



Kobelco Sustainability Day

Kobelco Group

# Digital Transformation (DX) Strategies

— Promoting the transformation into an appealing company  
with digital technologies —

September 29, 2025  
Kobe Steel, Ltd.

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 Kobelco DX Report 2025 (tentative title) scheduled for release  
in November 2025 will provide more detailed information.

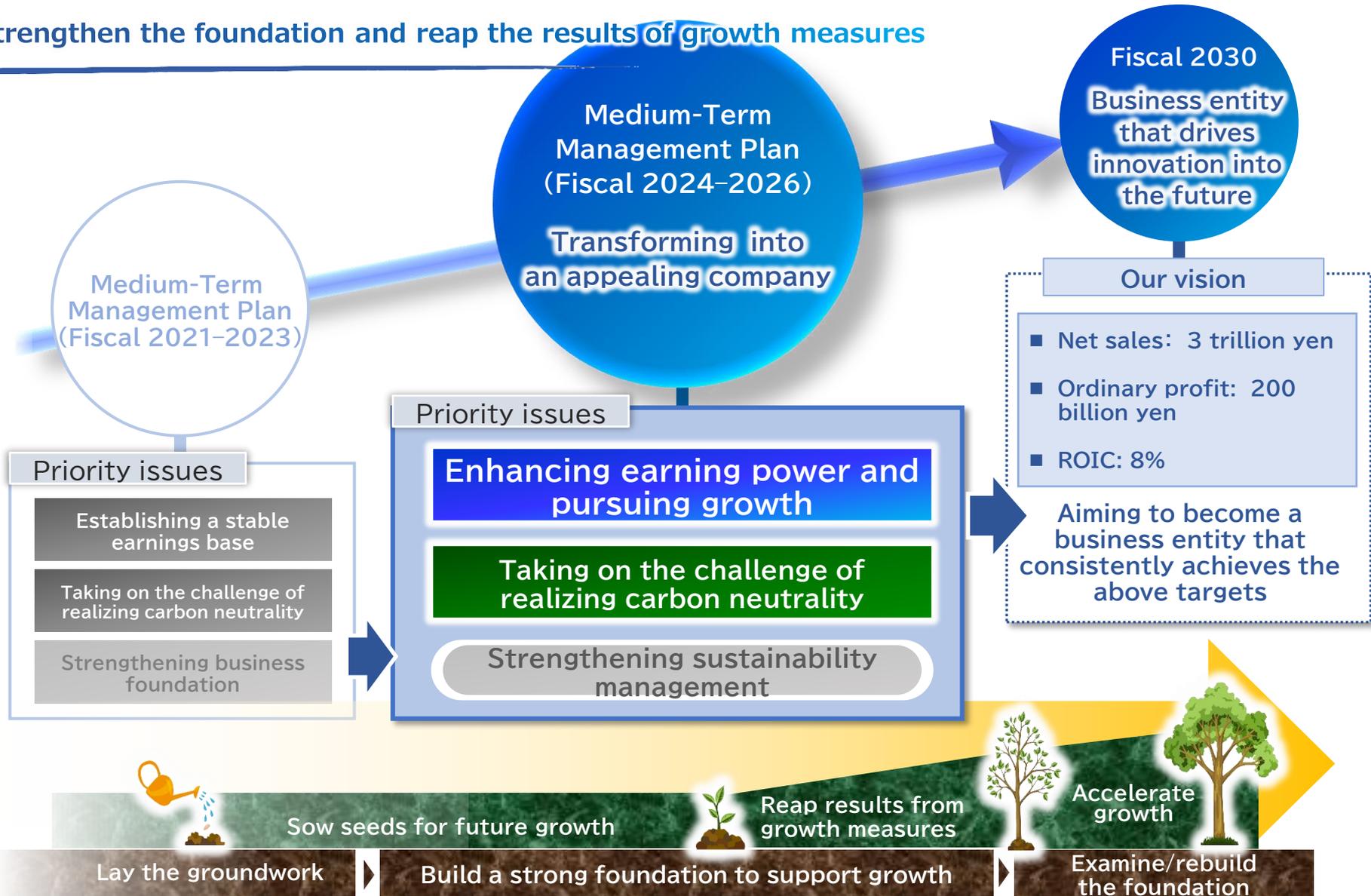
# Contents

- 1.** The Medium-Term Management Plan (Fiscal 2024-2026) and KOBELCO-X
- 2.** KOBELCO-X and Seven Transformation (X) Initiatives
- 3.** Kobelco Group's Digital Transformation (DX) Strategies
- 4.** Four Transformation (X) Initiatives, Driven by Digital and Data (xD)
- 5.** GX and AX, Driven by Digital and Data (xD)
- 6.** Summary

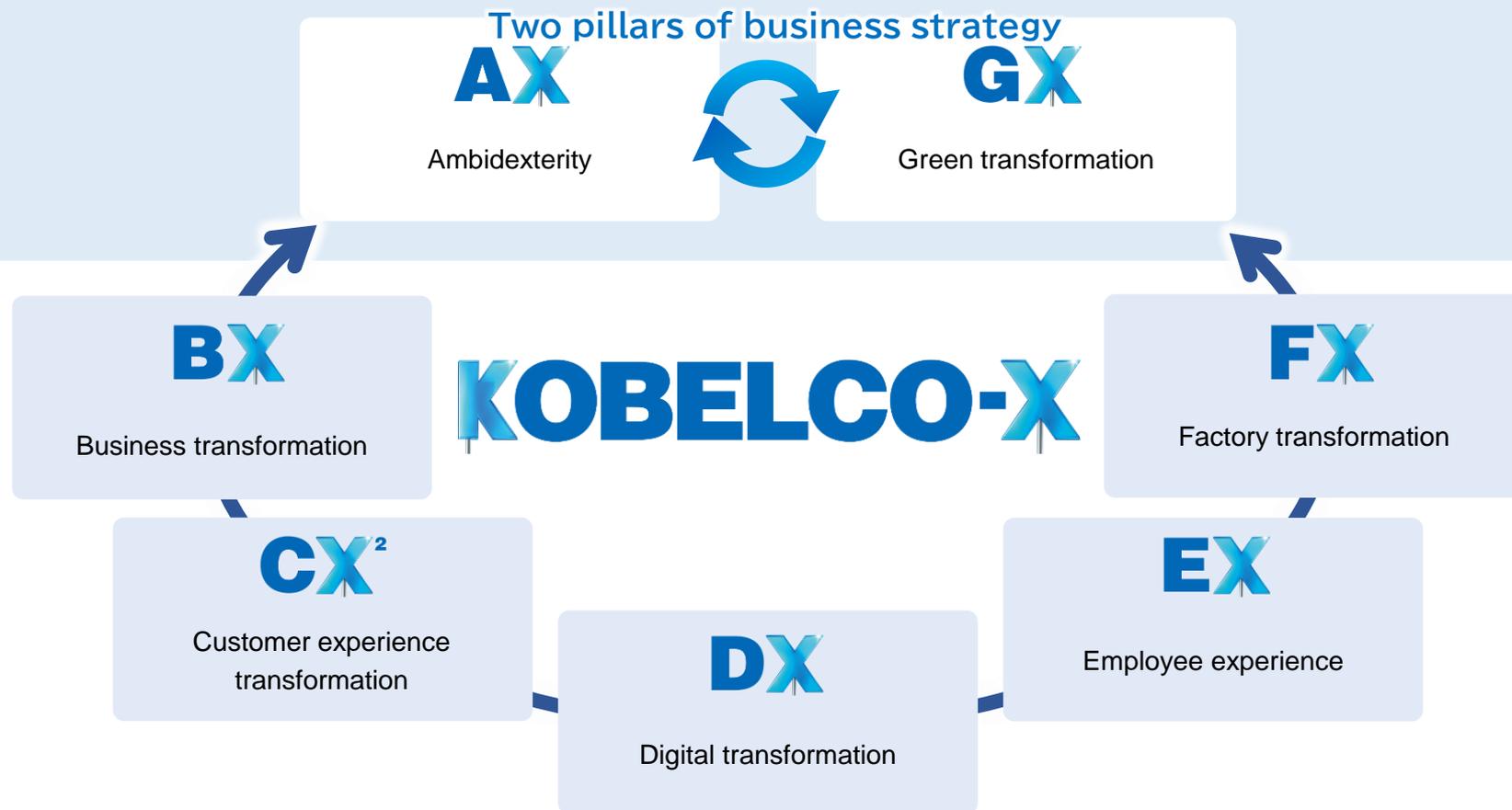
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3. Kobelco Group's Digital Transformation (DX) Strategies
4. Four Transformation (X) Initiatives, Driven by Digital and Data (xD)
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6. Summary

Strengthen the foundation and reap the results of growth measures



KOBELCO-X is a collective term for the Kobelco Group's unique seven transformation (X) initiatives aimed at facilitating the transformation into an appealing company and achieving its business strategy.

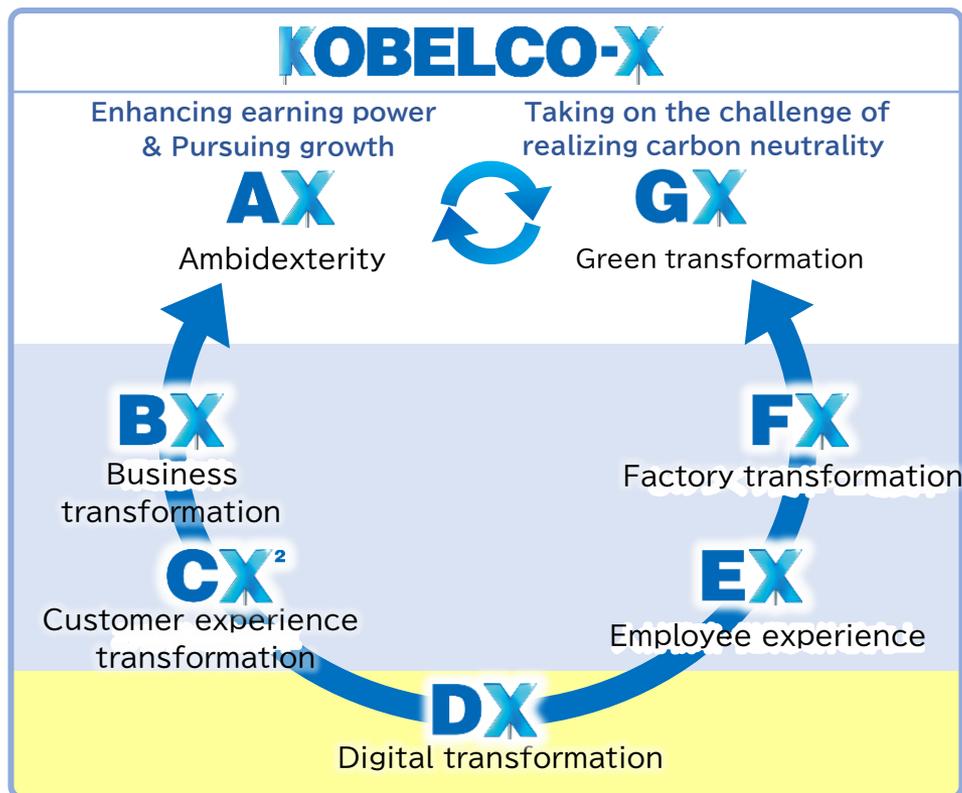


Transformation to realize business strategy

- The KOBELCO-X transformation (X) initiatives contribute to enhancing corporate value in various ways.
- ➔ In today's presentation, we will explain our digital transformation (DX) and how it relates to other X initiatives.

