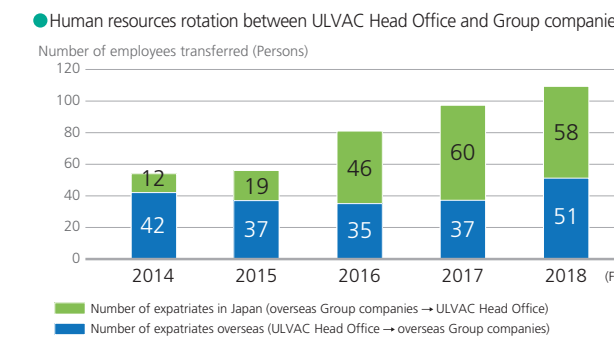
ULVAC Academy Portal now supports Japanese, English, Chinese, and Korean. Over 6,000 ULVAC employees have registered and are using the portal.

Developing the Next Generation of Executives

ULVAC has put in place an education and training framework for developing next-generation executives that includes programs on such subjects as the qualities ULVAC leaders should possess and is designed to cover the entire Group cross-functionally. Next-generation executives and future-generation executive candidates receive education and training based on a development plan in accordance with the education and training framework.

Human Resources Rotation

We are vigorously promoting human resources rotation in the Group, especially between ULVAC Head Office and overseas Group companies, as a measure to promote the diversity and inclusion mentioned above. Moreover, by vigorously promoting assignment of ULVAC employees to companies outside the Group on loan and vice versa, we are striving to vitalize human resources and establish human networks while also expecting to achieve innovation through technical exchange.



Holding of Seminars

Since its establishment in 2018, the Human Resource Center has been vigorously holding seminars. It held 50 seminars with a cumulative total of participants exceeding 3,200 employees. These seminars are designed to inspire ULVAC employees to support the realization of the smart society and develop business in new growth markets, without being constrained by conventional businesses.

As mentioned above, as technological innovation is advancing and already bringing about dynamic change, it is crucially important to understand the value ULVAC can offer and embody that value in a vision looking five to ten years ahead. Based on the recognition that the enhancement of ULVAC's corporate value depends on R&D of leading-edge technology, seminars are wide ranging. In addition to information on leading-edge technology, the trends reshaping industry, and situations of competitors, seminars also cover approaches concerning management, marketing, intellectual property, human resources development, and other topics, as well as case studies to understand how certain companies shifted decisively to growth trajectories. Experts with track records of success in particular fields are actively sought out and invited as external lecturers.

Our expectation is that seminar participants will realize much that they might not encounter or recognize in their daily routine, and this will expand their awareness to be sensitive and proactive to changes in the market, developing human resources capable of seizing the initiative and thriving in a global setting.

Furthermore, in the current fiscal year we have increased opportunities for discussion by holding seminars in combination with panel discussions and workshops. These formats encourage participants to express their opinions and as discussion becomes broader and deeper, the participants gain more fresh perspectives.

We will continue to use seminars for human resources development throughout the Group.

Seminars held

	FY2017	FY2018	Total
Engineering and MONDZUKURI	6	11	17
Human resources development	4	9	13
Marketing	1	9	10
Other	6	4	10
Total	17	33	50

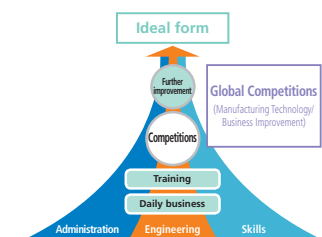
Global Manufacturing Technology/Business Improvement Competitions

ULVAC aims to achieve the shared vision of individuals, divisions, the Company, and the Group by vitalizing individuals through their daily work, education and training, seminars, and other means, and by sharing the outcomes and utilizing them as ULVAC's assets.

The aim of the Global Manufacturing Technology Competition is value creation through the improvement and innovation of the value chain process based on the central theme, "Group-wide innovation of production technology to increase value." At the Global Manufacturing Technology Competition, participants present the outcomes (benefits) of their initiatives and processes for resolving issues.

The theme of the Global Business Improvement Competition is "business process improvement applicable throughout the Group." The aim is to create mechanisms and measures to inculcate ULVAC's management policies in day-to-day work, maximize group-wide synergy, and strengthen cross-organizational functions to support resolution of issues relevant to two or more Group companies. In the Global Business Improvement Competition, participants make presentations on topics such as cost-reduction impacts, process improvements to tackle issues, enhancement of operational efficiency and productivity.

Through these competitions, we aim to make all employees aware of the importance of putting the Basic Corporate Philosophy and the Management Policies into practice in their work and linking their work to outcomes that contribute to achieving ULVAC's vision.



Human Resources

Creating an Excellent Working Environment

ULVAC, Inc. is creating a working environment in which employees can demonstrate their strengths and originality while enhancing their productivity, and furthermore we are developing conditions and programs that minimize the impact of life events, so that diverse human resources can flourish and perform well.

Retention of human resources and transfer of technological expertise

Mindful that technological innovation is triggered by the integration of accumulated technology, new knowledge, and creativity, ULVAC, Inc. emphasizes the retention of employees and the transfer of technological expertise. For example, we conduct a questionnaire survey of new employees six months after they join ULVAC, Inc. and their superiors, and if gaps in recognition are revealed, steps are soon taken to resolve the issue. Moreover, the system for rehiring senior employees after mandatory retirement is contributing to the transfer of technological expertise from skilled engineers to the next generation.

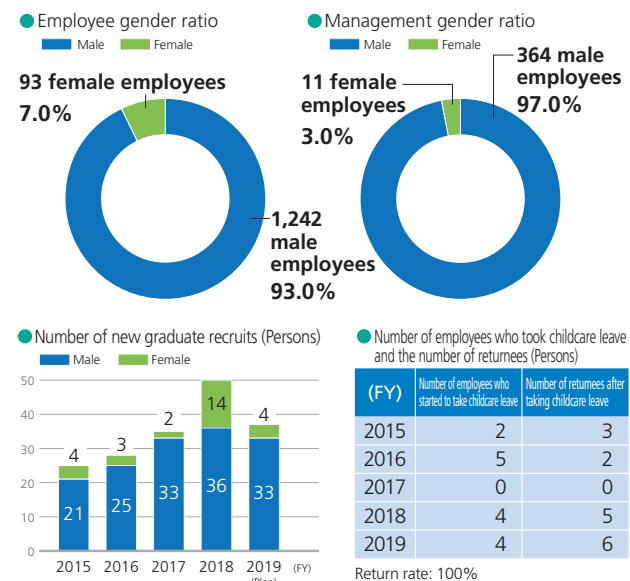
Systems for supporting childcare

With the aim of creating a workplace where employees can achieve a balance between work and childcare, in fiscal 2018, ULVAC, Inc. introduced support systems that go beyond the statutory requirements. Childcare leave can be taken until the first April 30 after the child reaches two years of age. The short-working-hours system for childcare is available for employees who have a child up to the third grade in elementary school. All employees who took childcare leave have returned to work.

