# Technology -Process Reforms-

## Process ReformsInitiatives

The Denka Group is trying to transform its business models and organizational structure and is committed to the improvement of labor productivity by making the best use of digital and robotic technologies and by significantly reforming existing processes. In particular, these include optimizing operating conditions by analyzing accumulated process data, early anomaly detection with proactive management of equipment, development and implementation of optimized production plans through supply chain collaboration, automating inspection equipment using AI technology, and automating material handling* operations (robotization). We will further evolve these initiatives and commit to activities following our management plan "Mission 2030".

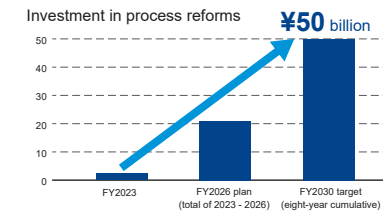* A collective term of equipment used to facilitate and automate logistics operations.

### MESSAGE

#### Progress of process reforms (achievements and challenges)

To continue our production activities in an aging society with a declining birthrate and working age population, there is a need to improve our labor productivity by process reforms (transforming the existing processes by making the making the best use of digital and robotic technologies).

As a non-financial KPI in our "Misson2030" management plan, we aim at promoting labor saving with a 50-billion-yen investment to process reforms(eight years), organizing labor-saving targets and plans at domestic plants every fiscal year, and selected priority products and plants to implement process innovation. In addition, we established a system for early performance of process reforms and cultivation of new business themes.

To promote our processreforms, it is necessary to understand the current situation, freed from fixed ideas, and to keep changing as the time changes. We would like all stakeholders to share common recognition without fearing changes to pursue our goal.
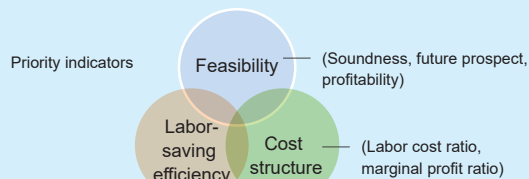
Investment in process reforms **¥50** billion

| | | |
|---|---|---|
| 50 | | |
| 40 | | |
| 30 | | |
| 20 | | |
| 10 | | |
| 0 | | |
| FY2023 | FY2026 plan (total of 2023 - 2026) | FY2030 target (eight-year cumulative) |

**Kazuyuki Yubune**
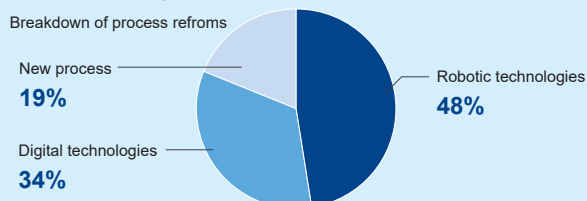General Manager of the Production & Process Technology Department

## Roadmap

### [FY2023 Results]

- Development of labor-saving targets and plans up to 2030 through process reforms. 187 process reform themes to be implemented during the target period are selected, and prioritized for implementation plans of each fiscal year.

Priority indicators

- Feasibility (Soundness, future prospect, profitability)
- Labor-saving efficiency (Labor cost ratio, marginal profit ratio)
- Cost structure

- 14 priority products were selected based on the priority product indicator to implement process reforms. A system is established, including resource concentration, for early performance of the study themes and accelerated new theme development.

Breakdown of process refroms

- New process **19%**
- Digital technologies **34%**
- Robotic technologies **48%**

### Examples of initiatives

- **Big data analysis for stable operations:**
Operating parameters required for stable operation are extracted through analysis of big data collected from fusion furnaces anddecomposition furnaces. Based on this result, new management criteria were set, leading to quality stabilization and operation rate improvement (increased number of days of continuous operation).

- **Quality control enhancement and labor saving initiatives in data management:**
Using static analysis software that enables data visualization and easy static analysis, manual recording of inspection data and data import to Excel were automated. Data variation and tendency management was visualized, leading to further labor saving.

- **Building the original production management system:**
A system was built to allow real-time sharing of inventory and shipment information of tape products with salesdivisions, aiming at facilitating production plans.

### [FY2026 Plan]

- In a three-year period until 2026, approximately 100 process reform investments will be made to achieve labor savings of 475 manpower.