Business entity that drives innovation into the future

Transformation into an appealing company



Relation with corporate value improvement

Item	Reduce the cost of capital	Improve the growth rate	Improve profitability
<b>BX</b> Business transformation		●	●
<b>FX</b> Factory transformation	●		●
<b>CX<sup>2</sup></b> Customer experience transformation		●	●
<b>EX</b> Employee experience		●	●
<b>DX</b> Digital transformation	●	●	●

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5. GX and AX, Driven by Digital and Data (xD)
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# KOBELCO-X

Concept behind



- (1) **Transformation** aimed at continuous evolution
- (2) **Integration** across Kobelco Group's diverse businesses
- (3) **Intersection** of various individuals and activities

## ■ Raise transformative awareness → Transformation

- ▶ Promote a mindset shift that not only sustains and strengthens existing businesses but also **encourages innovative ideas and ambitious initiatives that lead to creating new business opportunities**.
- ▶ Promote **the adoption and use of digital technologies**, such as generative AI. This involves the necessary **transformations in business processes**, which require both individual and organizational **changes in mindset and behavior (breaking the status quo bias and fostering awareness of continuous evolution)**.

## ■ Raise collaborative awareness → Integration and Intersection

- ▶ **Creating a framework and foster mindset shift** for information sharing and other initiatives that **make cross-segmental collaboration a standard practice**, while **fostering cross-divisional team chemistry** unique to Kobelco Group.

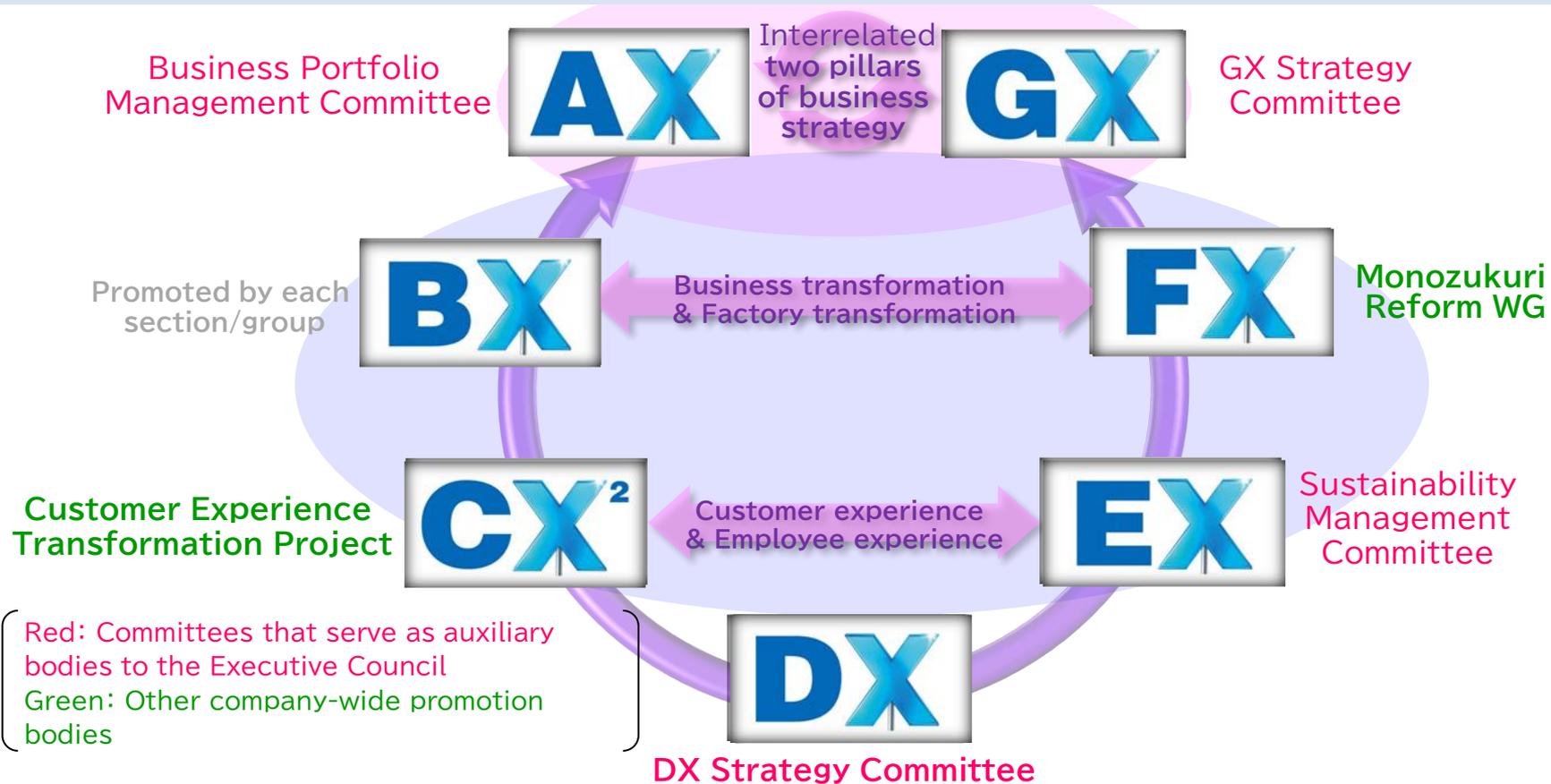
**→ Demonstrate the Group's uniqueness by raising our transformative and collaborative awareness, utilizing KOBELCO-X as a common language across business segments.**

## Seven Transformation Initiatives in Relation to the Business Strategy

- **AX** and **GX**, located at the top, represent “Enhancing earning power and pursuing growth” and “Taking on the challenge of realizing carbon neutrality.”
- **BX**, **FX**, **CX<sup>2</sup>**, **EX**, located in the middle, represent the four transformation initiatives necessary to achieve **AX** and **GX** and enhance corporate value.
- **DX**, located at the bottom, is the means to realize, accelerate, and advance all of the above.

## Promotion Structure for the Seven Initiatives

- Each initiative is promoted by various committees that serve as auxiliary bodies to the Executive Council, as well as company-wide working groups and projects.\*



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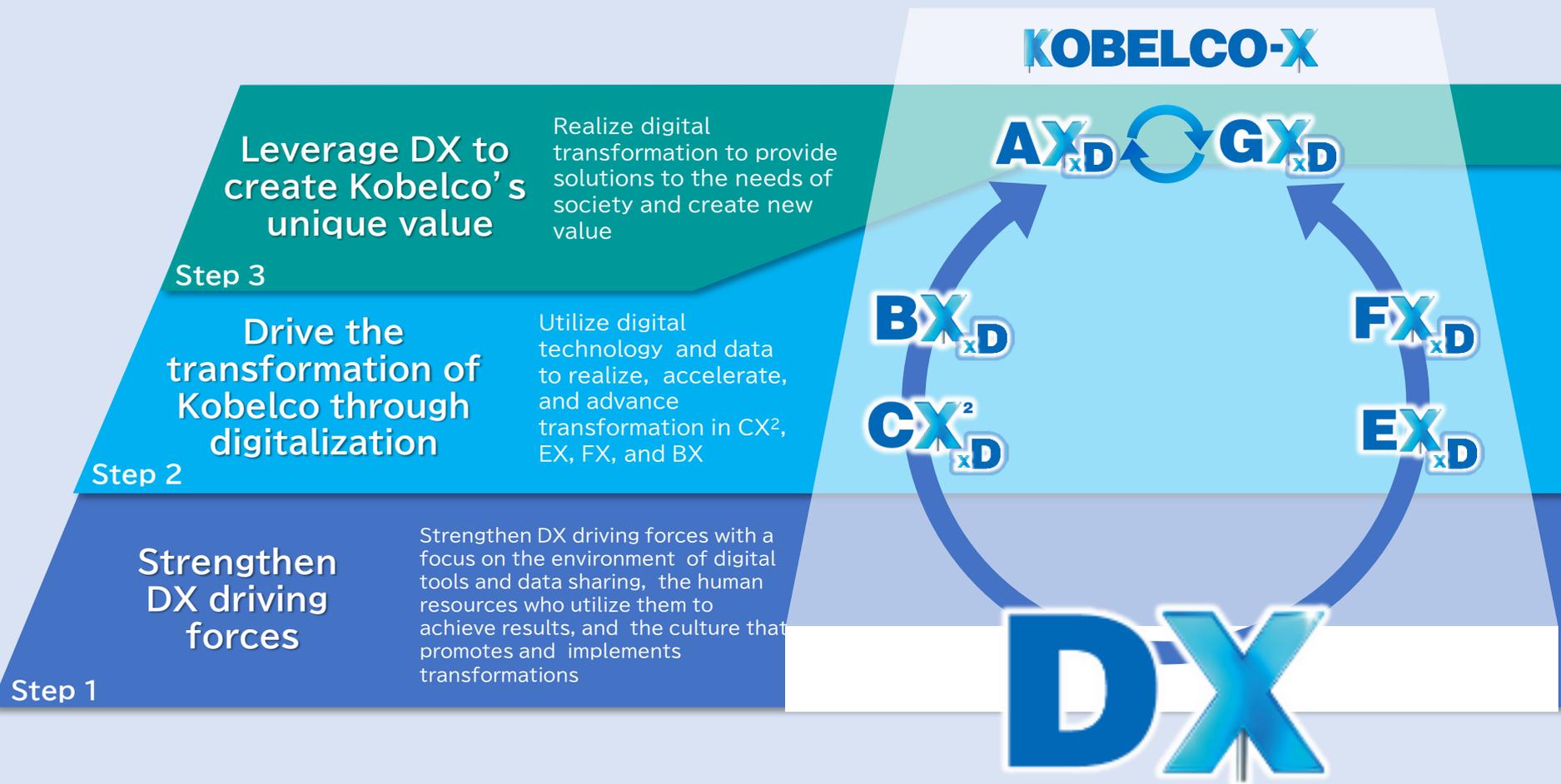
A large, stylized 'DX' logo in the background, rendered in a blue, textured, brush-stroke style. The 'D' and 'X' are significantly larger than the text below them.

**DX**

# Digital Transformation

Transformation through the Use of Digital and Data

- Our Group's DX strategy is to realize, accelerate, and advance KOBELCO-X transformation initiatives of BX, FX, CX<sup>2</sup>, and EX **by utilizing digital technology and data (xD: by digital & data)**, along with AX efforts that aim to reduce the cost of capital and enhance earning power.
- It also aims to increase corporate value by leveraging digital technology and data for the creation of new businesses (AX), as well as for solutions to carbon neutrality (GX) and other societal challenges.



The key themes for "value creation" in the DX strategy undertaken in the previous medium-term management plan are connected to each of KOBELCO-X's activities. By clarifying how these themes relate to business strategies, we aim to accelerate the implementation of DX.

## Key themes for "value creation" in the DX strategy launched in the previous medium-term management plan (Fiscal 2021–2023)



Transform the Kobelco Group to accomplish the Medium-Term Management Plan (Fiscal 2024–2026)

- Kobelco Group's DX will continue to be promoted in three stages.
- In step 1, we will strengthen our **DX driving forces** with a focus on **human resources**, **environment**, and **culture** to propel DX forward. In Step 2, we will utilize digital technology and data to enhance cross-segmental collaboration and achieve **business transformation** in BX, FX, CX<sup>2</sup>, and EX.
- In Step 3, we will provide solutions to the needs of society, including the realization of a carbon neutral society and the alleviation of labor shortages, and deliver new value to our customers, while pursuing the uniqueness of our Group utilizing its diverse businesses, technologies, and human resources.

## DX Driving Forces **x**D

**Human resources:** Employee digital utilization and transformation skills  
 Increase DX personnel by continuing DX personnel development and digital tool training for employees.

**Environment:** Use of digital tools and data  
 Develop the hardware environment necessary for promoting DX, such as generative AI, VR/AR, RPA/BI tools, and data analysis infrastructure

**Culture:** Mindset and support from the organization and people around  
 Foster an organizational culture that promotes DX by strengthening internal public relations, organizing award systems, and providing digital literacy and mindset training for all employees.