Improvement of systems for flexible workstyles

In addition to the staggered working hour system and the flextime system, which have been available, ULVAC, Inc. has introduced an annual paid leave system whereby a portion of the leave can be taken by the hour (up to a maximum of 4.0 hours per year). Thus, systems for more flexible workstyles have been established.

Human Resources Data (non-consolidated)



Promotion of Health Management

Priority Activity 1 Boosting Employee Motivation

In the belief that enhancing the personal qualities of the executives and managers who form the backbone of the organization is closely linked with enabling employees to personally experience the meaning of work and to feel that each individual applies his or her strengths and is valued, ULVAC, Inc. provides executives and managers with training on the meaning of work, self-understanding assisted by psychological tests, and psychological safety.

In addition, ULVAC, Inc. utilizes its own organizational health survey to periodically conduct organization vitalization training in which executives come join forces to consider together policies and measures for creating workplaces where each employee has a dream, work is fun, and everyone looks forward to going to work.

In fact, scores in an organizational health survey of employees at divisions that participated in organization vitalization training have improved following the training (Figure 1). ULVAC, Inc. is enhancing employee motivation through these activities.

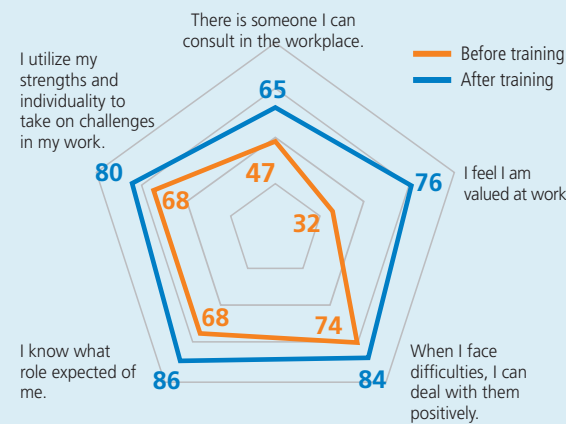


Fig. 1 The organizational health survey was administered at the time of application for a health check. At departments that conducted organization vitalization training, the percentage of employees who answered "5. Strongly agree" or "4. Agree" to each question (5-point rating scale) has increased since the training began.



ULVAC, Inc.'s corporate creed states, "People determine whether the company will prosper or fail." To put our Basic Corporate Philosophy into practice and contribute to the development of industry and science, we must make further progress in creating an environment in which each individual employee is healthy in mentally and physically, full of vitality and able to demonstrate his or her capabilities to the fullest.

ULVAC, Inc. aims to be a company where "each employee has a dream, work is fun, and everyone looks forward to going to work", and the president, the Chief Health Promotion Officer, the general manager of the General Administration & Personnel Department, and occupational health physicians and occupational health nurses act in unison to promote health management with the objective of "enhancing human qualities."

Priority Activity 2 Laying a Foundation for Increasing Vigor in Work

We believe that inculcating appropriate exercise habits not only prevents illness, but also leads to increases in employee memory retention, mental capacity, and concentration.

To instill exercise habits, we have held events such as the Walking Rally Workplace Competition and UL-fit's RUN (a relay race held on company premises).

The results of analysis of the findings of ULVAC's organizational health survey indicate that scores for work engagement (UWES^{*1}), which measures vigor, dedication, and absorption in work, are high among employees who answered that they have regular exercise habits (Fig. 2).

*1 The Utrecht Work Engagement Scale (Work engagement is thought to be related to psychological health improvement and productivity enhancement. Source for detailed information (in Japanese): Akihito Shimazu Laboratory, Faculty of Policy Management, Keio University / URL: <https://hp3.jp/tool/uwes>)



Fig. 2 Comparison of status of exercise habits and work engagement scores (mean values)

ULVAC, Inc. was commended for these activities and has been recognized as a Certified Health and Productivity Management Organization (White 500) for two consecutive years, and ULVAC EQUIPMENT SALES, Inc. has also been recognized as a certified Health and Productivity Management Organization.

ULVAC will continue integrated group-wide promotion of health management activities.



Comment from the President and Chief Executive Officer



Future Measures and Outlook

A survey by Gallup, Inc., a public opinion survey and consulting firm, finds that when organizations with high engagement scores and those with low engagement scores are compared, it is evident that organizations with high scores have excellent results for performance indicators such as productivity and earnings.

(State of the Global Workplace Report, Gallup, Inc.)

Since fiscal 2013, ULVAC, Inc. has included questions concerning employee engagement ("Do you understand the role expected of you?" "Do you feel valued in the workplace?" etc.) among the indices in the ULVAC organizational health survey, and scores are gradually improving through the above-mentioned activities.

We think that for the purpose of putting the Basic Corporate Philosophy into practice and contributing to the development of industry and science in a business field in which the pace of change will further accelerate, it is important to create mechanisms that will increase engagement and enable each employee to further personally experience the meaning of work. For this reason, going forward, we will enhance our health management measures.

In fiscal 2019, in addition to existing measures, such as organization vitalization training for managers and walking rallies for all employees, we will launch new initiatives. Specifically, we will promote mutual improvement of problem-solving skills for complex problems, enhancement of human qualities, and organizational development by holding a Mistake and Setback Case Study Review Meeting as a regular event for managers to experience a simulation of such cases. Also, we will continue to focus on engagement in essential health and productivity management measures, such as the provision of "Power Lunches—Meals to Increase Afternoon Concentration" utilizing the employee cafeteria, which is used by more than 90% of employees.

Setsuo Iwashita
President and Chief Executive Officer

Occupational Safety and Health

Relevant SDGs



The ULVAC Group has made "Safety First" the fundamental principle of business management. By operating our Occupational Safety and Health Management System (OSHMS) focused on risk assessment, we endeavor to ensure safety of the products and services used by our customers and create dynamic workplaces where Group employees can work in good physical and mental health.

Approach on Occupational Safety and Health

In the execution of development, manufacturing, transport, installation, maintenance and other business processes, everyone in the ULVAC Group, from senior management to line workers, is encouraged to seize the initiative in continuously undertaking improvements placing the highest priority on safety, striving to maintain and improve the safety of everyone involved and ensure a healthy working environment.

