

ULVAC's Value Creation <Source of Value>

Research & Development

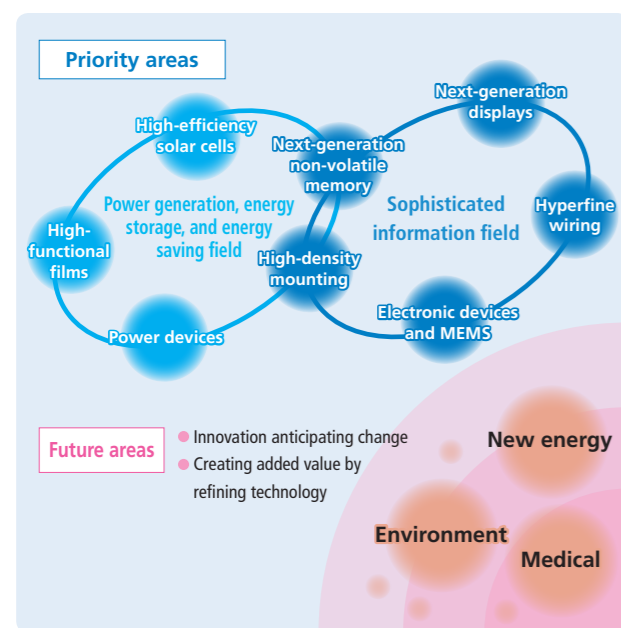
Ongoing value creation from a medium- to long-term perspective

ULVAC has long been a source of vacuum-technology-based products and materials indispensable for wide-ranging industries. With vacuum technology at the heart of everything we do, 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.

Eight priority areas

—Toward affluent and safe lifestyles

We have designated eight priority areas for development. Furthermore, we are pursuing development and enhancement in each area through the cooperation of the marketing manager (CPM), design and cost reduction manager (CDM) and the technology manager (CTM).

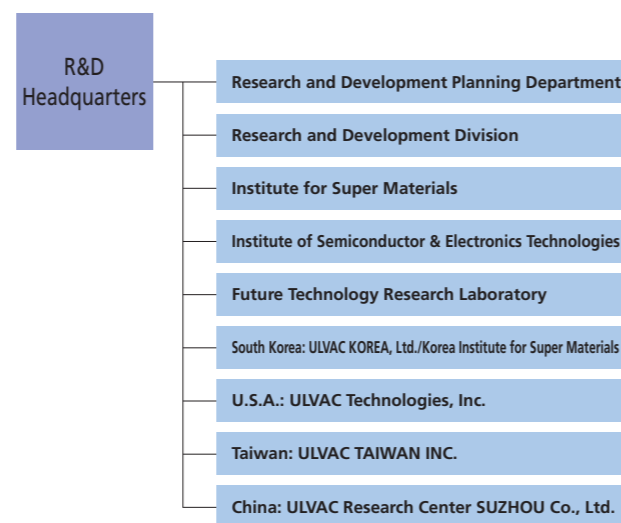


R&D Organizations

ULVAC has a global R&D structure in place. Through integration of the Group's R&D organizations, we are accelerating R&D while endeavoring to create differentiated technologies by capitalizing on technological innovation and fusion of technologies.

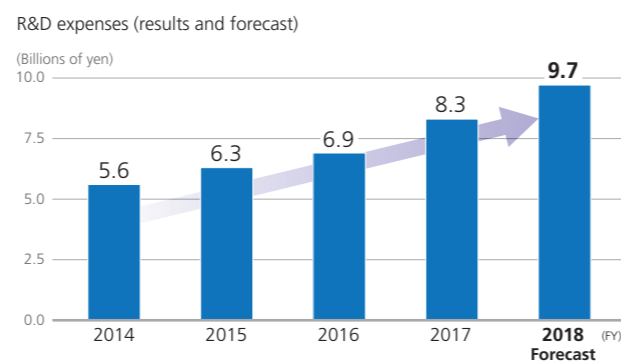
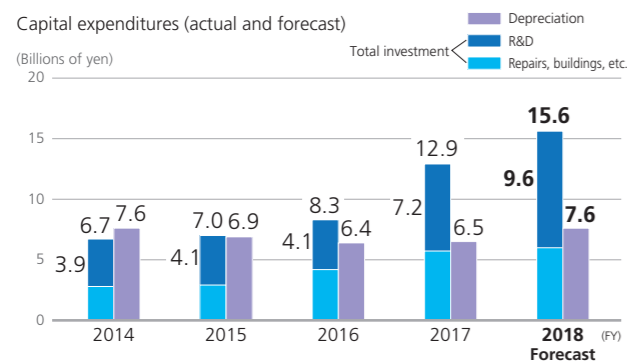
Furthermore, while conducting product development to ensure short- to medium-term profits through development and business operations in our designated priority areas, the Future Technology Research Laboratory is sowing the seeds for the long term, with a time horizon of 10 to 20 years.