<b>BX</b> Business transformation	<b>CX<sup>2</sup></b> Customer experience transformation
<b>EX</b> Employee experience	<b>FX</b> Factory transformation

**AX**  
Enhancing existing businesses × Exploring new business opportunities

**GX**  
Taking on the challenge of realizing carbon neutrality

**x**D ↑  
 Realize, accelerate, and advance transformation through digitalization

**x**D ↑  
 Leverage digitalization and digital transformation to provide solutions to the needs of society and create new value

**Step 3** Leverage DX to create Kobelco's unique value

**Step 2** Drive the transformation of Kobelco through digitalization

**Step 1** Strengthen DX driving capabilities

Organization

Environment

Human resources

Technical development

## 1 Developing companywide DX strategy

Clarifying the purpose and direction of companywide DX

Establishing a cross-divisional structure

Reorganizing the DX Strategy Committee to collaborate with each of KOBELCO-X transformation initiatives

## 2 Supporting hands-on initiatives in the workplace

Creating an environment that empowers employees to identify issues and find solutions using digital technologies **Env**

Providing support for training and implementation of no-code and low-code tools **Env**

## 3 Establishing a data utilization infrastructure **Tech**

Developing infrastructure for integrated data collection, storage, and analysis (e.g., DataLab®, CRM/SFA implementation) **Env**

Ensuring security and governance **Env**

## 4 Developing human resources & transforming organizational culture

Developing DX personnel\* (digital skills + operational understanding) \* ITE = IT evangelist. DS = Data scientist **HR**

Fostering a culture that embraces failure and ambitious initiatives & Increasing opportunities and systems for recognizing achievements **Org**

Shifting the mindset of executives and line managers **Org** **HR**

## 5 Utilizing generative AI and other new technologies **Tech**

Promoting the use of generative AI for general and specific tasks & Introducing and developing new technologies, such as AI, remote control, and VR. **Env**

Using new technologies to enhance business efficiency, as well as creative tasks, like design, quality analysis, and customer service. **HR** **Org**

Establishing usage rules and guidelines **Env**

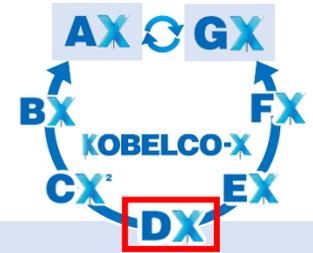
Continued from the previous mid-term

Enhanced in the current mid-term

Newly added in the current mid-term

# DX

We will realize, accelerate, and advance CX<sup>2</sup>, EX, FX, and BX through strengthening DX driving forces. These transformation initiatives lead to AX (enhancing earning power and pursuing growth) and GX (taking on the challenge of carbon neutrality), thereby increasing corporate value.



## DX Driving Forces

**Environment:** Use of digital technologies and data

**Business transformation using latest technologies**

- **Use of generative AI in daily operations**

We have begun the demonstration of the effectiveness of Microsoft365 Copilot, following the in-house ChatGPT ChaChat KIKoCa. We will conduct a large-scale demonstration of business efficiency improvement combined with in-house data in fiscal 2025.

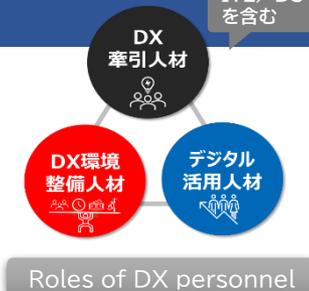
- **Use of generative AI in specific operations**

We will build generative AI systems dedicated to specific tasks. In fiscal year 2024, we put into practical use a system that indicates causes and countermeasures from previous similar disaster cases. We will also apply this to the quality technology field by utilizing common elements.

**Human resources:** Employee digital utilization and transformation skills ITE/DSを含む

### DX personnel development

Three roles have been defined to ensure all members participate in DX promotion. The training for each role has been enhanced and expanded to include executives and all employees beginning in fiscal 2024.



**Culture:** Mindset and support from the organization and people around

### Fostering DX promotion momentum

We have regularly distributed DX news and organized places for employees to learn from each other. In addition, we began dialogue events between employees and executives, as well as VR and digital tools experience sessions



**Noteworthy DX Companies 2025**

Kobe Steel was selected for inclusion in Noteworthy DX Companies 2025 under the Digital Transformation Stock Selection (DX Stocks) 2025 for the first time in April 2025.



- Three types of **DX personnel** have been defined to ensure every Group employee, not limited to members of DX/IT divisions (DX promoting personnel), **promotes DX as part of their responsibility**.
  - (1) **DX driving personnel**, who plan and implement DX for business operations in each workplace. This category includes **IT evangelists (ITE)** and **data scientists (DS)**.
  - ➔ (2) **DX environment developing personnel**, who will foster an environment and culture that encourages business divisions, offices, and other organizational units to engage in DX/BX, and
  - (3) **Personnel with digital utilization skills**, who will promote DX/BX relevant to their specific tasks and implement the transformation.

Starting in fiscal 2024, we have provided training for each type of personnel.

## Pursuit of Kobelco Group's uniqueness through DX

Provide support for realizing, accelerating, and advancing DX.

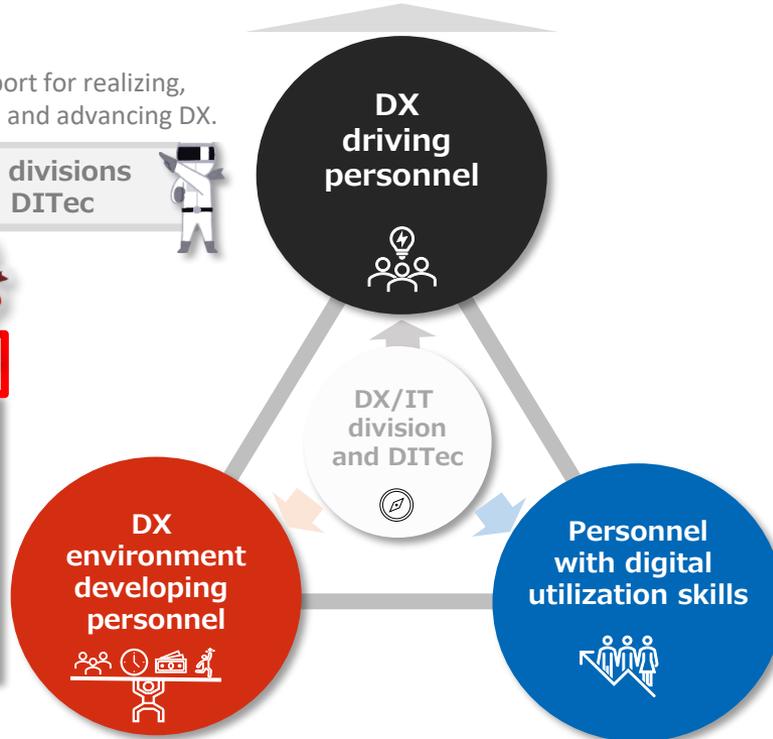
**DX/IT divisions and DITec**

Create a supportive environment for digital transformation.

### Directors & line managers

- Promoting BX/DX by
- ▶ Clarifying division-level policies for improvement
  - ▶ Securing resources (people, time, money)
  - ▶ Collaborating and coordinating with other divisions

Approx. 670 people\*



Develop and implement DX themes to facilitate business transformation and create value.

### IT evangelists & data scientists

- Realize DX realization by
- ▶ Planning DX projects
  - ▶ Implementing DX projects
- (Planning BX projects by digital & data)

Approx. 610 (980) people\*

Promote DX initiatives as part of their own tasks.

### All employees

- Realize BX/DX by
- ▶ Joining BX/DX projects
  - ▶ Implementing BX/DX tasks
- (Incl. simply inputting and viewing data)

Approx. 1,500 (38,000) people\*

\* The number of personnel as of the end of 2024 in Kobe Steel (Groupwide)

# Enhancing DX Driving Forces

## -DX Environment Developing Personnel & Organizational Culture-

Create a supportive environment for digital transformation.



Directors & line managers

Promoting BX/DX by

- ▶ Clarifying division-level policies for improvement
- ▶ Securing resources (people, time, money)
- ▶ Collaborating and coordinating with other divisions

DX environment developing personnel



Approx. 670 people\*

### ■ Changing the mindset of **DX environment developing personnel (executives)**

- Executives are leading efforts to foster workplace culture that promotes business transformation (BX) by leveraging digital technologies (xD) in business divisions.

➔ **All executives participate** in planning/implementing DX training and BX/DX use case sharing sessions.

## BX/DX Forum to learn about new digital technologies

September 4, 2025

Visualizing management information

with KPI/ROIC dashboards

Making data accessible

through intuitive operation using maps

Promoting the use of Microsoft Copilot

Utilizing no-code/low-code tools

for more efficient business operations



As technology advances, DX-related business areas are expanding. Particularly, the use of digital technologies is rapidly increasing in the daily operations of individual employees.

## Changes in the DX environment surrounding our business

### 1. Expanding business areas where digital technology can be used

- **R&D** : Simulation technology, material searches using AI, creation of databases of internally developed technologies
- **Production** : Smart factory, monitoring of facilities using IoT, predictive maintenance
- **Sales** : Building customer information platforms, demand prediction through data analysis
- **Management** : Visualization of operations with BI tools, workflow systemization
- **Daily operations** : Web conferencing, chat tools, document creation and minutes creation using generative AI, etc.

### 2. Democratization of technology

- The widespread use of no-code and low-code tools enables operation improvement without expertise
- The new availability of high-performance but low-cost sensors and cameras has advanced workplace-led digitalization

#### Department operations

- Use of no-code and low-code tools (kintone, Power Automate/Power Apps, etc.)

#### Individuals' duties

- Web conferencing
- Chat
- Generative AI

#### Technology development Technology development

- Inspection and measurement (digitalization)
- Production control and planning
- AI and data science
- Mechatronics and automation

With the **DX Strategy Committee** taking the lead, we are strengthening the **DX driving force** and promote DX in each workplace. Along with this, **the Digital Innovation Technology Center (DITec)** is leading the technology development in the digital field

- The **Digital Innovation Technology Center (DITec)** was established in the Technical Development Group to strengthen and accelerate **technology development and business application** in the ICT and AI fields in April 2021, along with the establishment of the DX Strategy Committee.
- ➔ We will use data to connect the supply chains of the KOBELCO Group and will make full use of digital technology to create new value

## Thorough digitalization

- (1) Seeing and measuring

## Value creation in the digital space

- (2) Thinking and predicting the future
- (3) Learning from data

## Conversion into physical value

- (4) Moving and operating

### Measurement technology

- Non-destructive inspection
- Process measurement
- Mechanical/precision measurement
- Measurement data processing

### Production management

- Production control
- Operational support
- Business analysis

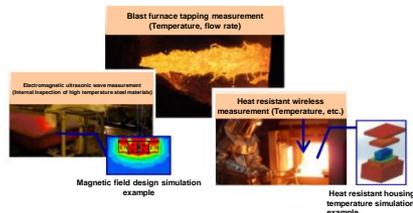
### AI and data science

- MI
- DB
- Image recognition
- Text mining
- Big data

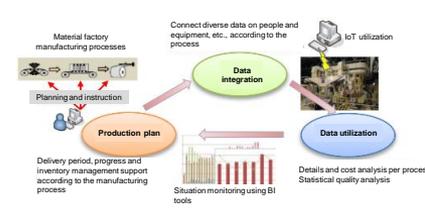
### Mechatronics

- Mechatronics
- Welding robot control
- Robotics
- Hydraulic control

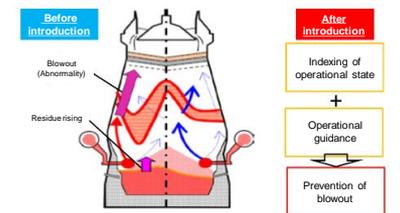
### Process measurement and advanced inspection technology for special environments



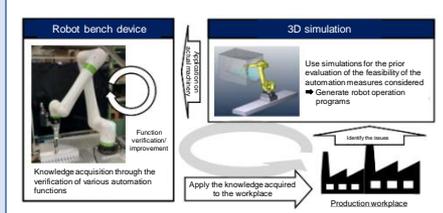
### Development of a management and business model for multi-product, variable-quantity factories



### AI-based blast furnace operation using sensor data



### Automation solutions utilizing robotics



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A large, stylized 'BX' logo in the background, rendered in a light blue, textured font. The 'B' is a solid blue block letter, and the 'X' is a blue letter with a white outline and a vertical line through its center. The background of the slide is a light blue, textured surface.

