

Feature 2 Untapped Potential of DX (Building New Service Models)

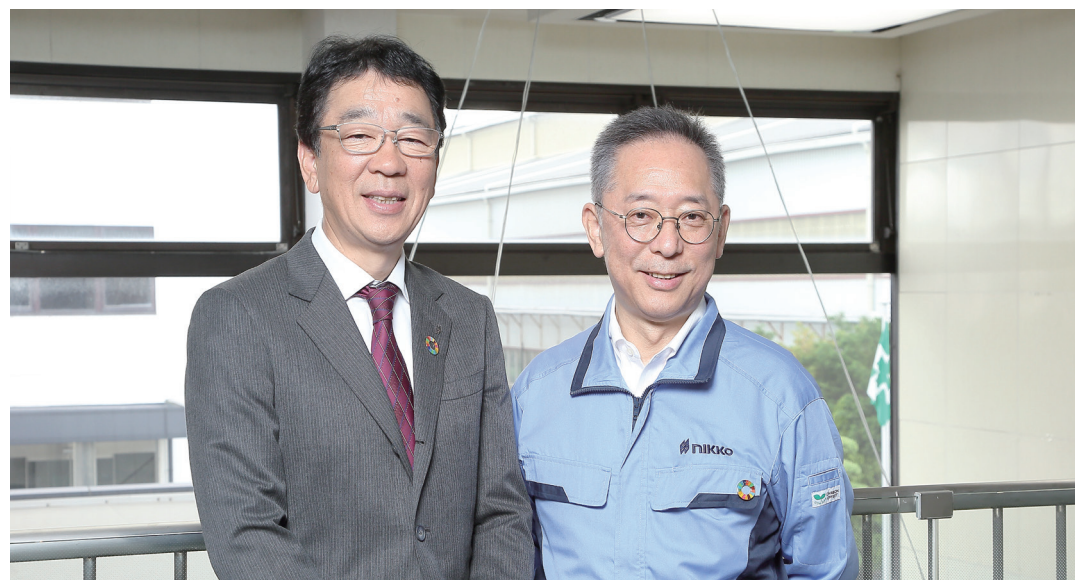
Feature Interview

Remaining Committed to Building Nikko's Unique Ecosystem by Solving Problems and Increasing Satisfaction for Customers through the Use of DX and AI

Koichi Kawakami Director, Director of Administrative Division

Katsuhiro Kawamura Executive Officer, General Manager of R&D Center, Technology Division,
General Manager of the Low Carbon Task Force

- **Materiality** Realization of new customer values
- **Relevance to what the Nikko Group aspires to be** In its 2030 Vision, the Nikko Group announced its goal of becoming "a business partner that supports customers through operation and maintenance services." We are promoting flat-rate (subscription) maintenance service contracts, in addition to delivering products and services and using digital transformation (DX), AI, and other tools to solve customers' problems and improve customer satisfaction.
- **KPIs** Creation of new values through DX, flat-rate service outsourcing count



Q Could you tell us about the current status and outlook of the challenges faced by asphalt plant (AP) and batcher plant (BP) customers in relation to the DX promotion of Nikko Group?

Kawamura: With labor shortages becoming increasingly serious across the construction and civil engineering industries, enabling labor-saving and automated operations has become urgent. To address this, Nikko is developing devices that not only monitor plant operations in real time to enable automatic adaptation to future changes, but also detect early signs of equipment malfunctions and conduct preventive measures regularly. As a precedent, an unmanned shipping system for mixture silos has already been implemented at asphalt mixture plants. To improve product development efficiency, moreover, we are facilitating the effective use of our accumulated technological assets using AI and other tools. This includes digitizing and consolidating development documents that were previously dispersed throughout the Company.

Kawakami: Safe operation is the top priority for users of our plants, but it is equally important to keep operations running without interruption. Even a state-of-the-art plant holds little business value if it frequently halts operations because of preventable errors. It is essential to use sensors for quantitative measurement to accurately understand site conditions and facility operations. However, this is not as simple as it sounds. For example, the current image recognition technology still struggles to accurately distinguish plant operators from outsiders while they are in motion. Similarly, existing sensors and systems are not yet advanced enough to detect subtle differences in abnormal noise or vibration that could indicate the failure source. To address these challenges, we are leveraging AI, alongside DX initiatives, to develop facilities and systems that ensure greater customer safety and security. Every division of the Company is proactively adopting AI in their operations under the motto "give it a try first." We are currently developing a track record of using AI in areas such as contamination and aggregate identification, as well as burner

control. By efficiently applying past cases to daily operations, we expect to achieve business process improvements such as facilitating the checking of drawing and reducing recurring errors.

Q What are your strengths in promoting DX, and what are the challenges facing your products and maintenance service business?

Kawamura: Our technological expertise in both machinery and control systems is the foundation of the Nikko Group's strength. This capability allows us to make optimal decisions for each project and respond effectively to on-site conditions. Our nationwide network of field service personnel is another important asset. A system capable of identifying high-risk areas in advance and offering appropriate recommendations to customers is needed for preventive maintenance and rapid response to failures. We aim to reduce the workload of our service teams by using DX. Simultaneously, we will continue to refine our machinery and use it in conjunction with DX to deliver higher value-added services.

