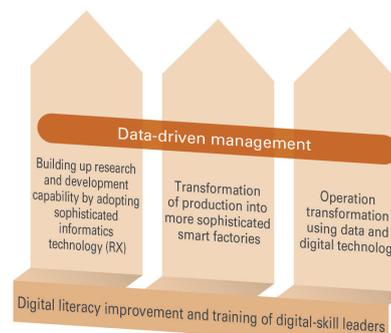


## Data-Driven Management Enabled by Digital Transformation

### An Overview of Digital Transformation

We view digital transformation as an engine for growth for our Group. We are aiming for sustainable growth toward Vision 2030 by tackling four themes. “Revamp of the corporate-wide digital core system to realize data-driven management” means we are putting systems into place to integrate and analyze all kinds of data, aiming to achieve visibility of management and agile decision-making. “Building up research and development capability by adopting sophisticated informatics technologies” means we are promoting Research Transformation (RX)\* to revolutionize the research and development process. This will enable us to create new products and shorten development timescales. “Improvement of human work efficiency by turning the entire production system into smart factories” refers to building a flexible production system by automating and optimizing production lines utilizing IoT and AI. The final theme is “business operation transformation through utilization of digital tools.” With digital tools as a foundation, we will promote operational efficiency and improved productivity, leading to new ways of working that will bring out the maximum creativity in our employees.



\* Research Transformation (RX) refers to efforts to improve the efficiency and effectiveness of research and development activities by utilizing digital technology and data analysis to revolutionize the entire research process.

### Message from the Departments Responsible for Digital Transformation



**Building the foundations for data-driven management to accelerate future-looking, strategic business development**

**Shiro Hayashi**

General Manager of IT Promotion Division

To make data-driven management a reality, it is vital to build a flexible and robust system infrastructure. As well as standardizing and optimizing business processes across the Company, we will establish systems to quickly integrate and visualize information from all our locations around the globe, enabling decisions to be made swiftly and accurately based on up-to-the-minute data. At the same time, by improving data literacy of our employees with a focus on training people to use business intelligence tools, we are building the foundations for strategic planning and execution based on data analysis. Core system conceptualization was completed in FY2024 as planned. In FY2025, we will move on from defining requirements to constructing the new system. As well as automating routine tasks, we also want to harness generative AI to improve productivity and realize flexible ways of working. These initiatives will help us to accelerate strategic business development, giving us a sustainable competitive advantage.



Digital transformation is gaining momentum, with our Group being recognized as a DX certified business by Japan's Ministry of Economy, Trade and Industry in FY2025. We believe that training digital-skill leaders is the key to putting in place digital transformation, which is one of our Group's material issues, and the four themes relating to it. We have set the following KPIs: double human productivity (compared to 2023), and reach 150 employees with data science-related certifications and 450 employees with data science-related skills by FY2030. As the first step toward this, we set the target of increasing human productivity by a factor of 1.1 and reaching 50 employees with data science-related certifications and 150 employees with data science-related skills in FY2024. Thanks to the introduction of robotics, we reached our human productivity target. We aim to further improve productivity by leveraging new technologies such as AI visual inspection, as well as sharing initiatives and challenges throughout the whole Company. Although we attained our target for the number of employees with data science-related certifications, we only achieved 97% of the target for employees with data science-related skills due to changes in the work environment of trainees. From FY2025, we will introduce a mentoring scheme with certified employees as mentors to strengthen the training and support system.

📍 [Digital Transformation Initiatives](#)

## Digital Transformation Initiatives

### Evolution of manufacturing systems that are not reliant on humans

We are evolving our production facilities into smart factories, aiming to develop manufacturing systems that do not rely on human intervention. We are currently digitalizing production technology at five domestic and five overseas sites, making our production systems more efficient and more sophisticated by leveraging digital technologies including automated condition setup at the start of production, autopilot control, and robotics.

The manufacturing sector is affected by labor shortages due to Japan's low birthrate and the loss of skills as experienced workers retire, which makes harnessing digital technology all the more urgent. We will expand the use of robotics technologies to automate non-value-adding tasks such as horizontal traverse movements on production lines. We also plan to further develop autopilot control utilizing digital data from production equipment and extend its scope of application.

Going forward, we will take these developments further at our sites in Japan as well as gradually rolling out smart factory systems to US and European production sites acquired through M&As. To achieve this, we will build a manufacturing system on a global scale, keeping in mind the differences in cultures and values of different countries.



Introduction of autopilot control

### Development of digital human resources

The key to driving digital transformation is the human resources that will deliver it. To improve the digital literacy of all our employees, we conduct skills assessments and provide training programs tailored to each person's level.

As well as practical training on how to use digital technologies, in-person networking sessions offer opportunities to share success stories and actively exchange opinions. Case studies are also shared with all employees to improve the digital literacy of the entire organization. We are supporting employees to become more self-sufficient in utilizing digital technology in various ways, including individual consultations and community activities.

These initiatives will boost the development of digitally literate human resources, enabling us to build a digital transformation system that will provide a competitive advantage.

### Building up R&D capability by promoting research transformation (RX)

We are working on RX, the digital transformation of research and development, with the aim of improving our capability to create materials to solve social issues, by humans and data working in harmony. This is an important pillar in realizing our vision to be "a company providing dreams for the future" through creating value with our customers.

As one aspect of RX, we have developed technology to design and propose highly functional materials that satisfy the properties required without relying on the intuition and experience of researchers. This technology uses open databases to search for new molecular structures using molecular generation AI, making it possible to create innovative materials that humans alone would not have come up with. Taking this further, molecules with high synthetic potential can be identified by combining this technology with retrosynthetic analysis. This has enabled us to design realistic and practical high-performance materials that could be used to create new products and solutions. Several new materials discovered thanks to this technology are currently being verified.



Discussion about ways of leveraging data

One notable accomplishment is a project to develop next-generation power semiconductor encapsulation materials intended to have a lower environmental impact. Previously, there was a trade-off between thermal conductivity and liquidity when using biobased raw materials, but this was resolved by combining researchers' knowledge with informatics technology. The paper "Development of High Thermal Conductivity and Insulating Composite Materials Using Bio-Based Raw Materials" was presented at the 73rd Symposium on Network Polymer (sponsored by the Japan Thermosetting Plastics Industry Association) to great acclaim, winning the award for the best presentation.



Award winner Tomomasa Kashino of the Advanced Materials Research Laboratory

➤ [Data-Driven Management Enabled by Digital Transformation](#)