**BX**

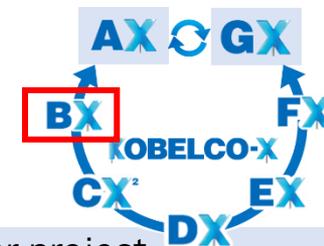
## **Business Transformation**

Transformation of Operational Processes

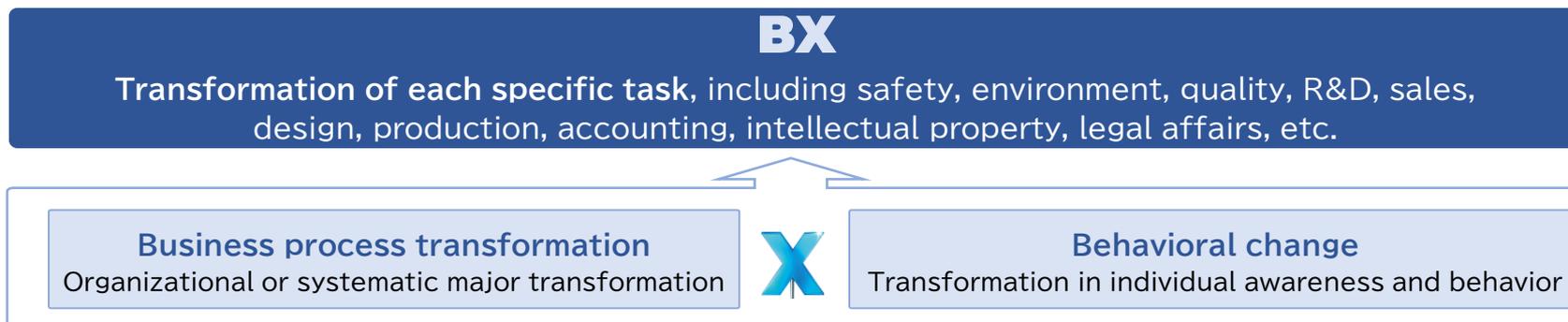
# BX

## Business Transformation

Promoting digitalization in manufacturing processes and office operations to enhance production efficiency



- BX is the only initiative that has no Groupwide steering bodies in the form of a committee or project. This is because the target of BX is the transformation of various business operations, which are carried out in individual workplaces and tasks. Both CX<sup>2</sup> and FX are considered elements of BX.
- BX can only be realized through **business process transformation**, which involves organizational and systematic initiatives for a major change, combined with **behavioral change**, which is the transformation of individual awareness and behavior.



## Individual skills and experiences at workplaces





- Promoting the use of generative AI technology in specific tasks across various areas, including safety, quality, and development.
- Effectively utilizing the knowledge from the diverse businesses of the Kobelco Group by combining generative AI with the extensive amount of accumulated data
- ➔ Aiming for dramatic improvements in operational efficiency, the transfer of knowledge, experience, and technology, as well as in human resource development, thereby improving the quality of each operation.

## Introduction of Accident Report Search System

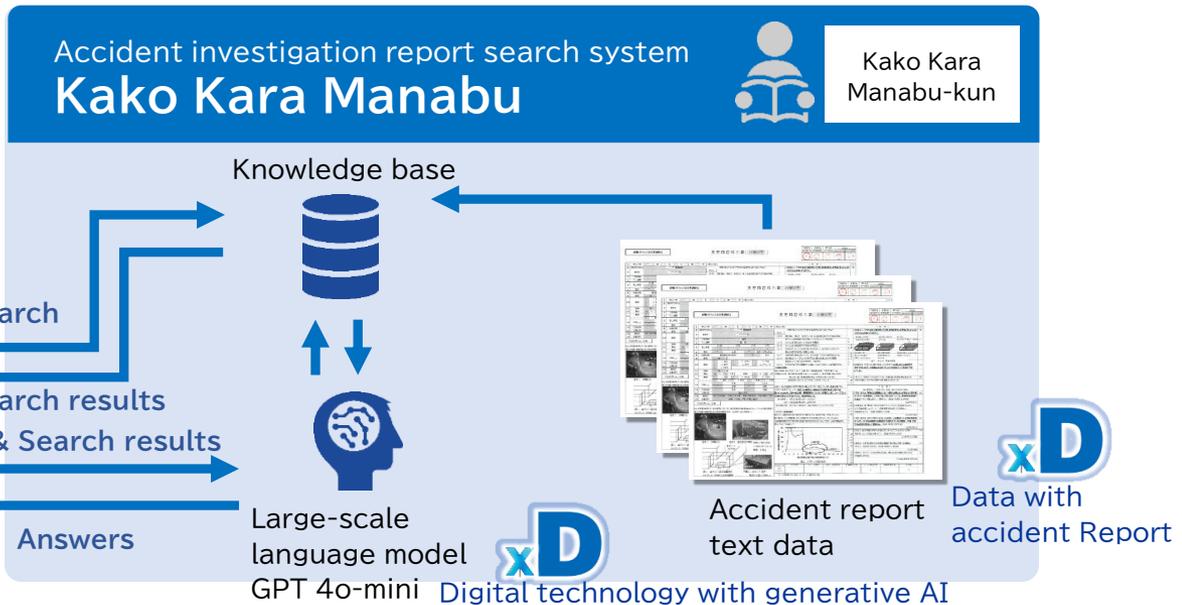
- We developed a companywide system using generative AI technology to quickly search similar accident cases from a large database of past accident reports.
- ➔ Allowing employees at each workplace to easily access information about past accidents relevant to their operations. The system serves as an educational tool to enhance workers' risk prediction skills.
- ➔ Increasing opportunities to share potential dangers within the workplace, leading to improved safety awareness.

This system allows users to search for related accident reports by entering any of the following:

Name of operation

Type of accident

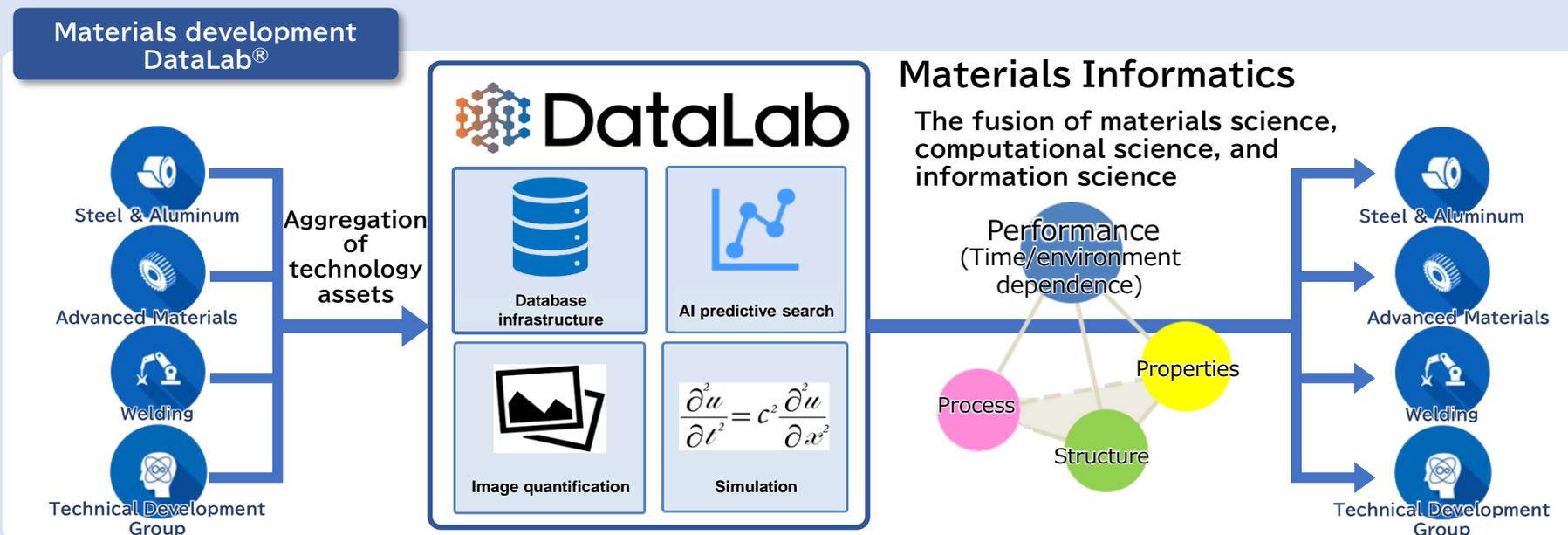
Cause of accident



\*(Materials Informatics)



- We developed the DataLab® for the shared use of data analysis know-how across businesses. We also use this in materials development to accelerate materials development across business segments, which is a strength of the Kobelco Group.



- Theories, experiments, simulations, data analyses, and AI are used to predict material properties based on a recipe (raw materials and production methods). This approach enables an efficient search for recipes that can realize the materials desired by customers and significantly accelerates the materials development.
- ➔ This approach has already been applied to the development of welding materials and is now being extended to steel products (steel sheets and wire rods and bars) and copper sheets.

The logo consists of the letters 'F' and 'X' in a bold, blue, sans-serif font. The 'F' is solid blue, while the 'X' has a 3D effect with a blue-to-white gradient and a thin black outline.

# Factory Transformation

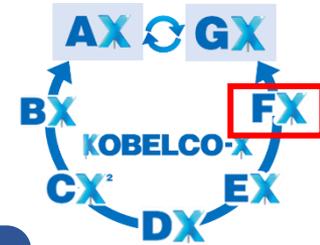
Manufacturing and Factory Transformation

# FX: Kobelco Group's Unique FX Initiatives



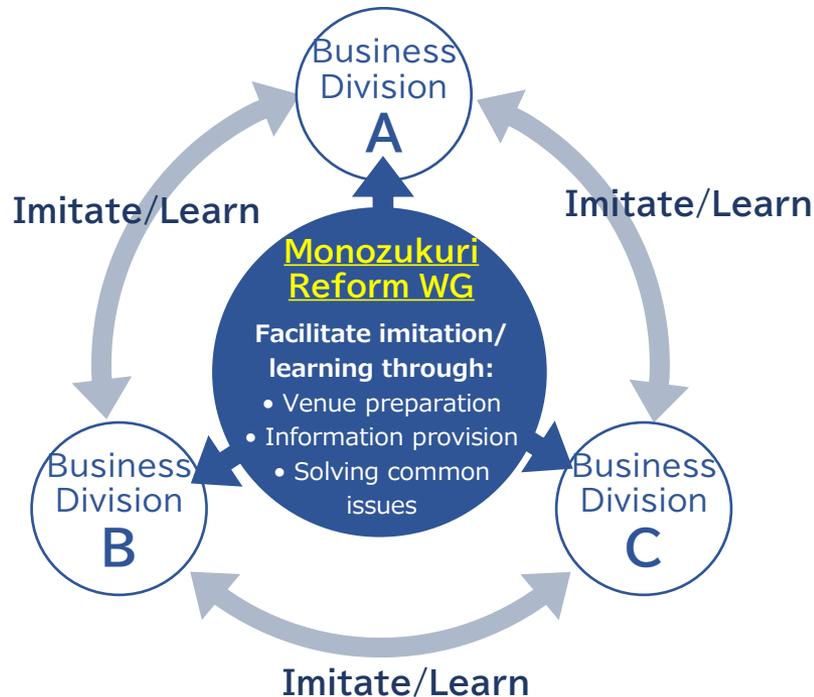
## Monozukuri/factory transformation

We are working to address the labor shortage and the skill transfer issues by employing (imitating/learning) good practices in different fields and outside the company among business divisions for the efficient promotion of FX.