- With approximately 100 process reform investments, the concept of selection and concentration is incorporated, and will enhance process innovations in Electronics & Innovative Products and Life Innovation division. In particular, these include automating inspection equipment, robotization of material handling, and promoting DX at each production site to achieve process innovation.
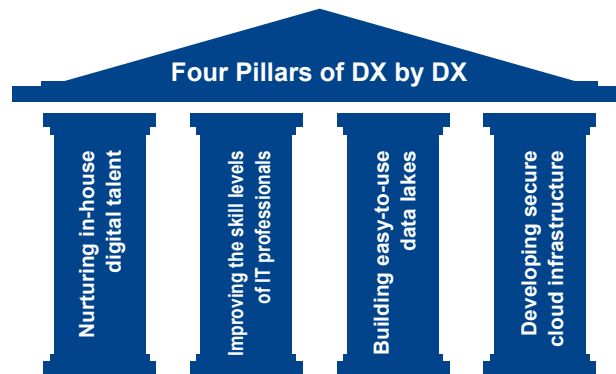
### [FY2030 Target (ideal form)]

- In the aging society with a declining birthrate and working population, we will achieve continuous production activities with limited human resources.

- We will promote smart factory initiatives by adapting IoT, big data analysis, AI, and robotics, aiming at factories equipped with innovative technologies, evolving according to the changes in time.

- We will enhance cross-sectional collaboration between divisions by promoting DX, and ensure our competitive advantage through transformation of organizations and business models.

# Digital Strategy for Our Management Plan "Mission 2030"
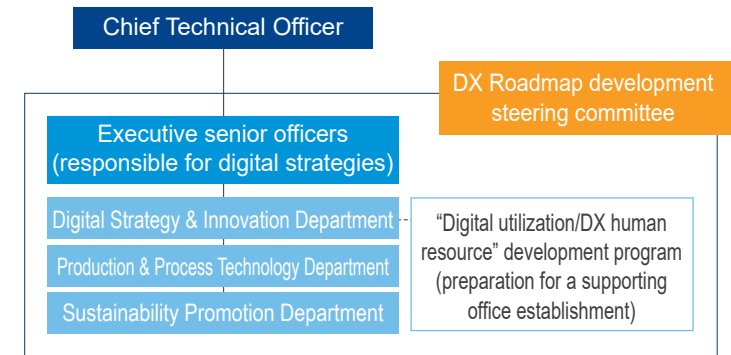
## Basic Approach (policy)

Our management plan, "Mission 2030" sets forth a variety of measures aimed at enhancing corporate value through three mission-based growth strategies. The Digital Strategy Department will work to clarify what systems can be used for each of these measures, and formulate concrete measures to achieve them. As one measure that has already been implemented, we are providing a product-specific ROIC calculation system that contributes to data-driven management. Further, we will restructure core systems that we plan to update in the near future, taking into account the level of contribution that can be made to each measure. Under the theme of "DX by DX" (Denka Transformation by Digital Transformation), the Digital Strategy & Innovation Department aims to make a concrete contribution to the financial targets set out in "Mission 2030" by 2030 by achieving the "Four Pillars" (see right).

**Four Pillars of DX by DX**

- Nurturing in-house digital talent
- Improving the skill levels of IT professionals
- Building easy-to-use data lakes
- Developing secure cloud infrastructure

## Promotion system

With the supervision of the Chief Technical Officer, executive senior officers responsible for digital strategies are appointed. A new structure consisting of Digital Strategy & Innovation Department, Production Technology Department, and Sustainability Promotion Department will serve as a DX Roadmap development steering committee to develop an DX Roadmap with aggregated feedback from various departments.

When developing the DX Roadmap, we will ensure that it corresponds to our three policies ("business value creation", "human resources value creation", and "management value creation") to clarify its link to the management plan "Mission 2030", as well as we will clarify what to innovate (products and service offerings, business models, business process, organization, process, corporate culture/climate) while aligning with DX defined by the Ministry of Economy, Trade and Industry.

**Chief Technical Officer**

**DX Roadmap development steering committee**

**Executive senior officers (responsible for digital strategies)**

- Digital Strategy & Innovation Department
- Production & Process Technology Department
- Sustainability Promotion Department

"Digital utilization/DX human resource" development program (preparation for a supporting office establishment)

