

Quality

Genuine value that creates excitement and builds trust

Seiko's Statement of Purpose says, "As a company trusted by society, we will constantly pursue innovation, inspiring people everywhere, and creating a future full of smiles." The key to realizing this is quality. Seiko's quality is underpinned by a sincere commitment to meeting the expectations of all stakeholders and a meticulous attention to detail by those who work in the Group.

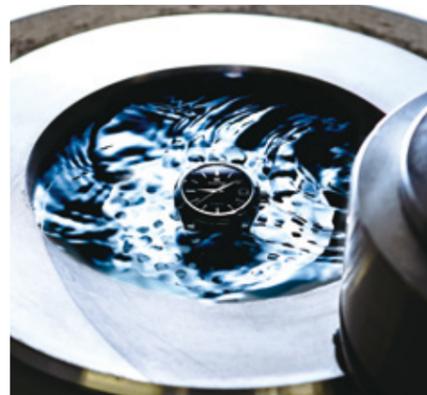
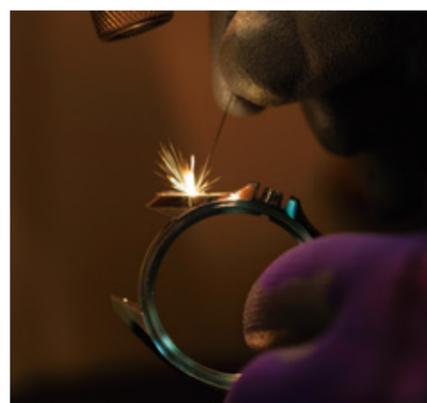
In order to earn our customers' trust and continue to provide them with the highest quality, we will continue to focus on things that are unique to Seiko, such as our dedication to inspecting our products according to extremely strict standards, our determination to provide the best service with the best products, and our commitment to supporting after-sales service to ensure long-term use.



Maintaining Quality

One of the ways in which Seiko expresses its dedication to quality is through its watch maintenance service. SEIKO TIME LABS CO., LTD., which is in charge of the Group's watch maintenance business, aims to restore the watches it receives for maintenance to the same condition as when they were purchased. Unlike brand new watches in stores, the watches at SEIKO TIME LABS CO., LTD. have unique histories; they have been worn and trusted by their owners. We respect the products themselves, and we have a responsibility to the customers who bought them. Thus, we entrust each watch to highly skilled repair technicians who will carefully restore them using the most advanced equipment.

For example, when we repair a large scratch on a watch case, we do not simply polish it, but instead add a hair-thin wire (0.1 mm to 0.2 mm in diameter) over the scratch and weld it with a high-temperature pulsed laser to fill in the cut, then we polish the finished piece to restore it as close as possible to its original condition. In addition, a binocular microscope equipped with a sophisticated camera system displays the maintenance process on a remote screen, allowing us not only to repair the watch, but at the same time to have other experts confirm that it was done correctly, and use the video feed to help teach other technicians who can learn this high level of skills and know-how even if they are far from our workshop. Furthermore, watches with a barometric pressure of five or more are subjected to the same level of inspection as at the time of manufacture, including a severe water resistance test, before they are released to the customer. We believe that performing this kind of dedicated, advanced maintenance helps to make our watches a source of pride for our customers and allows them to keep using their prized watches for many years to come.



Seiko's High-Precision Quality Supporting Social Infrastructure

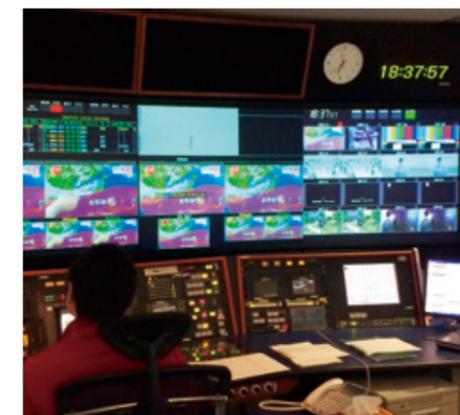
High-Precision Time Synchronization Time Server

With the evolution of IoT, a variety of devices and different types of data, such as video, music, voice, photos, and text, are becoming connected via the Internet. Needless to say, synchronized timing plays an important role when this data is connected. Exact time codes are essential to accurately link compilations of data. With the advances in data transfer from 3G to 4G to 5G, accurate time synchronization has become increasingly important. Seiko's high-precision time synchronization servers deliver extremely accurate signals to all devices on a network to ensure absolutely reliable time synchronization. This technology is used in fields ranging from financial and medical to public transportation and telecommunications, including data centers. It has become an indispensable part of our daily lives. In tomorrow's rapidly evolving digital world, Seiko's insistence on quality will support the infrastructure of Society 5.0.