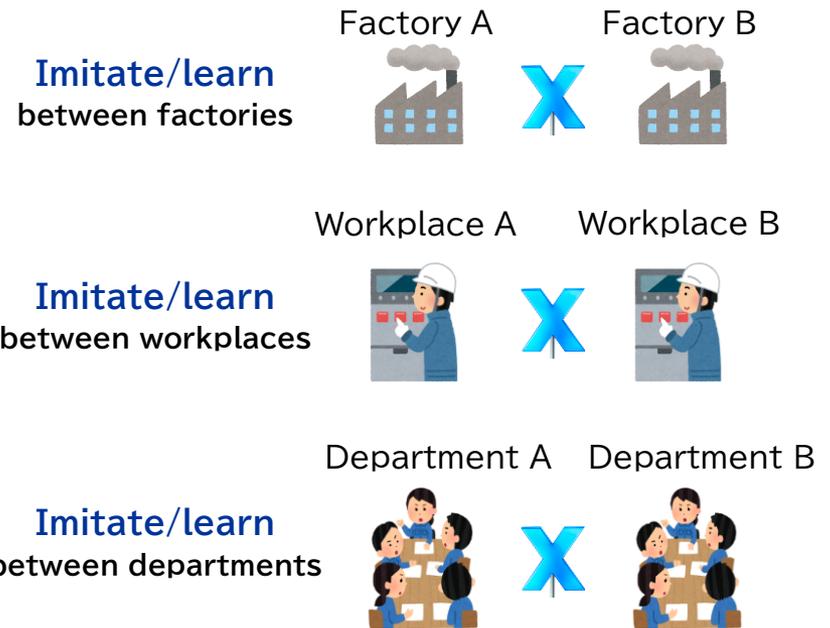


→ See page 59 for DX applications in monozukuri (manufacturing)

### FX in the entire Kobelco Group Intersegmental efforts for imitating/learning



### FX within the division Imitating/learning within the division



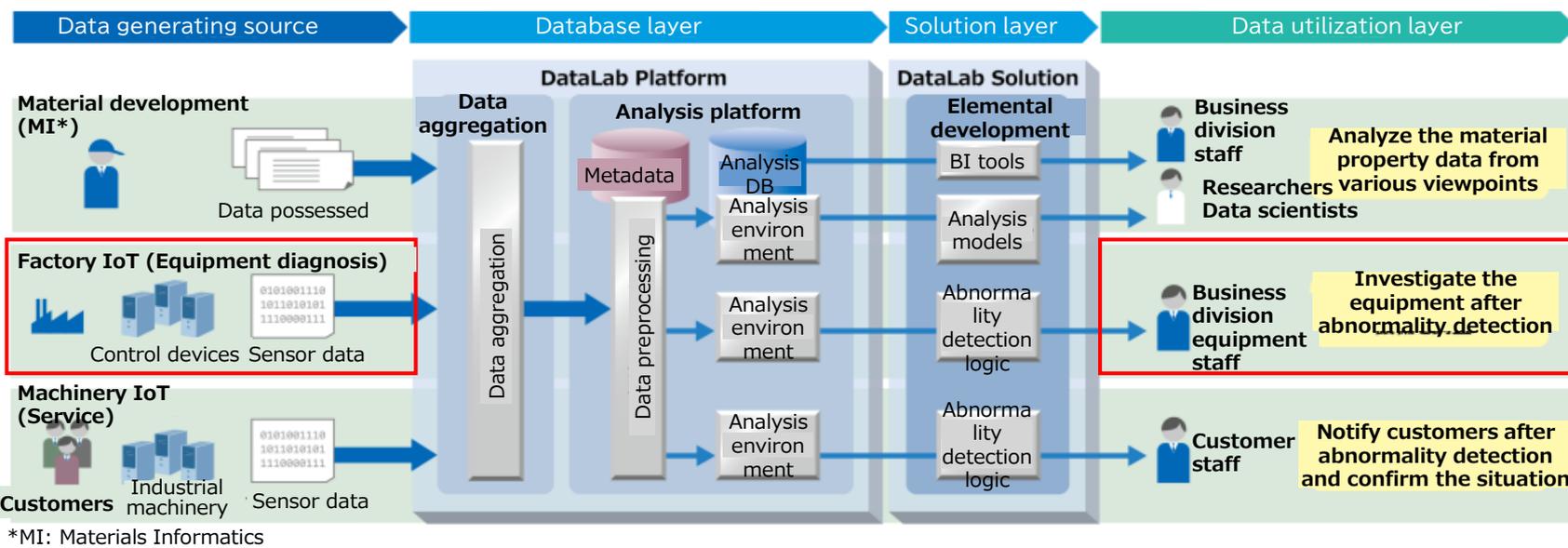
# < Case Example > Sustainable Manufacturing that Earns Society's Trust (Stabilization and Advances)



- We will respond to the needs of customers for a stable supply of our products by stabilizing and advancing our operations with digital technology.
- Analysis of big data analysis combined with mechanism analysis enables the early prediction/detection of abnormalities and a stable supply
- The introduction of a digital twin evaluation environment allows for stable and rapid start-ups of future large-scale renewal of facilities.

## < Case example 1 > Integrated maintenance system supporting stable operations

This equipment maintenance system collects and accumulates all the data from production equipment, combining analysis of big data and mechanism-based analysis.

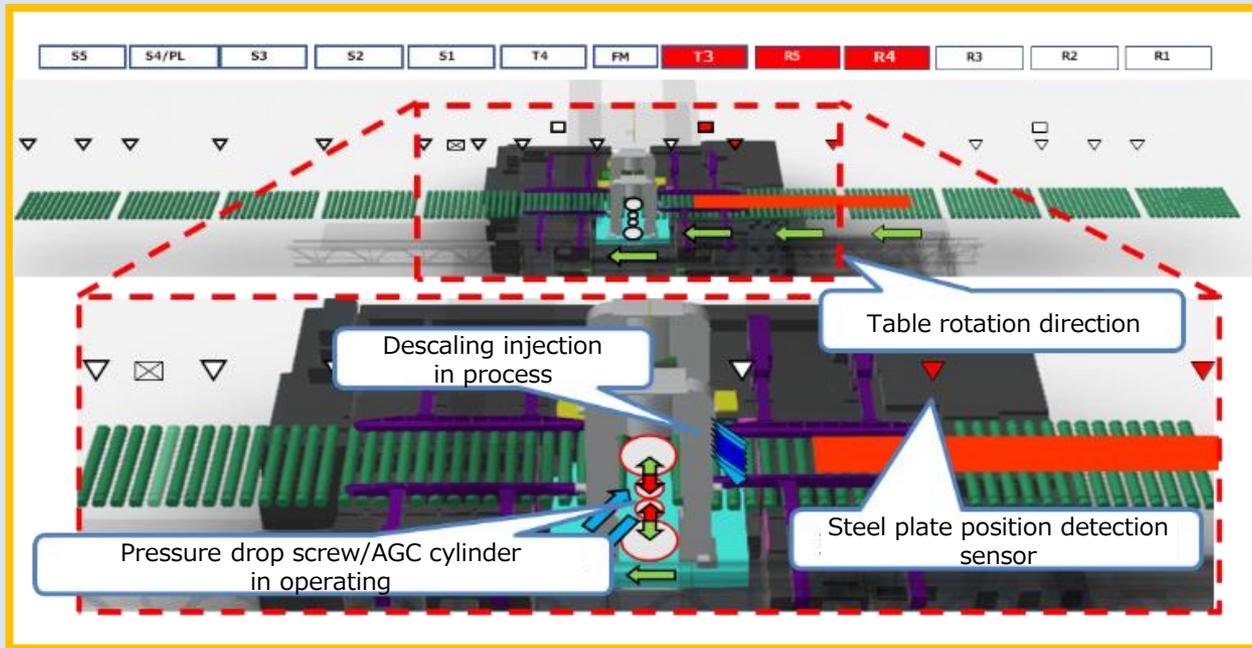




- We will respond to the needs of customers for a stable supply of our products by stabilizing and advancing our operations with digital technology.
- Analysis of big data analysis combined with mechanism analysis enables the early prediction/detection of abnormalities and a stable supply
- The introduction of a digital twin evaluation environment allows for stable and rapid start-ups of future large-scale renewal of facilities.

< Case example 2 > Digital twins taking on the challenge of continuous evolution

In the project completed in January 2024 to refurbish the finishing mill at the Kakogawa Works steel plate factory, a rapid start-up was successfully achieved by simultaneously utilizing operation simulators for both operator evaluation and familiarization.



Offline simulator screen



Control station refurbished



Operation simulator environment (Digital twin)



**CX<sup>2</sup>**

## **Customer Experience Transformation**

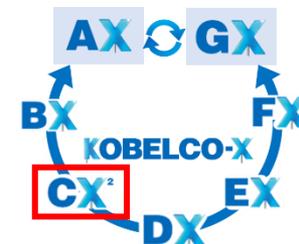
Providing new value to customers through the integration of "technology x technology" and "markets x technology"

# CX<sup>2</sup> : What is CX<sup>2</sup>?

# CX<sup>2</sup>

## Customer Experience Transformation

Increasing customer trust and creating new value by identifying customer concerns more accurately and providing solutions using Kobelco Group's diverse technologies, products, and services.



- **CX<sup>2</sup>** is a term created by our Group, as opposed to CX (conventional way of providing value to customers), which was implemented by individual business segments with a focus on QCDS (Quality, Cost, Delivery, and Service).
- In contrast, **CX<sup>2</sup>** (customer experience transformation) in KOBELCO-X is an initiative to provide new value to customers that is unique to the Kobelco Group. We named **CX<sup>2</sup>** from CXX which incorporates the two meanings of "**multiplication of CX (X)**" across businesses and "Kobelco Group's unique **transformation of CX (customer experience) (X)**".