Kawakami: For the product business, promoting DX means steadily advancing each development theme. Conversely, the single greatest challenge in the maintenance service business is the shortage of human resources, including experienced employees. As this chronic labor shortage is expected to persist, creating work environments that empower a diverse workforce is essential.

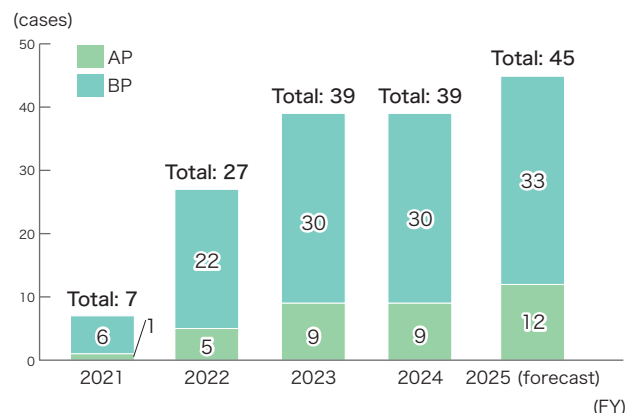
In the maintenance service field in particular, we must reduce the physical strain of handling heavy components so that senior and female employees can work comfortably. To achieve this, we are pursuing modular designs that balance functionality with durability while making components lighter. We anticipate a growing number of challenges, such as developing jigs specifically designed for maintenance work. We also expect that DX and AI will play an important role in addressing these challenges.

Q Nikko is transitioning from a project-based charge system to a flat-rate (subscription) service. Where are you now in the process, and what is the outlook?

Kawakami: We recognize that the subscription service is currently at a plateau, as both its service delivery framework and lineup still have room for improvement. Although we have proposed tailored solutions to each customer based on past records, some benefits only become obvious once operations begin. As a result, we have not always been persuasive enough for customers hesitant to adopt the subscription model. We now see the need to reanalyze our data to better understand the challenges faced by customers. Simultaneously, we are studying the feasibility of AI-powered multilingual customer support desks and 24/7 operations. We believe that integrating these initiatives with a subscription service to help customers minimize downtime will be vital.

Kawamura: Customer adoption of the service is approaching maturity, and we are at a turning point. Once we begin to see tangible results from the subscription model, our service personnel will be able to communicate its value to customers with greater confidence. For next-generation preventive and predictive maintenance services, it will be essential to leverage AI to build a remote monitoring system that can operate from anywhere. Our key challenge will be establishing a framework that enables us to address failures without requiring on-site personnel. Achieving this will require close collaboration with AI, supported by continued advances in software and sensor technologies.

● Status of flat-rate service outsourcing count (cumulative)



Q Could you tell us about the current status of and future initiatives for the One NIKKO Platform, which serves as the foundation for the DX-enabled next-generation preventive and predictive maintenance service?

Kawakami: We are building the One NIKKO Platform in stages to integrate operational information across the Company, including sales, technology, service, and accounting. In the first stage, we consolidated sales information into a sales force automation (SFA) system to link the accounting platform with order intake and sales data. In the second stage, we incorporated technology data, such as group-purchased goods and components used in specific projects, to establish a centralized system for managing technical information. The third stage focuses on promoting the visualization and sharing of the maintenance history. Although we have accumulated extensive maintenance records, the outcomes of our responses have not always been fully visualized or shared, limiting their accessibility to only a few personnel. By improving this process, we aim to enable more accurate decision-making and effective solution delivery.

A large percentage of our plants are custom designed for individual customers, and use a wide range of components. Because cost and performance can vary among components with the same function, comparing data based on usage records is essential to make optimal selections. We can create

our own ecosystem by developing a system that accumulates and uses such information, which is expected to expand the range of customer needs we can address. In the future, customers may also use this ecosystem to manage and operate their plants more cost-efficiently.

Kawamura: We can expect tangible benefits, such as fewer grievance cases and improved accuracy in repairs and field service at overseas plants, by feeding technical information into the platform. Using this integrated information is also critical for effectively managing on-site conditions. We can continuously integrate these data points into the platform by identifying customers' challenges and issues with our products, developing solutions based on this insight, and collecting feedback on the resulting products. We believe that this cycle will enable us to build a highly reliable system.

Q What challenges are you facing regarding DX personnel, and what are your goals?

Kawakami: We are eager to welcome individuals who are motivated to take on challenges for new technologies and initiatives. For example, we hope to see younger employees proactively engage in AI-related operations, as senior employees may be less inclined to volunteer in these areas. Nikko fosters a corporate culture that does not assign blame for failed attempts. In recent years, many young applicants have expressed an interest in joining Nikko because they want to grow as individuals while contributing to social infrastructure. By introducing AI, I believe we can create more opportunities for back-office personnel who support our operations to step into the spotlight.

Kawamura: Although we certainly need data specialists, we need even more DX professionals who can leverage data to drive operational reform. These individuals must have the insight to appropriately distinguish between the roles of people and digital technologies, using technology as a tool while maintaining a broad, strategic perspective on overall operations. We must also secure such talent to expand the scope of product development. The use of DX to improve operational efficiency is directly connected to our decarbonization efforts and will serve as a foundation for sustainable corporate activities.