ULVAC Basic Policy on Occupational Safety and Health Management System (OSHMS)

1. Compliance to the code/regulations, and implementation of risk assessment

Comply with Codes of Occupational Safety & Health Management and Rules according to ULVAC's OSHMS, and conduct Risk Assessment in order to perform Occupational Safety & Health Management activities with the help of all the employees.

2. Assure safety of ULVAC's products

Comply with ULVAC's standard for safety design and perform risk assessment of our products, in order to deliver our safe products and services to our customers.

3. Planned education about Occupational Safety & Health & Product Safety

For all the employees and contractor's employees, perform Occupational Safety & Health training based on ULVAC Safety Management system, while offering scheduled Product Safety training for our users.

4. Promotion of mental health care

Promote mental health care achieve a health, vigorous workplace environment.

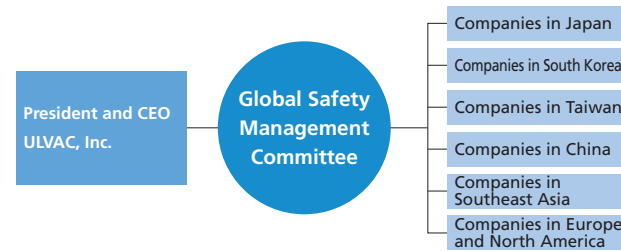
5. Global expansion of ULVAC group

Through the Safety & Health promotion activities by the Global Safety Management Committee, we will try to create an appropriate work environment for the whole ULVAC group, and contribute to prosperity of our businesses.

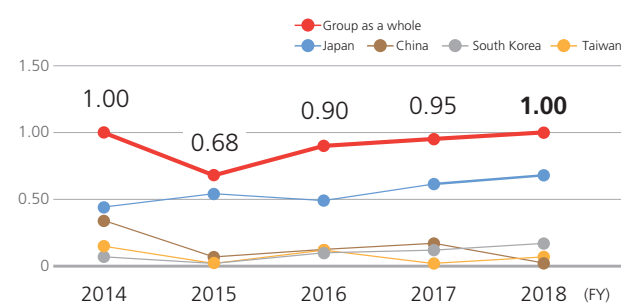
Aiming for a Type-V Zero Accident Record

To ensure the safety and good health of its customers and employees, the ULVAC Group regularly holds meetings of the Global Safety Management Committee, and all Group companies promote safety and health activities in an integrated manner. Each Group company operates the OSHMS, and everyone is engaged in safety and health activities, such as management reviews conducted by the president and other executives and risk assessments performed by each employee. In 2019, the Chigasaki Plant achieved a Type-V zero accident record (total of 15.7 million hours), the highest level provided by the Ministry of Health, Labour and Welfare. With "Safety First" as their motto, all Group companies will continue their efforts to extend the zero accident record.

ULVAC's Safety Management System



Frequency ratio of occupational accidents at ULVAC



* This graph shows the rate of occupational accidents for each fiscal year, with the value for fiscal 2014 (as of June 2015) as 1.00. The number of accidents remained low in fiscal 2018 with the lowest number of accidents with lost working hours.

Safety and Health Activities

In recent years, hazards associated with chemical substances have been attracting attention and laws have become stricter. ULVAC, Inc. provides special seminars to employees on chemical substances, covering key points of risk assessment and procedures for filing applications with the authorities, to prevent occupational accidents and ensure compliance with laws and regulations.



Special seminar on chemical substances

Environment

Relevant SDGs



Based on its environmental policy, the ULVAC Group provides products that allow customers to embrace the feeling that they have made environmental contributions. Through management and reduction of energy consumption and other efforts, we are working to minimize environmental impacts. As we have a global production system, we are working to gain integrated ISO 14001 certification so as to strengthen governance, ensuring information sharing among Group companies and swift implementation of instructions issued by top management. The ULVAC Group will continue its efforts to reduce environmental impacts through its products.

Environmental Philosophy

The ULVAC Group is tackling protection of the global environment, one of the major issues confronting people worldwide. We will consider environmental conservation in all aspects of our business activities and will contribute to realization of a better living environment and a more affluent society.

Environmental Policy

Develop energy-saving products, reduce the use of natural resources and protect the environment.

- 1) ULVAC Group products/Final products
- 2) ULVAC Group manufacturing process

Environmental Activities in Fiscal 2018

Total waste emissions decreased somewhat compared with the previous fiscal year.

As recovery of valuable materials is important also from the perspective of material recycling, we will continue to promote it throughout the ULVAC Group.

We are also implementing group-wide initiatives, including visualization of wattage, concentration of locations where electricity-intensive activities are conducted, and 100% conversion to

LED lighting for factories and offices, in order to reduce energy (electricity) consumption. CO₂ emissions decreased compared with the previous fiscal year. Water consumption increased greatly at Group companies in Japan.

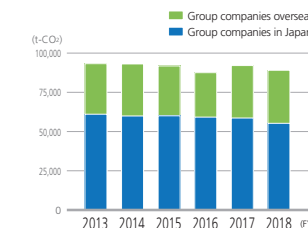
The ULVAC Group will continue to promote environmental management activities in order to reduce environmental impacts derived from its business activities.

Material balance (Source: Aggregate data for fiscal 2018)

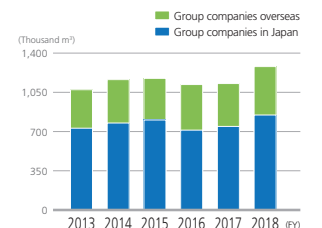
	INPUT		OUTPUT	
Electricity consumption	179,752 thousand kWh	CO ₂ emissions	88,961 t-CO ₂ (Emissions due to consumption of electricity, gas, and fuels)	
Gas consumption	LPG: 149 t LNG: 656 t City gas: 1,568 thousand m ³		Total waste emissions	8,549 t Total amount of waste recycled: 7,093 t Amount of landfill 385.2 t
Fuel consumption	Heavy oil: 58 kL Kerosene oil: 32 kL Diesel oil: 181 kL			Final landfill disposal rate
Water consumption	1,278 thousand m ³			
Packaging materials	1,375 t			

* The above data are based on the data from 37 Group companies in Japan and overseas.
* The volume of packaging materials is based on the data from 16 Group companies in Japan and overseas.