Providing Kobelco Group's unique solutions to customers



Customer information (Multiple divisions)

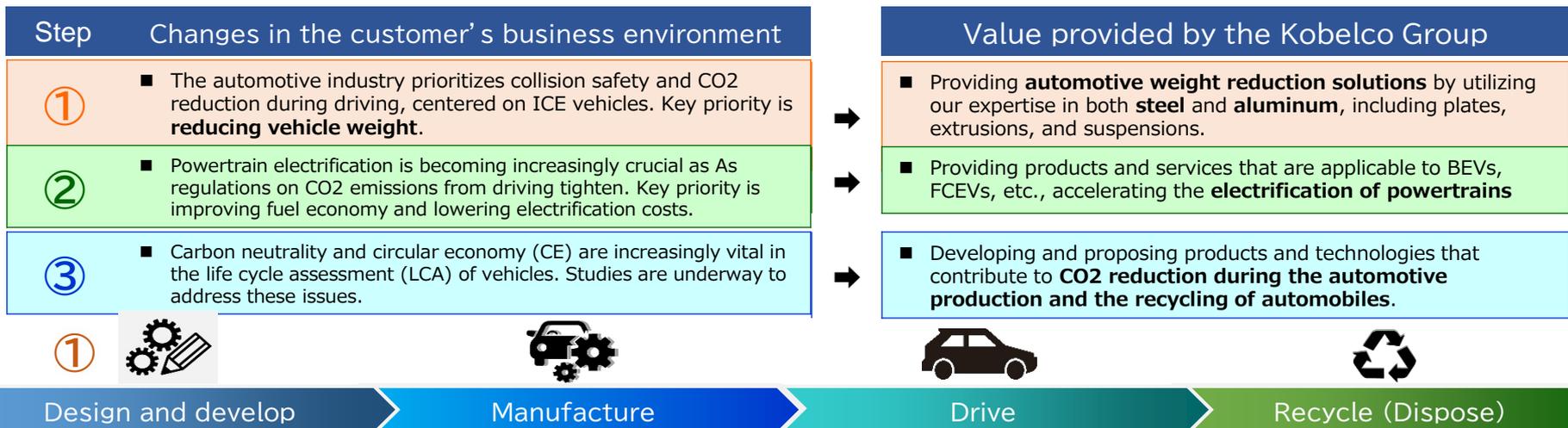
Customer information (Single division)

Market information

Technologies & products (Single division)

Technologies & products (Multiple divisions)

- Customers face increasingly diverse and complex challenges→The range of products and technologies we can offer is also expanding.
  - ➔ **Broader cross-segmental collaboration**



<p><b>Multi-materials application technology</b></p> <p>Low-cost, lightweight, and low-CO<sub>2</sub> materials utilized most effectively.</p> <p>① </p> <p>Dissimilar metal design, forming, joining solutions</p>	<p><b>Green (low-CO<sub>2</sub>) materials (Steel and aluminum)</b></p> <p>CO<sub>2</sub> reduction in materials</p> <p>③ </p> <p><b>Kobenable Steel</b> Low-CO<sub>2</sub> blast furnace steel products</p> <p>Steel &amp; Aluminum</p> <p>Engineering</p>	<p><b>Multi-materials, lightweight materials, welding materials, and application technologies</b></p> <p>CO<sub>2</sub> reduction through vehicle weight reduction</p> <p>① </p> <p>High-tensile strength steel sheets</p> <p>① </p> <p>Aluminum sheets for automotive panels</p>	<p><b>High-functionality materials</b></p> <p>Achieving improved functionality, compactness, and energy savings of electromagnetic components</p> <p>② </p> <p>Soft magnetic material ELCH2</p> <p>Improving FCEV Performance</p>	<p><b>Environmental recycling machinery</b></p> <p>Disassembly and sorting of end-of-life vehicles (ELV)</p> <p>③ </p> <p>Car dismantling machine</p>
<p><b>High temperature / high pressure technology and equipment</b></p> <p>Development of new materials and new functional materials for low-CO<sub>2</sub> vehicles</p> <p>② </p> <p>Isostatic Press (IP)</p>	<p><b>Welding materials</b></p> <p>Environmentally friendly welding materials</p> <p>③ </p> <p>Non-copper coated solid wires (SE wires)</p> <p><b>Energy efficient facilities</b></p> <p>CO<sub>2</sub> reduction through improved energy efficiency</p> <p>③ </p> <p>Standard compressors</p>	<p>① </p> <p>Automotive aluminum extrusions and machined products</p> <p>① </p> <p>Aluminum forgings for automotive suspensions</p> <p>① </p> <p>Welding materials for high-tensile strength steel</p> <p>① </p> <p>Steel products for automotive valve springs</p>	<p>② </p> <p>NC titanium for fuel cell bipolar plates</p>	<p><b>Hydrogen utilization technology</b></p> <p>Hydrogen fuel supply to FCEV</p> <p>② </p> <p>Hydrogen station</p>

# CX<sup>2</sup> : DX to Realize Customer Experience Transformation

## (Use of Digital and Data)

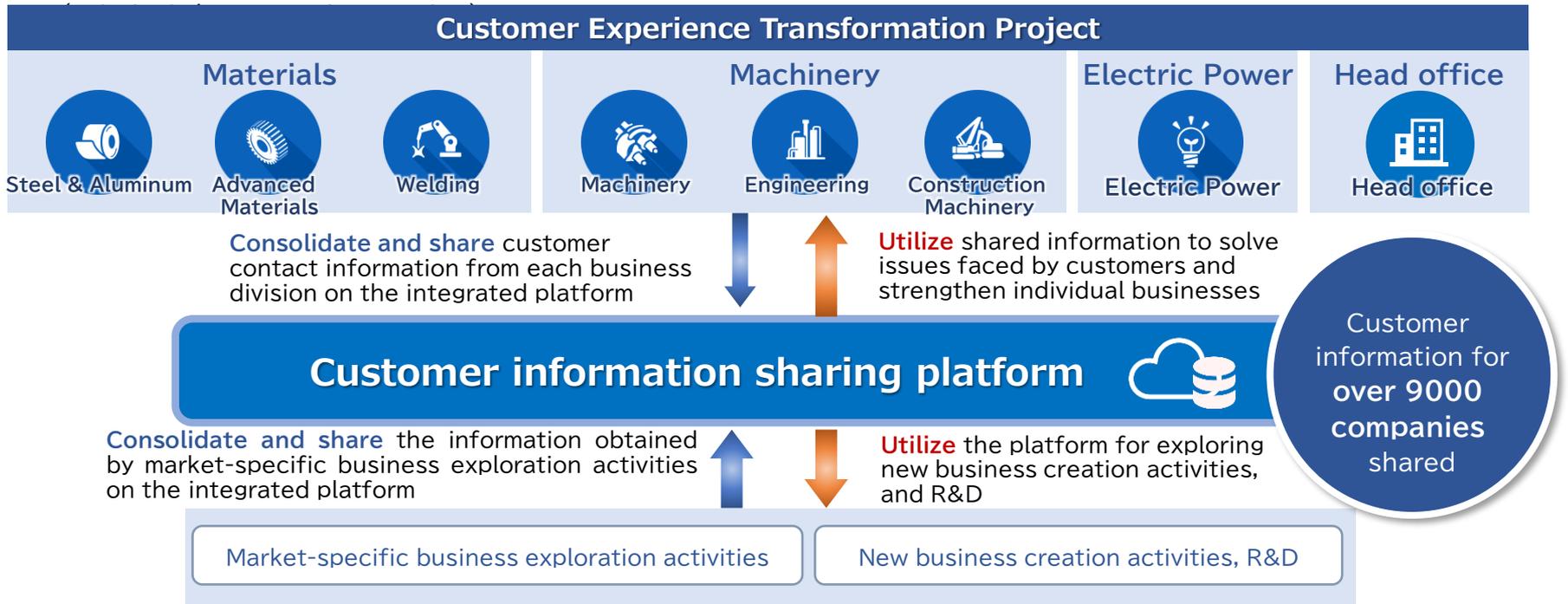


To improve customer experience, we promote the shared use of customer information across business divisions.

We offer distinctive solutions to customers by combining the knowledge and information gained from our operations across our diverse business domains.

The shared information is also utilized to create new value in emerging businesses and projects, as well as in R&D.

- In January 2023, **Customer Experience Transformation Project** was established under the Executive Council, introducing a new concept in which customers are viewed as customers of the entire Kobelco Group, not just of specific business segments.
- In April 2024, **SFA\* was introduced as a customer information sharing platform.** By promoting the shared use of customer contact information, we aim to create examples of **delivering new value to customers through collaboration across business segments.** \*SFA=Sales Force Automation



A large, stylized 'EX' logo in the background, rendered in a light blue, textured, brush-stroke style. The 'E' is a solid blue block letter, and the 'X' is a blue brush-stroke letter. The background is a light, textured blue.

**EX**

## **Employee Experience**

Human resource strategy and employee experience improvement

# EX

The Human Resources Strategy Subcommittee, a cross-divisional body under the Sustainability Management Committee, takes the lead in promoting various measures.

We are working on both value enhancement and risk management in tandem with management strategies.

## Three approaches for our human resource strategies

Enhancing organizational diversity

Encouraging the growth and initiative of every employee

Creating a work environment where employees can play active roles

### Area of focus

Response to future risks

Response to growth and key areas

Promoting employee satisfaction

Enhanced recruitment activities

D&I development

Developing challenger mindset



As part of the project, we sponsored and exhibited at the Expo 2025 Osaka, Kansai, Japan

## Effort to promote employee satisfaction

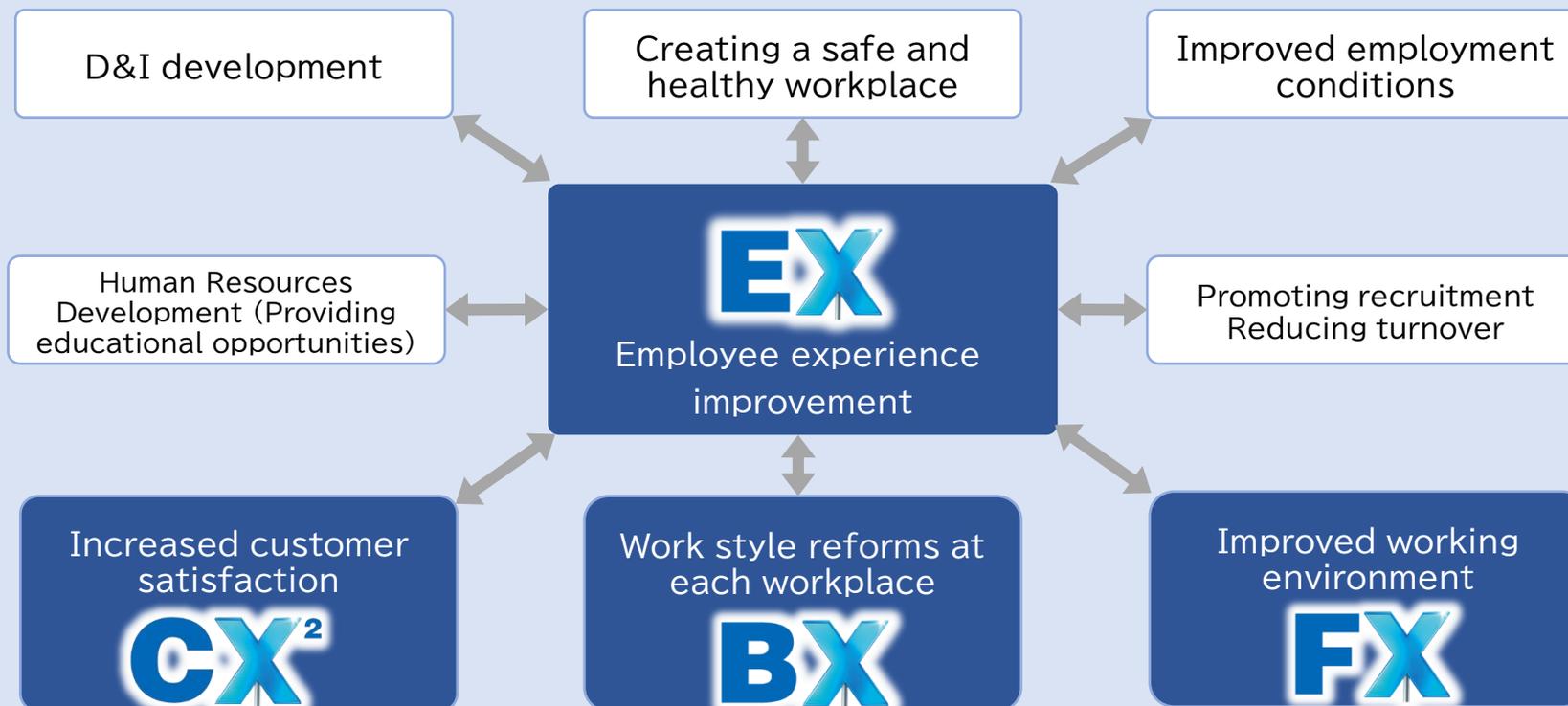
### KOBELCO 120th Anniversary Project

- ➔ We aim to create a corporate group full of pride, confidence, passion, and hope and increase a sense of fulfillment as a member of the Group.