ULVAC's R&D Structure (as of July 2018)



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

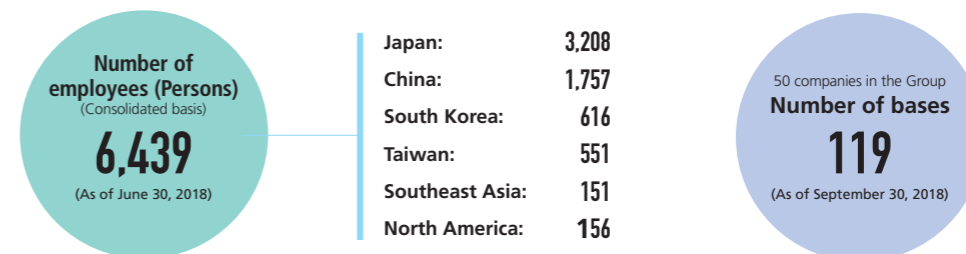
R&D investments (capital expenditures for R&D and R&D expenses) are expected to continue increasing. Active development is expected to lead to future growth, along with efforts in next-generation displays/ logic, next generation non-volatile memory.



Global Network

Sales & service networks offering solutions to support industrial development worldwide

Deploying the capabilities of the Group's 50 companies, we have established sales & service networks optimized for each region, such as Japan, the United States, Europe and Asia. Vacuum technology, one of the keys for many other cutting-edge technologies, will be increasingly required for a wide range of industries and growth fields in the future.

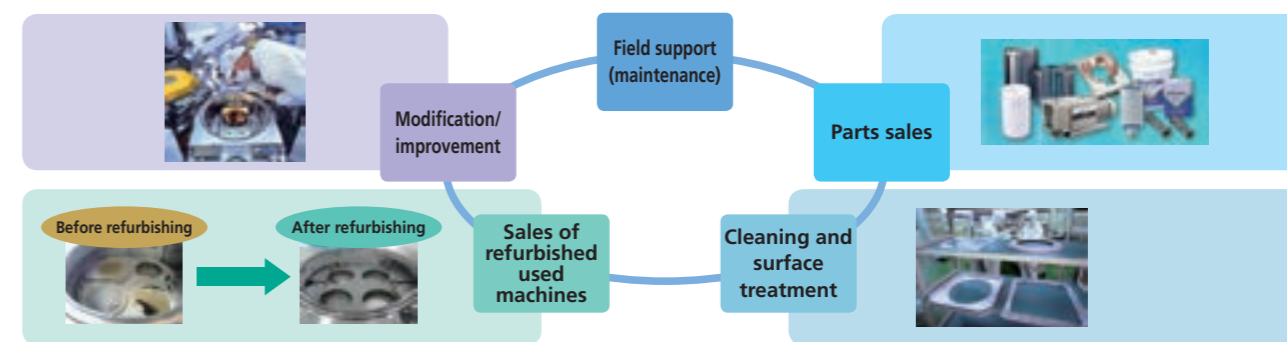


Customer Support

ULVAC CS Solutions pool the Group's knowledge

We are pursuing outstanding service by pooling the knowledge we have cultivated, including original technologies and service knowhow.

Our customer support network (71 bases in 14 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.



Equipment maintenance service

Emphasizing close communication with our customers, we offer timely service.

- Global CIP (continuous improvement program) This service informs customers of effective usage techniques while also offering improvements in yield rate and productivity over many generations for the equipment they are already using.
- Factory outsourcing (FOS)

We provide support by contract or the dispatch or transfer of personnel for the operation and maintenance of equipment and facilities, as well as for the ordering of components, selection of equipment, and process development.

Component maintenance

- Rejuvenation, precision cleaning, and resource recovery We aim for overall cost reductions through extension of component life and the cleaning cycle, and recovery of valuable materials, etc. Based on our extensive knowledge of vacuum equipment as a whole, we propose the optimal surface treatment and cleaning for your needs.

Component maintenance

- Pump maintenance We provide maintenance of components such as vacuum pumps.
- JCSS vacuum gauge calibration service ULVAC is an MRA/JCSS* accredited calibration laboratory in the pressure (vacuum gauges) category.

*JCSS (Japan Calibration Service System): Calibration laboratory accreditation system under the Measurement Act
*International MRA (mutual recognition agreement)

Components and consumables

We achieve high-quality, swift, and reliable delivery through in-house manufacturing of components.

Analysis service

We conduct an analysis service using the ULVAC Group's analysis and evaluation equipment.

Sale and purchase of pre-owned equipment

We sell, purchase, refurbish, relocate, import and export pre-owned products, ranging from components to production equipment.

Training service

We provide training services for ULVAC products (equipment, vacuum pumps and components).