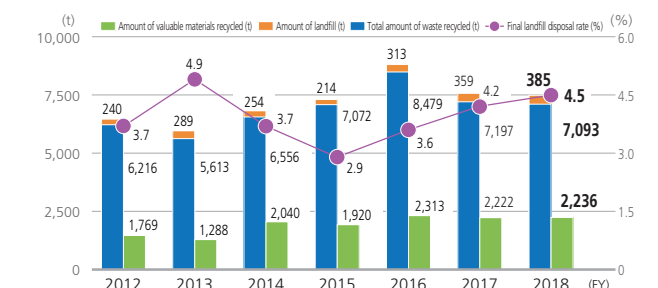
CO₂ emissions



Water consumption



Waste emissions



Environment

Major initiatives

ECO-SHOCK series

For many years, ULVAC, Inc. has offered products that contribute to energy conservation. We released ECO-SHOCK ES10 in 2002 and ECO-SHOCK ES4A in 2015 and cumulative sales of these dry vacuum pump attachments reached 1,500 units. Since dry vacuum pumps consume large amounts of electricity on production lines that use vacuum pressure, reducing energy consumption was a big challenge when we first introduced ECO-SHOCK. The main feature of ECO-SHOCK accessories is that connecting them to dry vacuum pumps makes it possible to substantially reduce energy consumption. We released the LS series of dry vacuum pumps with built-in ECO-SHOCK technology in 2018 and sales of these products, which offer both high pumping speed and low power consumption, continue to rise.



ECO-SHOCK ES4A

Receipt of an incentive award for environmental safety from the governor of Gyeonggi Province, South Korea

On June 19, 2019, Pure Surface Technology, Ltd. received an incentive award for environmental safety from the governor of Gyeonggi Province, South Korea.

Due to the distinctive characteristics of Pure Surface Technology's business of surface processing of parts for film deposition equipment, environmental regulations have an important bearing on its operations. On the recommendation of the chairman of the Gyeonggi Province Society of Environmental Engineers, the company received the award in recognition of its major contributions to environmental protection, including improving air pollution prevention facilities along with atmospheric pollutant reduction activities as well as improving wastewater treatment facilities in tandem with water pollutant reduction activities.



Receiving a certificate of commendation

Management of chemical substances

Chemical substances are highly versatile and functional and are widely applied in everyday life. On the other hand, some substances are harmful to the human body and the environment. ULVAC uses a wide variety of chemical substances in the parts and materials composing products (metals, resins, coatings, etc.), manufacturing processes (organic solvents, lubricants, and other substances used in cleaning, etc.), and technology development (chemicals, gases, etc.). We appropriately manage these substances and strive to prevent accidents and environmental pollution.

Introduction of energy-saving products and activities to visualize electric power consumption

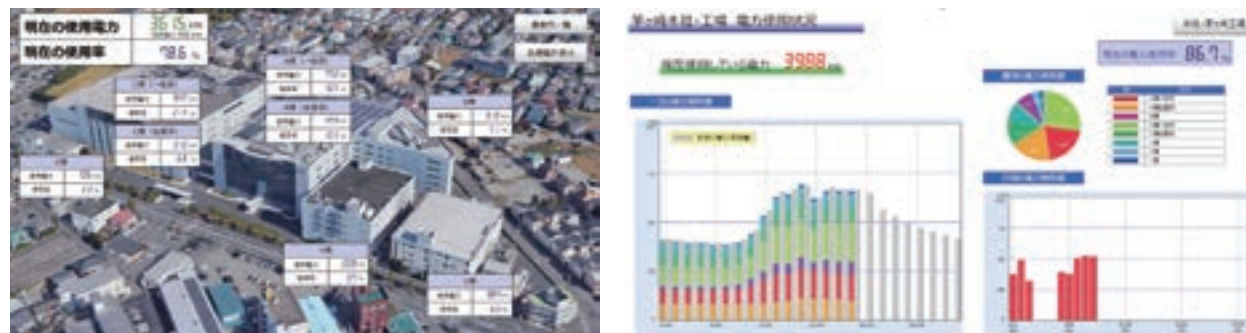
ULVAC, Inc. has pursued various initiatives to reduce electricity consumption. Specifically, while giving due consideration to the impact on business activities and employees, we have increased the space between lights, converted cleanroom lighting to LED fixtures, standardized air-conditioning temperature settings, curtailed use of cleanroom air conditioning, and improved cooling and heating efficiency through thermal insulation measures and have worked to raise employee awareness of energy conservation.

In the previous fiscal year, we cut electric power consumption by 2.45% year on year by reducing consumption 343 MWh through conversion of lighting to LED fixtures and 183 MWh by updating office air-conditioning equipment.

We have set a target of a 1% annual reduction in energy intensity* beginning in the current fiscal year and will eradicate waste by such means as reinforcing the system we have instituted requiring that an application be submitted for permission to operate equipment during three or more consecutive business holidays.

At the Chigasaki Head Office/Plant, we visualize energy use for the entire plant and for each unit of equipment and, as a further measure, ensure there is no wasteful operation and promote energy saving in the operation of equipment by ascertaining in real time the status of operation of selected plant equipment on a trial basis. In this way, we review our methods of equipment operation and engage in activities that lead to energy savings in equipment use and the development of energy-saving products. Going forward, we will promote group-wide deployment and integration of these activities.

*Energy intensity: Energy consumption per unit of output (calculated as electric power consumption divided by sales)



Electric power visualization system screen

Social Contribution Activities

The ULVAC Group will continue to contribute to local communities and the global community by effectively utilizing its technologies and human resources to help resolve various social issues.

Japan Chigasaki Space Lesson Vacuum experiments

In March 2019, Chigasaki Space Lesson, an event organized by the Chigasaki Education Committee (Kanagawa Prefecture) to foster dreams and aspirations about space among children, was held at ULVAC, Inc. Chigasaki Head Office/Plant. Since the previously held space lesson was so popular that a draw was held to select from among the many applicants, this time the capacity was increased, and a total of 116 primary and junior high school students and their parents participated. The lesson consisted of various vacuum experiments and a plant tour, and the children's eyes sparkled at the sight of the strange phenomena demonstrated in the experiments. In addition to simply showing the experiments, the number of hands-on experiments was increased this year, and the smiling faces of delighted children when they accomplished a task made a powerful impression. We will continue to create opportunities for children to enjoy studying science through exposure to vacuum and peripheral technologies.



China Donation of a liquid nitrogen generator to Chengdu Research Base of Giant Panda Breeding

ULVAC has donated a liquid nitrogen generator capable of generating liquid nitrogen from the surrounding air to Chengdu Research Base of Giant Panda Breeding in China. The director of the facility expressed his gratitude, indicating the intention to use the liquid nitrogen generator for preserving panda sperm, eggs, stems cells, and other materials as well as for protecting and breeding rare animals other than pandas.

The liquid nitrogen generator is an essential apparatus for the facility, where demand for liquid nitrogen is expected to further increase in the future. ULVAC will continue to utilize vacuum and cryogenic technologies for the purpose of contributing to causes including the protection of rare animals around the world.