- EX encompasses a variety of employee experiences and is closely linked to other KOBELCO-X initiatives.
- We aim to improve employee experience through promoting each of KOBELCO-X initiative.

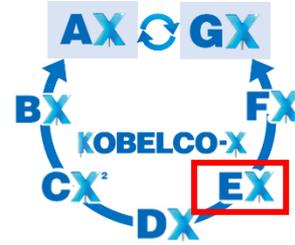
## EX-supporting measures and environments



# < Case Example > Digital Utilization for EX

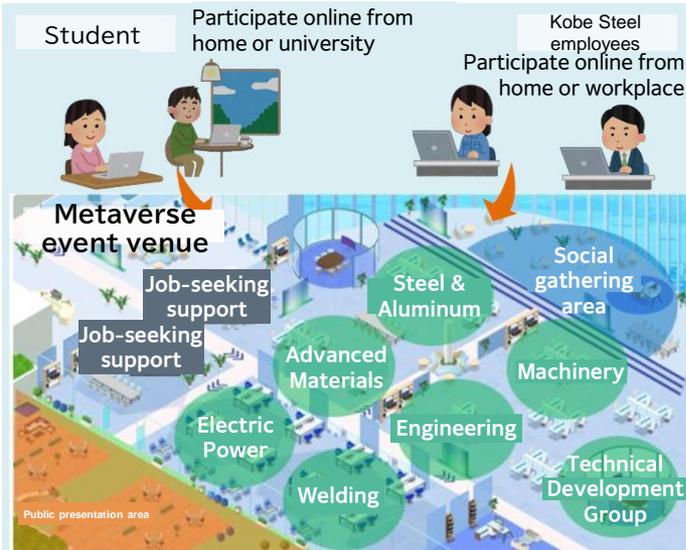


We introduced online dialogue and consultation systems for recruitment events and employee counseling. This initiative aims to revitalize communication by fostering an environment where anyone can easily participate at any time and from any place.



## Online recruitment activities

- We use both physical and virtual environments, including the metaverse. Applicants can casually experience our company's culture and working style, which helps to a better understanding of the company and increased motivation to apply.
- By providing opportunities for participation that transcend space limits, this system realizes equal information provision to students even if they are a long distance away or highly busy.



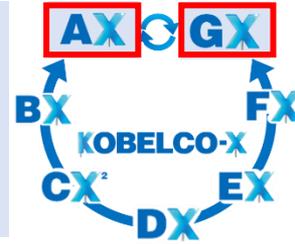
## Online counseling for employees

- We have introduced a system that allows the counseling in the metaverse space anonymously. The use of an avatar protects the privacy of the person seeking consultation and ensures psychological safety, creating an environment where employees can receive counseling in a casual setting.
- The aim is to encourage employees with concerns to seek consultation at an early stage, contributes to the maintenance of good mental health and improved engagement.



# Contents

1. The Medium-Term Management Plan (Fiscal 2024-2026) and KOBELCO-X
2. KOBELCO-X and Seven Transformation (X) Initiatives
3. Kobelco Group's Digital Transformation (DX) Strategies
4. Four Transformation (X) Initiatives, Driven by the Use of Digital and Data (xD)
- 5. GX and AX, Driven by the Use of Digital and Data (xD)**
6. Summary



- AX and GX correspond to the two priority issues under the Medium-Term Management Plan: (1) Enhancing earning power and pursuing growth, and (2) Taking on the challenge of realizing carbon neutrality. (Key measures and progress are reported and announced on various occasions.)
- ➔ This presentation is focused on the efforts to realize, accelerate, and advance AX and GX through digitalization.

## AX

### Ambidexterity

➔ “Enhancing existing businesses” × “Exploring new business opportunities”

## Enhancing Earning Power and Pursuing Growth

Enhancing earning power

➔【Materials】Rebuilding the operation bases for the future business environment

Pursuing growth

➔【Machinery】Achieving growth by capturing new demand and widening business domains

Mid-Term  
Priority Issues\*

## GX

### Green Transformation

➔ “Reducing CO<sub>2</sub> emissions in production processes” × “Contributing to societal reduction of CO<sub>2</sub> emissions”

## Taking on the Challenge of Realizing Carbon Neutrality

➔【Materials】【Electric Power】Reducing CO<sub>2</sub> emissions in production processes

Mid-Term  
Priority Issues\*



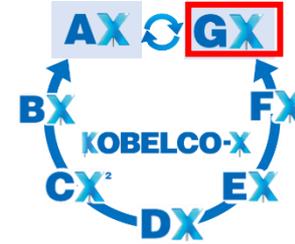
**GX**

**Green Transformation**



“Taking on the challenge of realizing carbon neutrality”

We are implementing initiatives that leverage digital technologies to promote carbon neutrality within our Group and across society.

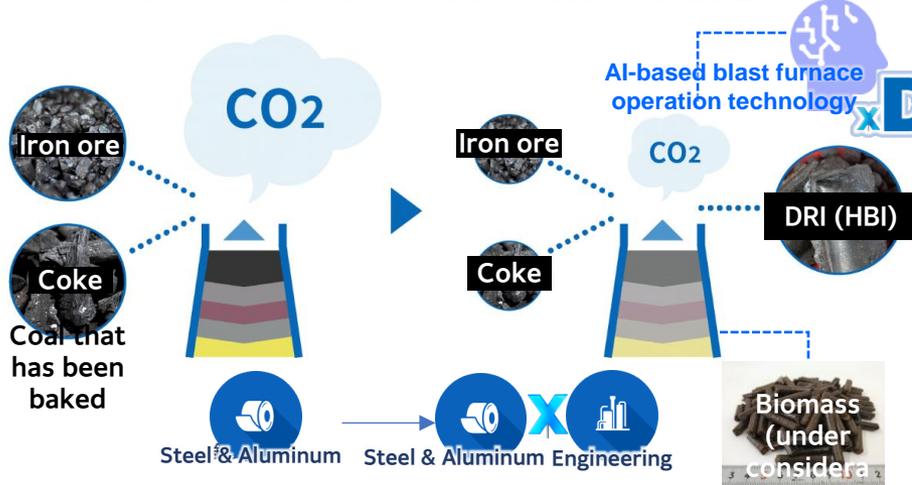


## AI-based Blast Furnace Operation Technology, Realizing the Value Provided by Kobenable® Steel

Kobenable® Steel achieves both environmental performance and quality in blast furnace steel by utilizing direct reduced iron (DRI), produced through our engineering business’s technology, in combination with digital technology—AI-based blast furnace operation technology—while maintaining the conventional blast furnace process. We will contribute to the decarbonization of manufacturing industry and the realization of a sustainable society by creating and delivering value in three areas: environmental value (CO<sub>2</sub> reduction), the reliability of steel material quality, and ESG.

### CO<sub>2</sub> reduction solution in the blast furnace ironmaking process, integrating steel, engineering and digital technologies

Reducing CO<sub>2</sub> emissions by minimizing the amount of coke used



Sophistication and stabilization in blast furnace operation



AI utilization for the stabilization of operations and product quality

Using AI to predict and control the temperature and air permeability inside the blast furnace to enable high-precision operation.

Creation and provision of environmental value



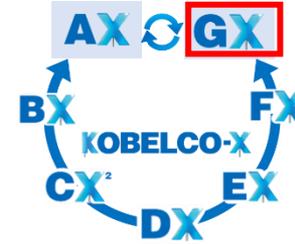
CO<sub>2</sub> reduction in the blast furnace process and supply of green steel

Contributing to the realization of a decarbonized society by supplying customers with green steel, which is manufactured with reduced CO<sub>2</sub> emissions from blast furnace processes.



“Taking on the challenge of realizing carbon neutrality”

We are implementing initiatives that leverage digital technologies to promote carbon neutrality within our Group and across society.



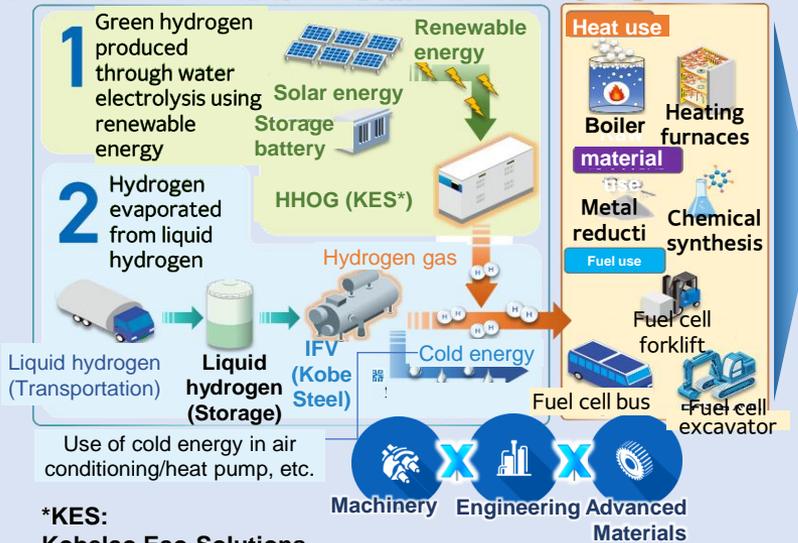
## EMS Realizes Hybrid-Type Hydrogen Gas Supply System

This system serves as next-generation hydrogen supply infrastructure that uses an **Energy Management System (EMS)** for centralized control for hydrogen production and optimizes hydrogen use by customers by combining liquefied hydrogen with water-electrolyzed hydrogen derived from renewable energy.

This system consists of three technical elements and delivers the unique value of the Kobelco Group.

- Intermediate Fluid Vaporizer (IFV) recovers and utilizes cold energy from liquid hydrogen
- High-purity Hydrogen Oxygen Generator (HHOG®) uses renewable electricity to produce high-purity hydrogen from water
- **Energy management system xD** optimizes the stability and economic efficiency of hydrogen supply

### Hybrid-Type Hydrogen Gas Supply System Hydrogen Utilization



Stable supply	Cost optimization	CO <sub>2</sub> reduction
<p>Hybrid operation with both hydrogen produced locally using renewable energy and liquid hydrogen, to realize a stable supply that can respond to the weather and demand fluctuations</p>	<p>Operation optimization using cold energy recovery technology and EMS reduces the hydrogen supply cost</p>	<p>The utilization of renewable energy and hydrogen utilization technologies contribute to decarbonization in both hydrogen production and use</p>