Standard Time Devices for Broadcasting Stations

For more than 60 years, Seiko has been providing broadcast stations with synchronized clocks, which is essential for smooth broadcasting. Seiko's broadcast clocks not only show the time accurately, but also automatically synchronize all secondary clocks in a station with their parent clock, thus facilitating the activities of this industry where neither interruptions nor even the slightest deviation from the norm can be tolerated. We will continue to deepen our trust relationships with our customers by combining reliable quality with dependable maintenance. Constantly providing accurate time and maintaining those systems is one way we fulfill our role in supporting the social infrastructure.



Pursuing the Future of Quality

Seiko's approach to making a quality timepiece goes far beyond adding new functions. Our goal is to provide customers with an emotional response to our products, not only taking pleasure in their accuracy, but also creating joy through our extensive customer service and maintenance services that exceed people's expectations. In the Watches, Clocks, and Wako Businesses, we provide products and services with the highest quality and also deep emotional value to help build long-lasting relationships with our customers. In the Electronic Devices Business, we will pursue higher functionality to achieve resource and energy savings, and in the Systems Solutions Business, we are working hard to create one-stop optimal solutions that will truly bring smiles to customers' faces.

Branding Strategy

Facing social issues, we will create a future full of smiles that enriches the hearts of people around the world through our social, technological, and emotional values.

Seiko is providing innovative products and services to the world with technology that is one step ahead of the times. We deliver emotional value through sports, where athletes strive to establish new records, and music, which lifts people's spirits, and share fun and excitement with people. With our constant pursuit of innovation, we are moving ahead and touching hearts while bring smiles to the world.

Innovation

Since establishing the image of "sports timing = SEIKO" in 1964 with its innovative technology, Seiko has continued its branding activities to deliver the excitement of sports.



Photo by Photo Kishimoto



A New Japanese Record in the Men's 100 m Sprint
Japan's super star sprinter, Ryota Yamagata who is also Seiko's employee, set a new Japanese record of 9.95 seconds in the men's 100 m at the Fuse Sprint on June 6, 2021. This accomplishment was achieved by overcoming various adversities through tireless challenges, embodying Seiko's Statement of Purpose of constantly pursuing innovation.



Official Timer of the World Athletics Championships
Seiko has been the official timer since the 1987 Rome Games. The men's 100 m world record time of 9.58 seconds was also recorded by a Seiko timer. The 2022 event will be held in Eugene, Oregon, U.S.A.



The Corporate Advertisement "Time to be kind" Wins the Grand Prize in the Fashion Category of the 37th Yomiuri Advertising Awards
With the world being so divided, this advertisement delivers a message that the world will surely be a better place if people had more time to be kind.



The Time Memorial Day Message Advertisement Wins the Grand Prize in the Brand and Fashion Category at the Nikkei Advertising Awards
When a watch is maintained, it creates a relationship with people that transcends generations and connects thoughts from people to people. This is the message in the advertisement conveying the spirit and activities of Seiko since its founding from the perspective of the SDGs.

Time



Supporting Reconstruction After the Earthquake
Ten years have passed since the Great East Japan Earthquake. In order to keep moving forward without forgetting the event, we continue to hold concerts to support reconstruction in the Tohoku region, where our manufacturing base is located, and in Tokyo so as to connect the thoughts of a circle, as in the joining of hands between disaster victims and supporters. In 2021, the event was held without an audience at the Nippon Budokan. At the concert, an original song, "Hope and Bonds," was performed. Its music was composed by our CEO Shinji Hattori and its lyrics was written by Manae Ishikawa, who was the student of Tagajo Junior High School in Miyagi Prefecture. This song will continue to be sung as a song of support for East Japan. As a way to contribute to a society through music, we will continue to work with the people of the Tohoku region to create a future full of smiles.

Society

Seiko supports music and cultural activities with the aim of giving people "quality time through music."



Future



Web Jazz Camp
In the midst of the COVID-19 pandemic, top jazz instructors sent advice to aspiring artists via the internet, connecting New York and Tokyo. Seiko supports the dreams of young people aiming to be successful globally.