Japan Participation in Kanogawa river cleanup activity

More than 100 employees of nearby companies and local residents participated in a river cleanup activity organized by the Kanogawa Water System Water Quality Conservation Committee (Shizuoka Prefecture). Participants from ULVAC, Inc. spearheaded by new employees, engaged in cleanup activities near Goryu Falls.

Shizuoka Prefecture is undertaking plastic waste reduction through 6R activities, adding refuse, return, and recover to the 3Rs of reduce, reuse, and recycle. River cleanups are a form of recovery activity. ULVAC, Inc. will continue helping preserve nature in Shizuoka through river cleanup activities.



Taiwan Donation of firefighting equipment to Tainan City Government Fire Bureau Nanke Station

The Tainan Plant (Taiwan) holds a fire drill once every six months, receiving tremendous cooperation from the Tainan City Government Fire Bureau.

To show its appreciation, in May 2019 the Tainan Plant donated firefighting equipment to the Fire Bureau Nanke Station, which covers the Southern Taiwan Science Park, where the plant is located.

The Tainan Plant will continue to deepen ties and cooperation with the local community and engage in activities contributing to disaster prevention and safety.



11-year Financial Data

Financial Data

		FY2008 2009.6	FY2009 2010.6	FY2010 2011.6	FY2011 2012.6	FY2012 2013.6	FY2013 2014.6	FY2014 2015.6	FY2015 2016.6	FY2016 2017.6	FY2017 2018.6	FY2018 2019.6
Key financial results												
Net sales ^{*1}	Millions of yen	223,825	221,804	232,040	196,804	163,351	173,878	179,174	192,437	231,831	249,271	220,721
Operating profit (loss)	Millions of yen	3,483	4,809	1,850	(6,384)	6,115	11,996	11,132	17,864	29,468	35,351	23,828
Ordinary profit (loss)	Millions of yen	835	4,942	1,441	(6,497)	6,264	13,384	12,475	18,373	29,716	36,907	25,575
Net income (loss) ^{*2}	Millions of yen	811	2,138	(8,706)	(49,984)	(3,807)	11,538	8,874	16,698	24,469	35,904	18,665
Net assets	Millions of yen	90,158	102,504	92,023	41,187	59,436	72,238	84,928	78,032	104,917	154,069	157,588
Total assets	Millions of yen	318,076	313,784	313,616	249,651	243,289	230,791	242,348	219,561	245,306	297,418	282,302
Cash flows from operating activities	Millions of yen	(31,891)	44,312	17,730	(8,492)	22,357	32,213	21,992	23,708	37,818	19,086	18,282
Cash flows from investing activities	Millions of yen	(14,051)	(10,876)	(14,833)	(11,328)	(4,506)	(3,023)	(4,055)	(5,593)	(13,713)	(1,564)	(9,448)
Cash flows from financing activities	Millions of yen	51,325	(23,418)	2,159	12,616	(3,619)	(16,881)	(14,895)	(32,448)	(22,580)	(10,734)	(5,844)
Cash and cash equivalents at end of period	Millions of yen	21,827	29,721	35,722	28,180	44,204	57,012	61,670	44,862	47,555	54,348	55,859
Key performance indicators												
Net assets per share	Yen	1,961.08	1,992.06	1,787.51	751.00	806.38	1,040.23	1,398.66	1,477.29	2,002.90	2,994.12	3,062.39
Net income per share	Yen	18.90	46.60	(176.43)	(1,012.94)	(87.79)	223.18	172.73	338.37	496.35	728.68	378.78
Equity ratio	%	26.4	31.3	28.1	14.8	22.7	29.2	32.8	33.2	40.2	49.6	53.5
ROE (return on equity) ^{*3}	%	0.9	2.3	—	—	—	18.8	12.1	21.9	28.5	29.2	12.5
Ratio of ordinary profit to total assets ^{*4}	%	0.3	1.6	0.5	—	2.5	5.6	5.3	8.0	12.8	13.6	8.8
Price-earnings ratio ^{*5}	Times	146.79	37.34	—	—	—	9.66	10.91	9.21	10.88	5.82	9.02
Other indicators												
Capital expenditure	Billions of yen	19.6	11.1	17.8	12.7	6.8	6.2	6.7	7.0	8.3	12.9	12.9
R&D expenses	Billions of yen	8.3	8.0	8.3	7.1	5.0	5.2	5.6	6.3	6.9	8.3	9.2
Interest-bearing debt	Billions of yen	136.1	100.2	105.1	120.2	106.1	89.6	82.6	62.7	42.7	35.7	35.6
Dividends	Yen	21.0	21.0	—	—	—	—	10.0	30.0	50.0	95.0	105.0
Dividend payout ratio	%	111.1	45.1	—	—	—	—	5.8	8.9	10.1	13.1	27.7
Number of employees	Persons	6,871	7,169	7,878	6,981	6,579	5,971	5,904	5,886	6,072	6,439	6,424

Notes:

1. Net sales do not include consumption taxes.

2. The Company applies the "Revised Accounting Standard for Business Combinations" (ASBJ Statement No. 21, September 13, 2013) and "net income attributable to owners of parent" is presented instead of "net income."

3. ROE (return on equity) figures for FY2010 to FY2012 are not presented because the Company recorded a net loss for these periods.

4. The ratio of ordinary profit to total assets for FY2011 is not presented because the Company recorded an ordinary loss for FY2011.

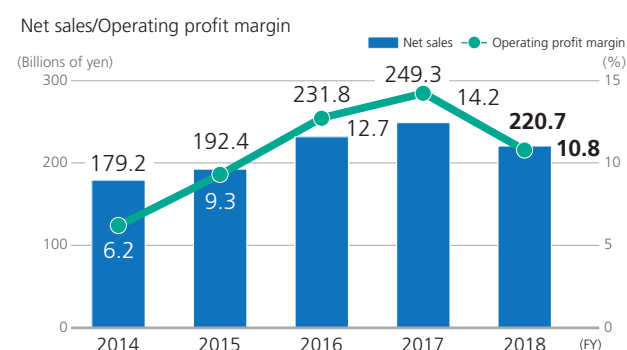
5. Price-earnings ratios for FY2010 to FY2012 are not presented because the Company recorded a net loss for these periods.

Business Results: Review of Operations for Fiscal 2018 and Outlook

Business Results for Fiscal 2018

In the electronics market in which the ULVAC Group operates, semiconductor memory manufacturers continued capital expenditures in response to expanding memory demand fueled mainly by greater demand for servers for data center applications. However, semiconductor memory manufacturers have started to postpone new capital expenditures in view of the slowdown of demand in the near term. Nevertheless, investment related to the emergence of the smart society is expected to gain momentum over the medium to long term. On the other hand, in the flat panel display (FPD) sector, in line with the trend toward larger, higher-definition panels for TVs, capital expenditures for manufacturing large LCD panels for TVs continued, mainly in China. Whereas capital expenditures for OLED panels for smartphones was curtailed in South Korea, it continued unabated in other regions.