## Roadmap

### [FY2023 Results]

- "Digital utilization/DX human resource" development program was established, and an assessment was conducted.
- Product-specific ROIC calculation system that contributes to data-driven management
- Generative AI, Copilot, was deployed
- Enhanced security measures (EDR upgrade, Dark Web monitoring)
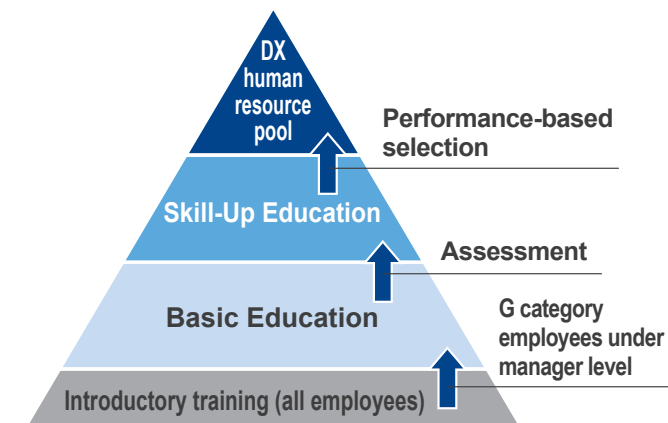
### [FY2026 Plan]

- Foster 150 Digital Pilots (DP)
- Implement a data utilization platform (data lakes)
- Deploy and implement 200 accounts for generative AI, Copilot for MS 365
- Quantitative comprehension and visualization of ICT assets
- Acquisition of DX Certification

### [FY2030 Target (ideal form)]

- We will make the most of data and digital technologies to create new services and businesses, and reduce "impossibility, waste, and variation" in all business processes.
- We will standardize and automate business processes.
- While managing and operating our ICT assets, we will utilize them to implement our digital strategies to establish a system for continuous growth.

## Digital Pilot Development

In order to carry out measures to achieve our Mission 2030 targets, we believe it is essential for all employees to acquire digital literacy and to utilize the available digital technology in their respective workplaces. Each department requires "DX human resources" with the knowledge and skills to actively promote DX. However, rather than recruiting these from within our current resource pool, we launched a pyramidal "DX human resources" development and education program in FY2023 to raise the level of digital literacy among all employees. Through this educational program, the participants can feel their growth with improved works and quality, while their motivations will increase through incentives enabled by the corresponding human resource evaluation systems. For managers of these participants, the work processes in their workplace will improve, leading to an organizational and self evaluation. This program is a source of performance improvement and competitive force, while it leads to development of outstanding human resources, that are the company's treasures. We believe that providing excellent products and services through our DX achievement will lead to resolution of social issues.



DX human resource pool — Performance-based selection

Skill-Up Education — Assessment

Basic Education — G category employees under manager level

Introductory training (all employees)

### VOICE

#### As a representative of 450 participants in the "Basic Education program"

I felt I needed an ability, in addition to my chemical expertise, to accelerate my development work using information science, so I took this education program. It was a great opportunity to learn various digital tools and marketing skills, and I think that results in better work efficiency and approach improvement.

**Hiroki Banno**  Electronic Materials Research Department, Shibukawa Plant

### VOICE

#### As a representative of 85 participants in the "Skill-Up Education program"

It was a valuable opportunity to widen my field of view, as well as to acquire skills needed in the digital age. The e-Learning program allowed us to learn at our own pace, and I've been engaged with it to improve my skills. I would like to continue my effort to contribute to the DX promotion in our company.

**Taiyo Yamaura**  R&D Management Department, New Business Development

## Development of data lakes and infrastructure

Digital Strategy & Innovation Department aims at building a data environment and infrastructure that serves as an essential foundation to promote DX. Denka has a long history, which means it has massive data accumulated through years, or, in other words, a great collection of treasures. However, as Denka operates diverse businesses, its databases are not functioning as they should be.
To overcome this silo problem of databases, we are building a system capable of cross-database searches. It will help us reduce the great amount of time spent looking for information and facilitate business processes, as well as create new values. For example, we will be able to develop new applications and new businesses by combining material information and sales information to match potential needs and available seeds. In the age when data utilization creates new values, Denka recognizes that building data lakes is an important environmental improvement that enables all DX.

### MESSAGE

#### Progress of digital strategy initiatives (achievements and challenges)

In November 2023, a strong message from President, Initiatives for human resource development to utilize digital technologies and promote DX, ensured the serious attitudes among the management team. In addition to that, it was a great achievement that Digital Utilization and DX Human Resource Development Program was launched in April 2024.
As many DX human resources are fostered in the near future, we cannot wait to establish a supporting environment to help them use their skills without any limit.
On the other hand, the retention cost of ICT assets is increasing year by year. I think we have challenges to visualize our ICT assets, enhance its management and operations to enable new strategies, enhance security against potential cyber attacks, and evaluate the result of operational improvement enabled by digital technologies through corresponding initiatives.

**Minoru Morioka**
General Manager of the Digital Strategy & Innovation Department