Seiko Exciting School
At the Seiko Exciting School, we visit elementary schools to provide exciting experience through different themes; 'Time and Timepieces,' 'Sports,' 'Music' and 'Environment.' Our aim is to promote the development of the next generation.

Research and Technological Development

We are committed to research and development that realizes SDGs in order to reduce environmental impacts and protect people's health, safety, and security.

Advancing Research and Development to Solve Social Issues

The Group is actively committed to research and development that will solve social issues through external partnerships, including participating in national projects and joint research with universities. From the perspective of the SDGs in particular, we are advancing development centered on technologies that will reduce environmental impacts and protect people's health, safety, and security while simultaneously building an organization to promote research and development aligned with changes in society associated with the spread of COVID-19.

Aiming to be the First in the World to Commercialize Intraoral Sensors

In recent years, it has become the norm in the orthodontics field to provide treatment using mouthpiece-style orthodontic devices (aligners). In order for treatment with aligners to be effective, they need to be worn in the mouth for more than 22 hours a day. The Group conducted research and development jointly with the Showa University School of Dentistry in order to ensure appropriate effects from treatments using aligners. We have developed a device equipped with temperature sensors and other sensors using our unique know-how for creating miniaturized devices with low power consumption. This device mounted on an aligner obtains measurements every five minutes for 220 days, as well as sending data to external devices via Bluetooth and setting measurement conditions. This enables dentists to determine how long the aligners are being worn and provide more effective treatment. Because of the novelty, broadness of scope, and practical applications of this research, we won two awards, the Best Presentation Award at the Scientific Meeting of the Japan Academy of Digital Dentistry and the Excellent Presentation Award at the Comprehensive Research Presentations Focused on Dental Science sponsored by the Japanese Association for Dental Science. Moving forward, we will expand the use of this device for not only dental treatment but also various fields of health management and sports.



Members of the Showa University School of Dentistry and Seiko Holdings Corporation involved in this research and development



Wireless sensor module mounted on a mouthpiece

Developing Thermoelectric Power Generation Technology That Supports National Resilience

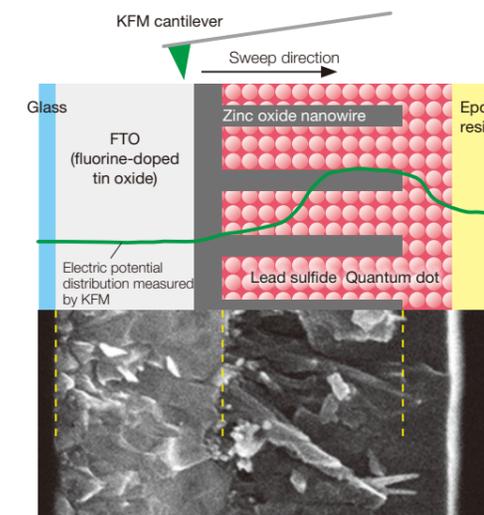
In recent years, systems with sensors that continuously monitor bridges, buildings, and other structures have been adopted. Research and development to use thermoelectric power as the energy source for such sensors is being promoted as a national project (the Core Research for Evolutional Science and Technology (CREST) project under the Japan Science and Technology Agency). The Group, which is participating in this project, is working to utilize a technology which uses minute differences in temperature, called thermoelectric technology, the same technology that powers the Seiko Thermic, the world's first thermoelectric watch. Because solar cells do not function in places without sunlight, such as tunnels, we are advancing a plan to develop a system for generating power using slight differences in temperature between the walls and air inside a tunnel. We have already incorporated our know-how into a power-generation module which has achieved high efficiency.



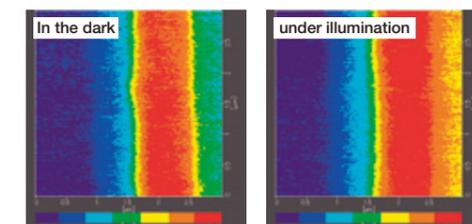
Demonstration of monitoring devices in a tunnel

Supporting Research in the Environmental Field Using Our Unique Analysis Technologies

The energy-saving field needs a next-generation solar cell that is highly efficient at low cost. In research at the Research Center for Advanced Science and Technology at the University of Tokyo, our Group has succeeded in measuring the electric potential distribution in the cross-sectional direction of a colloidal quantum dot solar cell element by utilizing the analysis technology of elements manufactured with an atomic force microscope (AFM), which can measure the characteristics of materials with high resolution. To date, we have observed changes in the electric potential distribution in the cross-sectional direction of an element when exposed to light, and we have confirmed that AFMs are a powerful analysis method for optimizing the element's internal structure, method of manufacture, and materials to use. In addition to its high energy-generation efficiency, because it can be manufactured simply by applying a liquid coating, it is gaining attention as a next-generation solar cell. We will continue to support leading-edge research in fields such as the environment in order to solve social issues.