In these circumstances, for the fiscal year ended June 30, 2019 (fiscal 2018), orders received decreased ¥24,433 million or 10.1% year on year to ¥218,547 million and net sales decreased ¥28,550 million or 11.5% to ¥220,721 million. On the profit front, operating profit decreased ¥11,523 million or 32.6% to ¥23,828 million, ordinary profit decreased ¥11,332 million or 30.7% to ¥25,575 million, and net income decreased ¥17,239 million or 48.0% to ¥18,665 million.



Review of Operations by Business Segment

Vacuum Equipment Business

For the vacuum equipment business, orders received amounted to ¥185,077 million, orders back-log was ¥90,217 million, net sales were ¥187,698 million, and operating profit amounted to ¥20,819 million.

FPD and PV production equipment

Orders received for and net sales of FPD and PV production equipment were below the level of the previous fiscal year despite recording of orders received, mainly from customers in China, for large LCD production equipment for TVs and OLED production equipment for smartphones.

Semiconductor and electronic device production equipment

Both orders received and net sales were below the level of the previous fiscal year because, for semiconductor production equipment, demand for sputtering equipment and the natural oxidized film removing system for NAND flash memory, DRAM, and next-generation non-volatile memory was affected by the current slowdown of memory-related investment. For electronic device production equipment, demand for production equipment for high-performance devices applied in mobile equipment and for power semiconductors was robust.

Components

Both orders received and net sales exceeded those for the previous fiscal year because of strong demand for cryopumps for mounting on OLED production equipment, as well as for vacuum pumps and measuring equipment for the FPD, semiconductor, and electronic device industries and for the automotive-related industry.

Industrial equipment

Net sales remained at the same level as in the previous fiscal year, centering on vacuum heat treatment furnaces for the production of automotive components and leak testers. On the other hand, orders received were below the level of the previous fiscal year, partly because of the postponement of investment in the manufacturing of high-performance magnets in China.

Vacuum Application Business

For the vacuum application business, orders received amounted to ¥33,471 million, orders back-log was ¥6,182 million, net sales were ¥33,023 million, and operating profit amounted to ¥2,986 million.

Materials

Both orders received and net sales were below the level of the previous fiscal year, under the impact of factors such as reduced equipment operation in South Korea, despite recording of orders received for and sales of sputtering target materials for LCDs and other items.

Others

Orders received and net sales were higher than those of the previous fiscal year owing to firm demand for mask blanks, reflecting an increase in demand for high-definition, high-performance display panels and semiconductors for in-vehicle and industrial applications, with the added contribution of demand for surface analyzers.

Financial Position at the End of Fiscal 2018

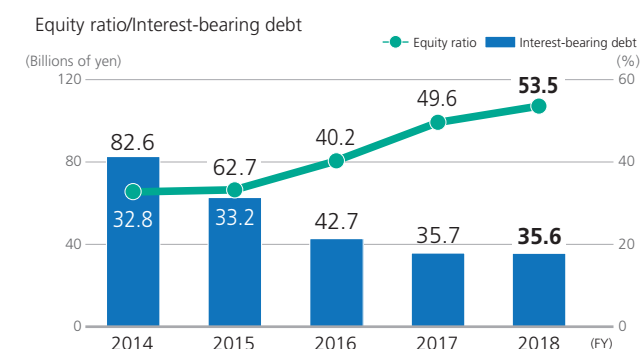
Total assets at the end of fiscal 2018 amounted to ¥282,302 million, having decreased ¥15,116 million compared with the figure at the previous fiscal year-end. The main factors were a ¥11,764 million decrease in investment securities and a ¥10,040 million decrease in notes and accounts receivable, trade, whereas deferred tax assets increased ¥2,865 million.

Total liabilities amounted to ¥124,714 million, having decreased ¥18,634 million compared with the figure at the previous fiscal year-end. The main factors were a ¥14,818 million decrease in notes and accounts payable, trade and a ¥6,624 million decrease in short-term loans payable, whereas long-term loans payable increased ¥6,519 million.

Net assets amounted to ¥157,588 million, having increased ¥3,519 million compared with the figure at the previous fiscal year-end. The main factor was a ¥13,747 million increase in retained earnings, whereas accumulated other comprehensive income decreased ¥10,385 million.

As a result, the equity ratio at the end of fiscal 2018 was 53.5%.

Effective from the beginning of fiscal 2018, the Company has applied "Partial Amendments to Accounting Standard for Tax Effect Accounting" (ASBJ Statement No. 28, February 16, 2018) and other standards. Comparison of the financial position uses figures at the previous fiscal year-end after the retrospective application of the said accounting standards.



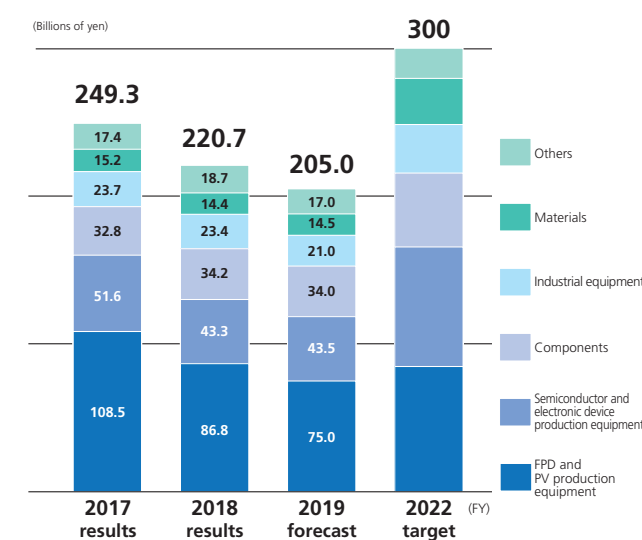
Outlook

For fiscal 2019, the final year of the current mid-term management plan, we forecast net sales of ¥205.0 billion (¥60.0 billion lower than the target of the mid-term management plan) and operating profit of ¥22.5 billion (¥15.5 billion lower than the target of the mid-term management plan) owing to delays in the resumption of electronics-related capital expenditures. However, targets set for the fiscal year ending June 30, 2023 (fiscal 2022), four years from now, remain unchanged: net sales of ¥300 billion and operating profit margin of 16%.