Cross-sectional structure of a colloidal quantum dot solar cell and image of surface electric potential distribution measured by KFM (a type of AFMs)



Results of electric potential distribution measurement by AFM. The area with higher voltage (red area) increases with light irradiation (right) than without light irradiation (left).

Developing Technology That Supports the Next-Generation Communication Infrastructure

SEIKO NPC CORPORATION's proposal "Research and Development of Low Noise, High Precision, High Frequency Differential Output Crystal Oscillator Circuits" has been adopted as one of the development topics "(e) MEC-related technologies" for the "Research and Development Project of Enhanced Infrastructures for Post-5G Information Communication Systems and Leading Research," a project commissioned by the New Energy and Industrial Technology Development Organization (NEDO).

The advanced fifth-generation mobile communication system (5G) and the post-5G that has been enhanced with such features as ultra-low latency and large numbers of simultaneous connections are expected to be used in a wide range of industrial applications in the future, such as smart factories and self-driving vehicles. These technologies are expected to form a core competitive strength of Japan. The purpose of this research and development project is to develop a semiconductor chip mounted on a quartz crystal oscillator to generate a low-noise, high-precision, high-frequency reference clock required for communication systems in the post-5G society.

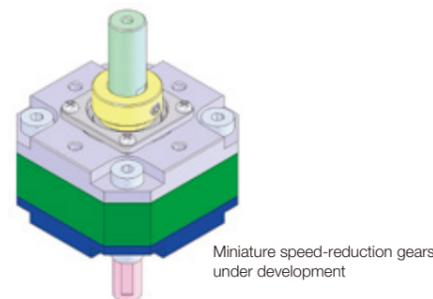
Utilizing the knowledge gained through the development of semiconductor chips for crystal oscillators compatible with various systems, we will continue to promote research and development for even lower noise, higher accuracy, and higher temperature compatibility for next-generation communication standards.



Leveraging the Strengths of Craftsmanship, Miniaturization, and Efficiency to Deploy Products in a Wide Range of Fields

The Development of Miniature Speed Reduction Gears

We are developing miniature speed-reduction gears for use in robotic hands. Because labor shortages in recent years have caused a transition to the use of robotics and automation, it is anticipated that speed-reduction gears will be used in the hands and other extremities of factory automation equipment, collaborative robots, and communication robots. Although most speed-reduction gears today are mid to large-size at 50 mm or more, we are creating a prototype gear that is 8 to 40 mm, envisioning future demand for miniature robots that can be used in an even greater range of applications.



Miniature speed-reduction gears under development

Developing Processing Technologies for Lead-Free Materials

Lead is added to metal materials in order to improve cuttability and other properties. Not adding lead can massively decrease processing speeds or make it impossible to maintain quality. However, since lead is designated as an environmentally hazardous substance, we have been working to develop processing technologies and maintain the quality of lead-free materials to make a further shift from lead to environmentally conscious products with higher safety while complying with laws and regulations, including the RoHS Directive*. As a result, we are moving steadily toward lead-free materials.

* RoHS Directive: EU laws established to make electrical and electronic equipment sold in the EU easier to recycle and prevent them from containing hazardous substances so they will not adversely impact people or the environment when they are disposed of in landfills or incinerated.

Support for Developing Technologies Using DX and IoT

Because of the COVID-19 pandemic, it has become difficult to carry out activities physically at local sites. In order to continue to provide technical support at customer sites, overseas plants, and other locations in the same way as before, we are studying the feasibility of remotely performing delivery acceptance inspections for equipment and providing technical support and have actually begun to carry out such operations.

Even after COVID-19, these initiatives can reduce distances and times to remote sites, improve communication with customers and local worksites, and help us provide more enhanced support. Moving forward, we will build on these achievements, and aim for initiatives with higher added value, such as making it possible to continuously collect and analyze data from remote sites.



Visual inspection machine for automobile parts

Sub-assembly machine for HDD parts

Crystal visual inspection machine

Enhancing Sustainable Recycling-Oriented Manufacturing

In many cases, malfunctioning equipment can be reused by performing overhauls. Overhauls can not only restore the previous state, but can also be used to incorporate NC* and other advanced features. Equipment can also be retrofitted to have improved features, enabling the equipment to function at the same level as the latest models. This eliminates the need to replace equipment with newer models and reduces waste. Upgrading drive units can also save energy. Furthermore, if old equipment that relied heavily on human skill and experience to use can be digitized, the equipment can also be operated by less experienced workers.

By fusing analog and digital to restore equipment, we are achieving sustainable recycling-oriented manufacturing. We will accelerate our initiatives to achieve a recycling-oriented society, moving from conventional passive maintenance to active maintenance.

* NC: Numerical control via computer



Before overhaul and retrofit



After overhaul and retrofit

Initiatives to Further Evolve AI and Make It More Practical

Deep learning is a machine-learning method that teaches computers to do tasks that humans do naturally. This technology supports rapid advances in artificial intelligence (AI).

While deep learning has the advantage of enabling a computer to automatically learn features in images it is analyzing, it is also possible for the computer to incorrectly learn things, such as learning to incorrectly identify defects where there are none.

By creating deep learning that visualizes locations a computer is analyzing, and confirming whether the AI is focusing on locations that humans determine to have a defect, we are promoting more practically applicable AI. The example on the right shows an automated inspection of precision components. In this example, the computer flags a location with an incorrectly shaped hole as a defect. Enabling a person to see the area where the defect is highlighted in red makes it possible to confirm that the computer is detecting the correct things.

We are continuing research that will enable this kind of technology to greatly reduce the time required to inspect the status of components while improving its accuracy.

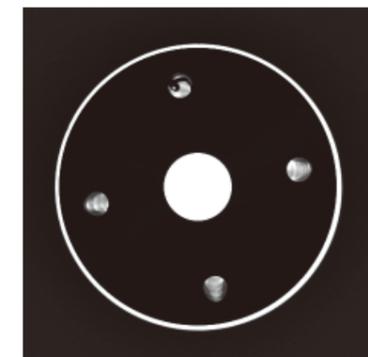
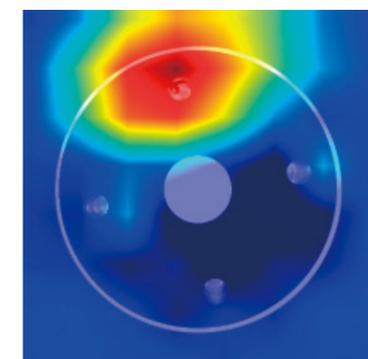


Image capture



Display of reaction point

Human Resources

We aim to achieve sustainable growth of the Group by creating a virtuous cycle of "recruiting," "cultivating," and "leveraging," with human resources as the source of management power

Basic policy

The labor environment is changing due to such factors as advances in information technology, labor shortages due to the aging population and falling birth rates, and increasing diversity in forms of hiring and employment, and these changes are being accelerated by the COVID-19 pandemic. Amid these changes, the Seiko Holdings Group aims for sustainable growth over the three-year period of the 7th Mid-Term Management Plan through a virtuous cycle of "recruiting," "cultivating," and "leveraging" human resources by preparing an environment where personnel with diverse senses of value can work enthusiastically.



Basic Strategy of 7th Mid-Term Management Plan

- Develop an environment where human resources can play an active role
- Recruit, cultivate, leverage and revitalize diverse human resources (diversity)
- Utilize and revitalize the Group's human resources

Toward the further development and utilization of human resources

In order for a company to achieve sustainable growth, even when things are rapidly changing, we believe it is important to develop an environment where employees can work with greater job satisfaction.

In the 7th Mid-Term Management Plan, we have been working on initiatives to develop an environment where human resources can play an active role, such as improving productivity by expanding working from home and improving the treatment of seniors from a systemic perspective.

As for our efforts to promote diversity, in addition to increasing the ratio of women in managerial positions, which we are continuing to promote, we are working to support the balancing of illness and medical treatment as part of our health management initiatives and have also been seeking to obtain the recognition under the Certified Health & Productivity Management Outstanding Organizations Recognition Program.