Diverse industries are becoming increasingly electronics-oriented in line with the progress of the smart society, with 5G, IoT, and AI to the fore, and markets for semiconductor memory and logic, new non-volatile memory, sensors, communication devices, power devices, lithium-ion batteries, electronic packaging, OLED displays, etc. are expected to grow greatly along with technological innovation in the medium to long term.

By supporting technological innovation and expansion of these electronics markets with thin-film processing technology and materials development capabilities, ULVAC aims to achieve the next round of growth.

Forecast of net sales by business segment



Consolidated Financial Statements

Consolidated Balance Sheets

(Millions of yen)

	FY2017 (As of June 30, 2018)	FY2018 (As of June 30, 2019)
Assets		
Current assets		
Cash on hand and in banks	57,074	58,557
Notes and accounts receivable, trade	87,276	77,236
Merchandise and finished goods	4,615	3,937
Work in process	23,618	24,033
Raw materials and supplies	10,847	11,803
Other	9,509	6,840
Allowance for doubtful accounts	(914)	(444)
Total current assets	192,026	181,962
Non-current assets		
Property, plant and equipment		
Buildings and structures	80,982	80,546
Accumulated depreciation	(49,168)	(50,595)
Buildings and structures, net	31,814	29,951
Machinery, equipment and vehicles	69,543	71,500
Accumulated depreciation	(53,161)	(54,042)
Machinery, equipment and vehicles, net	16,382	17,459
Tools, furniture and fixtures	14,738	14,338
Accumulated depreciation	(12,899)	(12,358)
Tools, furniture and fixtures, net	1,839	1,981
Land	8,624	8,357
Leased assets	1,872	1,813
Accumulated depreciation	(1,142)	(1,099)
Leased assets, net	731	715
Construction in progress	4,907	7,226
Total property, plant and equipment	64,297	65,687
Intangible assets		
Leased assets	81	55
Software	844	1,030
Other	2,529	2,361
Total intangible assets	3,454	3,446
Investments and other assets		
Investment securities	25,562	13,797
Deferred tax assets	7,315	10,180
Other	6,812	11,690
Allowance for doubtful accounts	(2,048)	(4,462)
Total investments and other assets	37,641	31,207
Total non-current assets	105,392	100,340
Total assets	297,418	282,302

(Millions of yen)

	FY2017 (As of June 30, 2018)	FY2018 (As of June 30, 2019)
Liabilities		
Current liabilities		
Notes and accounts payable, trade	55,566	40,748
Short-term loans payable	21,539	14,915
Lease obligations	300	306
Income taxes payable	4,534	2,802
Advances received	16,739	15,849
Accrued employees' bonuses	3,185	3,625
Accrued directors' bonuses	512	485
Accrued warranty costs	1,742	1,632
Provision for loss on order received	1,074	1,099
Other	13,637	13,041
Total current liabilities	118,829	94,501
Long-term liabilities		
Long-term loans payable	14,150	20,668
Lease obligations	607	551
Deferred tax liabilities	22	16
Net defined benefit liability	8,370	7,846
Accrued directors' retirement benefits	272	75
Provision for board benefit trust	134	145
Asset retirement obligations	395	399
Other	568	512
Total long-term liabilities	24,520	30,213
Total liabilities	143,348	124,714
Net Assets		
Shareholders' equity		
Capital stock	20,873	20,873
Capital surplus	3,912	3,912
Retained earnings	107,238	120,985
Treasury shares	(266)	(247)
Total shareholders' equity	131,756	145,522
Accumulated other comprehensive income		
Valuation difference on available-for-sale securities	14,950	6,652
Foreign currency translation adjustment	2,579	266
Remeasurements of defined benefit plans	(1,753)	(1,528)
Total accumulated other comprehensive income	15,775	5,390
Non-controlling interests	6,538	6,676
Total net assets	154,069	157,588
Total liabilities and net assets	297,418	282,302

Consolidated Statements of Income

(Millions of yen)

	FY2017 (July 1, 2017–June 30, 2018)	FY2018 (July 1, 2018–June 30, 2019)
Net sales	249,271	220,721
Cost of sales	176,163	155,845
Gross profit	73,108	64,876
Selling, general and administrative expenses		
Selling expenses	15,703	18,217
General and administrative expenses	22,054	22,830
Total selling, general and administrative expenses	37,757	41,047
Operating profit	35,351	23,828
Non-operating income		
Interest income	157	183
Dividend income	470	687
Rent income	300	296
Insurance and dividends income	463	610
Share of profit of entities accounted for using equity method	426	346
Other	816	694
Total non-operating income	2,631	2,816
Non-operating expenses		
Interest expenses	349	293
Commission for syndicated loans	—	139
Other	727	637
Total non-operating expenses	1,076	1,069
Ordinary profit	36,907	25,575
Extraordinary income		
Gain on sales of investment securities	2,002	1,710
Gain on change in equity	—	303
Gain on sales of non-current assets	—	75
Total extraordinary income	2,002	2,088
Extraordinary losses		
Loss on retirement of non-current assets	382	156
Impairment loss	—	331
Other	—	27
Total extraordinary losses	382	515
Income before income taxes	38,527	27,148
Current income taxes	7,309	6,709
Deferred income taxes	(5,937)	451
Total income taxes	1,372	7,160
Net income	37,155	19,988
Net income attributable to non-controlling interests	1,250	1,323
Net income attributable to owners of parent	35,904	18,665

Consolidated Statements of Comprehensive Income

(Millions of yen)

	FY2017 (July 1, 2017–June 30, 2018)	FY2018 (July 1, 2018–June 30, 2019)
Net income	37,155	19,988
Other comprehensive income		
Valuation difference on available-for-sale securities	14,456	(8,298)
Foreign currency translation adjustment	113	(2,773)
Remeasurements of defined benefit plans, net of tax	845	226
Share of other comprehensive income of entities accounted for using equity method	2	190
Total other comprehensive income	15,416	(10,655)
Comprehensive income	52,570	9,334
Comprehensive income attributable to:		
Owners of parent	51,307	8,280
Non-controlling interests	1,263	1,054

Consolidated Statements of Cash Flows

(Millions of yen)

	FY2017 (July 1, 2017–June 30, 2018)	FY2018 (July 1, 2018–June 30, 2019)
Cash flows from operating activities		
Income before income taxes	38,527	27,148
Depreciation	6,541	6,938
Impairment loss	—	331
Increase (decrease) in allowance for doubtful accounts	97	2,048
Increase (decrease) in accrued employees' bonuses	473	505
Increase (decrease) in net defined benefit liability	182	(100)
Increase (decrease) in accrued directors' retirement benefits	(63)	(197)
Increase (decrease) in provision for board benefit trust	60	11
Increase (decrease) in accrued warranty costs	(321)	(82)
Increase (decrease) in provision for loss on orders received	289	27
Interest and dividend income	(628)	(870)
Interest expenses	349	293
Subsidy income	(96)	(74)
Loss (gain) on sales of investment securities	(2,002)	(1,710)
Loss (gain) on sales of non-current assets	—	(75)
Share of (profit) loss of entities accounted for using equity method	(426)	(346)
Loss (gain) on change in equity	—	(303)
Decrease (increase) in notes and accounts receivable - trade	(16,748)	7,508
Decrease (increase) in inventories	(9,878)	(3,185)
Increase (decrease) in notes and accounts payable - trade	6,789	(13,913)
Increase (decrease) in advances received	(123)	(328)
Increase (decrease) in accrued consumption taxes	(241)	677
Other	1,230	1,457
Subtotal	24,011	25,761
Interest and dividend income received	720	1,222
Interest expenses paid	(350)	(270)
Income taxes paid	(5,295)	(8,432)
Net cash provided by (used in) operating activities	19,086	18,282
Cash flows from investing activities		
Payments into time deposits	(12,755)	(5,589)
Proceeds from withdrawal of time deposits	18,873	5,602
Purchase of property, plant and equipment and intangible assets	(9,869)	(11,338)
Proceeds from sales of property, plant and equipment and intangible assets	19	231
Proceeds from sales of investment securities	2,171	1,779
Payments for investments in capital of subsidiaries and associates	(290)	—
Proceeds from subsidy income	237	216
Other	48	(348)
Net cash provided by (used in) investing activities	(1,564)	(9,448)
Cash flows from financing activities		
Net increase (decrease) in short-term loans payable	(5,157)	(7,288)
Proceeds from long-term loans payable	9,400	15,100
Repayments of long-term loans payable	(11,282)	(7,929)
Repayments of lease obligations	(344)	(358)
Cash dividends paid	(2,464)	(4,683)
Purchase of treasury shares	(0)	(0)
Dividends paid to non-controlling interests	(886)	(687)
Net cash provided by (used in) financing activities	(10,734)	(5,844)
Effect of exchange rate change on cash and cash equivalents	4	(908)
Net increase (decrease) in cash and cash equivalents	6,793	2,082
Cash and cash equivalents at beginning of period	47,555	54,348
Decrease in cash and cash equivalents resulting from exclusion of subsidiaries from consolidation	—	(571)
Cash and cash equivalents at end of period	54,348	55,859

Company Data/Stock Information

Company Profile As of June 30, 2019

Name:	ULVAC, Inc.
Trademark:	ULVAC
Head office:	2500 Hagisono, Chigasaki, Kanagawa Prefecture, Japan
Established:	August 23, 1952
Capital:	¥20,873,042,500
Number of employees:	Non-consolidated 1,335 Consolidated 6,424

Directors, Auditors and Executive Officers As of September 27, 2019

President and Chief Executive Officer	Setsuo Iwashita	Managing Executive Officer	Shigemitsu Sato
Director and Executive Vice President	Mitsuru Motoyoshi	Managing Executive Officer	Masahiko Ishiguro
Director and Senior Managing Executive Officer	Masasuke Matsudai	Senior Executive Officer	Dr. Kazuya Saito
Director and Managing Executive Officer	Dr. Choong Ryul Paik	Executive Officer	Yu Jer Tsai
Director and Executive Officer	Sadao Aoki	Executive Officer	Tomoyasu Kondo
External Director	Akira Mihayashi	Executive Officer	Tetsuya Shimada
External Director	Norio Uchida	Executive Officer	Seigou Kinugawa
External Director	Dr. Kozo Ishida	Executive Officer	Zheng Ming Zeng
External Director	Yoshimi Nakajima	Executive Officer	Dr. Koukou Suu
		Auditor	Shinji Takahashi
		Auditor	Makoto Ito
		Auditor	Mitsuru Yahagi
		External Auditor	Senshu Asada
		External Auditor	Isao Utsunomiya

Stock Information As of June 30, 2019

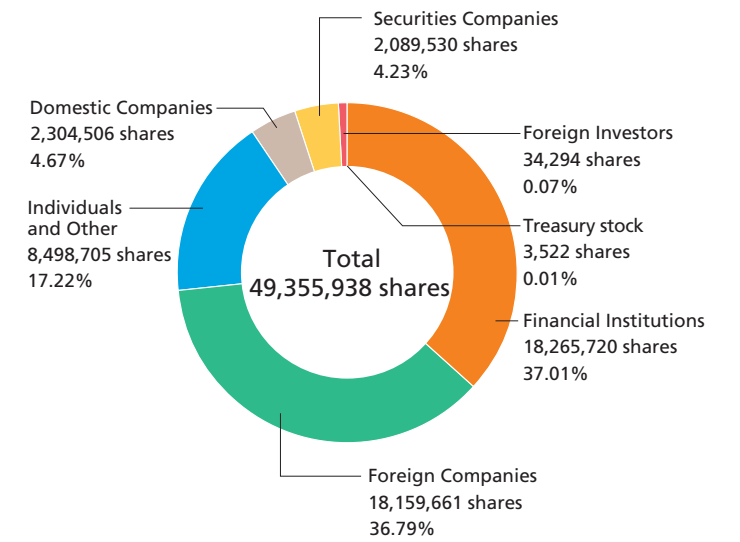
Total number of shares authorized	100,000,000
Total number of shares issued	49,355,938
Total number of shareholders	17,166

Major Shareholders

Shareholder's name	Number of shares (Thousands)	Shareholding ratio (%)
Nippon Life Insurance Company	3,242	6.57
Japan Trustee Services Bank, Ltd. (Trust account)	3,087	6.25
TAIYO FUND, L.P.	2,546	5.16
JP MORGAN CHASE BANK 385151	2,380	4.82
Mizuho Bank, Ltd.	1,916	3.88
Sumitomo Mitsui Banking Corporation	1,864	3.78
TAIYO HANEI FUND, L.P.	1,639	3.32
The Master Trust Bank of Japan, Ltd. (Trust account)	1,452	2.94
SMBC Nikko Securities Inc.	1,232	2.50
STATE STREET BANK AND TRUST COMPANY 505227	1,039	2.11

Note: Treasury stock (3,522 shares) is excluded from the calculation of shareholding ratios.

Number of Shares Held by Shareholder Type



ULVAC Group Companies As of September 30, 2019

- Bases of ULVAC, Inc.
- Bases of ULVAC Group companies in Japan/overseas
- R&D base
- Sales and service bases