In terms of ongoing issues for the 8th Mid-Term Management Plan, we will focus on cultivating and revitalizing human resources and work to enhance the careers of our employees by providing not only internal and external training but also opportunities to experience a variety of jobs.

Ratio of women in managerial positions



The 7th Mid-Term Management Plan sets a target ratio of 15% women in managerial positions for the Group as a whole and we had increased to 13.7% as of April 2021.

Recruiting

We are further promoting diversity, with active initiatives to hire globally (hiring foreign nationals), with a focus on mid-career hires in addition to new graduates. We believe that gathering diverse people together will be our source of continuous innovation.

Cultivating

Because we operate a wide range of businesses in the global market, we have a variety of employees in the Seiko Holdings Group of various nationalities, backgrounds, and job types. We strive to develop the capabilities of each employee through a range of education programs matched to the characteristics of each business and local region where we operate. We also work to develop leaders demanded by the era of the "new normal" and provide stratified training to improve skills, as well as training to develop global human resources and other types of education.

Leveraging

In addition to developing human resources, the Seiko Holdings Group works to improve productivity and create an environment where diverse employees can feel job satisfaction and fully leverage their capabilities. We also strive to strengthen the Group's human capital as a whole and maximize the organization's capabilities by optimizing personnel assignments.

Health management

From FY2019, the Seiko Holdings Group have added the perspective of health management to our initiatives for promoting the active role of all employees to send out "Declaration of Health Management" and have built the promotion system. The Employee Empowerment Committee, HR management at each company, and health insurance societies work together to promote initiatives for the health maintenance and improvement of the employees. In FY 2021, we streamed online health seminars during the COVID-19 pandemic, and many employees attended. In recognition of this initiative, Seiko Holdings Corporation and Seiko Watch Corporation have been recognized under the Certified Health & Productivity Management Outstanding Organizations Recognition Program (Large-Enterprise Category) for two consecutive years starting in 2020.



Declaration of Health Management

Each and every one of our employees is the driving force that enables Seiko to continue its relentless pursuit of innovation. Without our people, Seiko would not be able to produce such strong emotions in our customers or such a high level of trust in society.

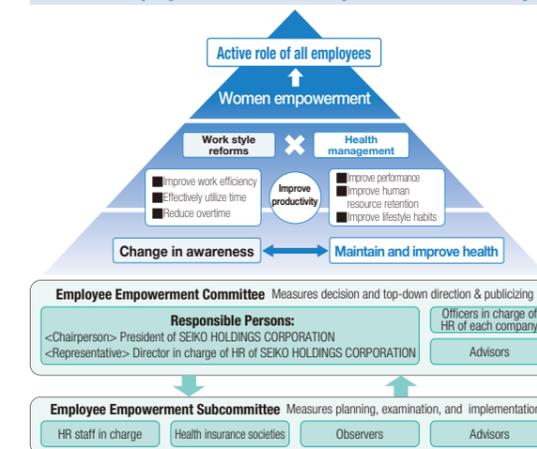
We consider our staff to be our single greatest asset, and we constantly strive to maintain and improve their health and well-being.

We will continue to aim for the sustainable growth of our Group by creating an environment in which all our employees can enjoy their work and enjoy being part of the Seiko community.

Shuji Takahashi
President
SEIKO HOLDINGS CORPORATION

Promotion System

For all employees to work healthy and enthusiastically



Thorough Implementation of COVID-19 Measures to Ensure Safety and Security

In February 2020, when COVID-19 began to spread, we set up a crisis task force, and when the government declared a state of emergency in April of the same year, we established an environment in which all employees could work from home. Furthermore, we have been implementing measures to prevent infections with a priority on ensuring the safety and security of our employees in response to government requests, such as limiting work attendance, staggered work shifts, and vaccinations of employees at workplaces. We have set up a system to quickly obtain information on the status of infections and the impact on business at each Group company in Japan and overseas and are taking appropriate measures to create an environment where employees can work with peace of mind.

Providing a Place for Employees to Learn Through Internal Webinars

Using an online conferencing system that has spread in response to the COVID-19 pandemic, the Group regularly holds internal webinars with outside lecturers. To date, we have implemented webinars on themes such as SDGs, design thinking, and ambidextrous management. Webinars can provide learning opportunities for a larger number of employees compared to conventional training. By using these difficult times as an opportunity, we will continue to take on the challenge of various initiatives that will contribute to the sustainable growth of our employees.



Photo: Naoya Ochiai