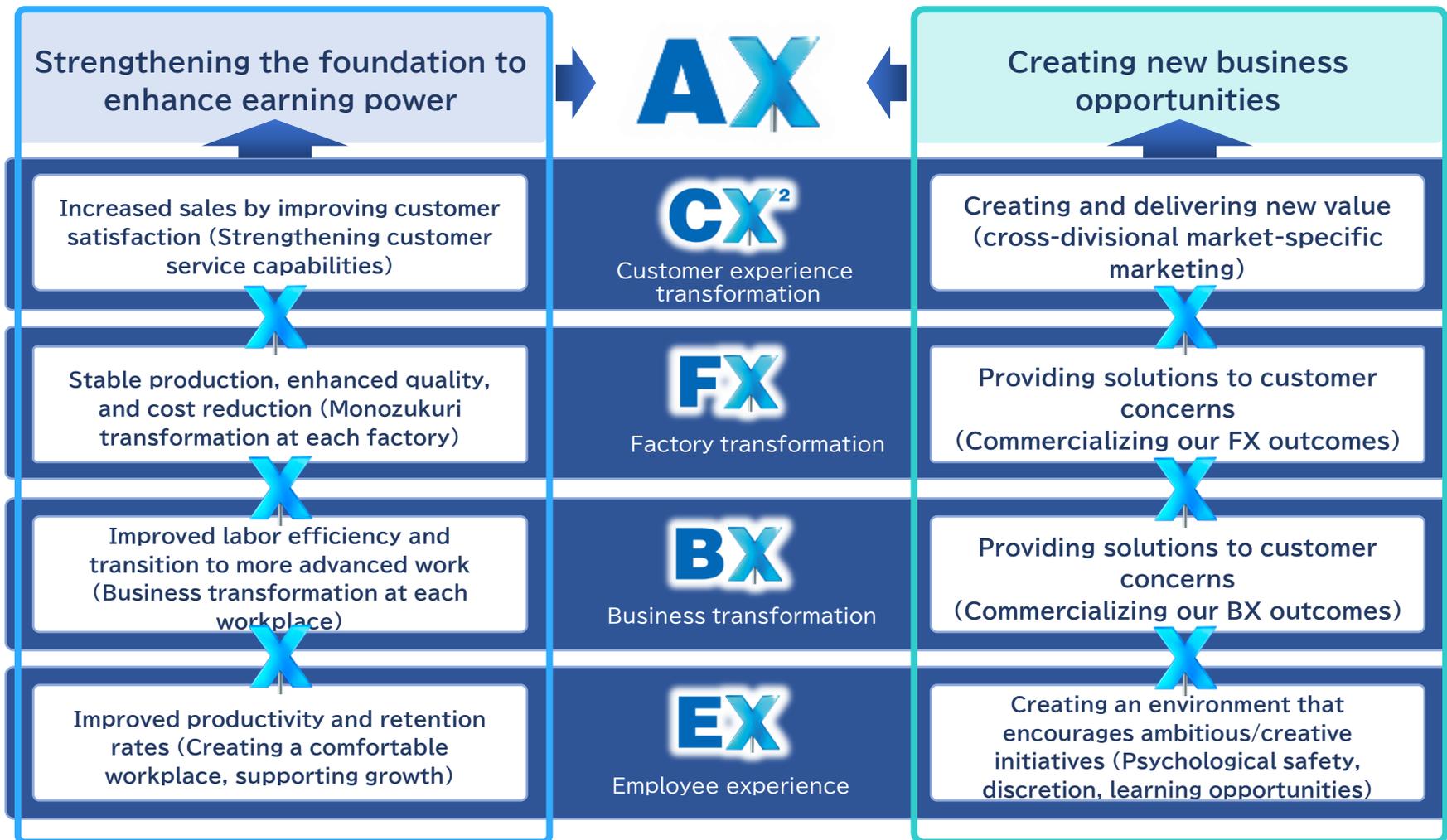
**AX**

**Ambidexterity**



**AX**

- BX, FX, CX<sup>2</sup> and EX, realized and accelerated by DX, will **strengthen the foundation to enhance earning power**.
  - CX<sup>2</sup> will bring opportunities to explore new businesses, while FX will yield outcomes that can be commercialized.
- ➔In addition to the indirect DX contributions mentioned above, these initiatives **directly contribute to AX** as shown below.



# < Case Example > AX: “Enhancing Earning Power” in Existing Businesses with Digital Technologies



Our society faces various challenges, including a declining workforce and an urgent need to pass on craftsmanship and the skills of veteran workers to future generations. In response, we are working to provide standardized and automated advanced monozukuri capabilities by digitalizing and recreating various manned operations.

➔ We will leverage digital technology to strengthen existing businesses and incorporate newly developed technologies into our company’s FX efforts.

## Engineering



### Waste processing plant crane automation

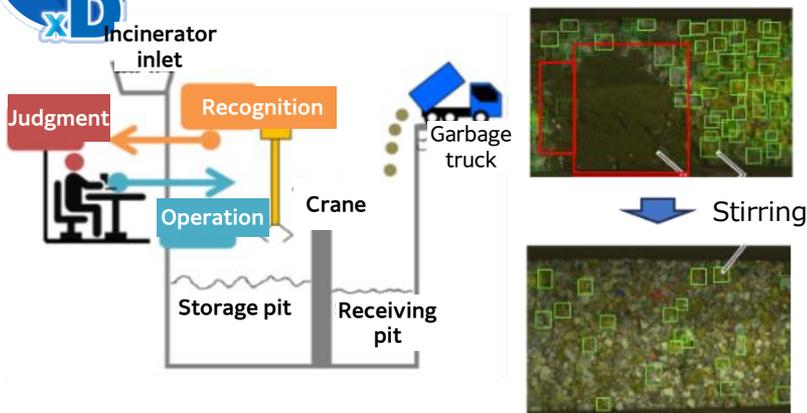


Image AI automates the operations performed by skilled workers, such as stirring and loading into the incinerator.

## Welding



### Automation of difficult welding work

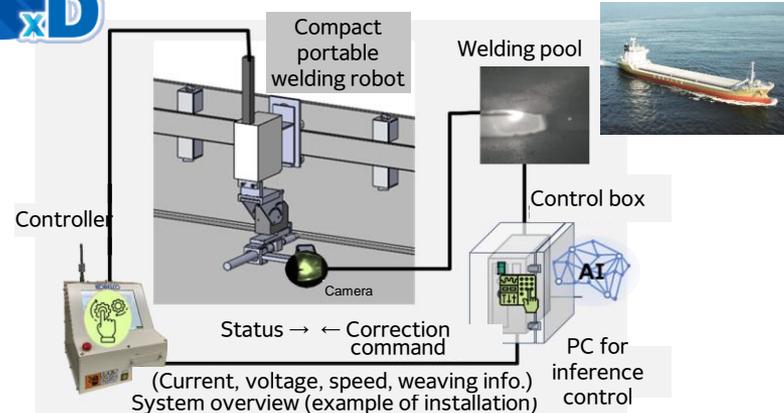


Image recognition AI monitors the welding pool and send digital signals, reproducing the skills of expert welders

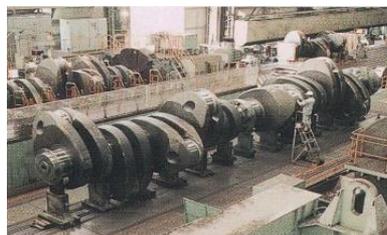


The elemental technologies acquired are also utilized for



Digitalization of skilled work  
➔ Improved quality level

### Marine crank shaft inspection automation



The entire surface is inspected with high precision and without omission, and the results are recorded as a map

# AX: “Pursuing Growth” and Creating New Business Opportunities with Digital Technologies

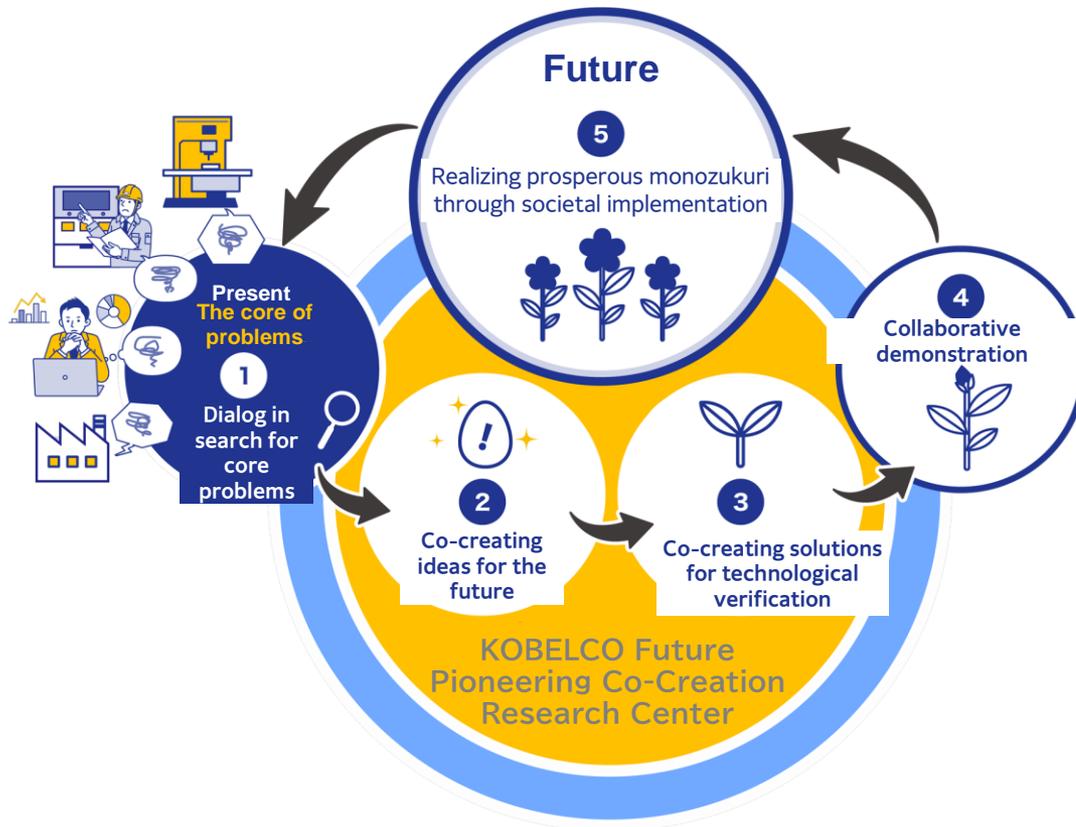


## KOBELCO Future Pioneering Co-Creation Research Center

- Established on October 1, 2022, for the purpose of creating new business by combining Kobelco Group’s diverse monozukuri experience with Osaka University’s cutting-edge technology and scientific capabilities
- ➔ Creating new businesses by monetizing Our Group’s solutions combined with digital technology



KOBELCO  
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KOBELCO Future Pioneering  
Co-Creation Research Center



SANKEN is dedicated to advancing beyond basic research and engaging in initiatives that apply research results in industry and societal transformation. It possesses some of the world’s leading expertise in AI and other digital technologies and is working to deepen its research through practical implementation in society.



The Kobelco group is committed to being a provider of products and solutions that address societal challenges in collaboration with its customers. We aim to make the best use of the digital solutions we have cultivated in a wide range of business fields, applying them not only within our company, but also as solutions to broader societal challenges.

➔ [Click here for more information](#)

## KOBELCO Future Pioneering Co-Creation Research Center

- DX is key to the success of ongoing projects aimed at addressing current issues.



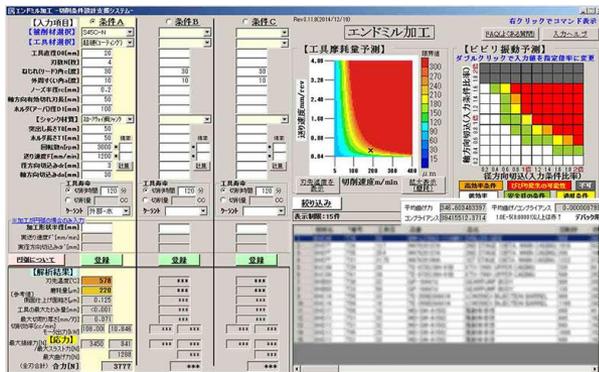
KOBELCO  
未来  
協働研究所  
KOBELCO Future Pioneering  
Co-Creation Research Center



➔ Click here for information on other research seeds.

### Machining Support System Project

- This project aims to support monozukuri innovation in the machining industry by proposing various “cutting process solutions” that contribute to the improvement of machining efficiency, trouble avoidance, cost reduction, and cutting process optimization.
- The “machining support system” under development will enable the proposal of solutions for improvement tailored to each individual site based on results obtained from data analysis and simulations that integrate AI technology, utilizing various data collected from machining processes.

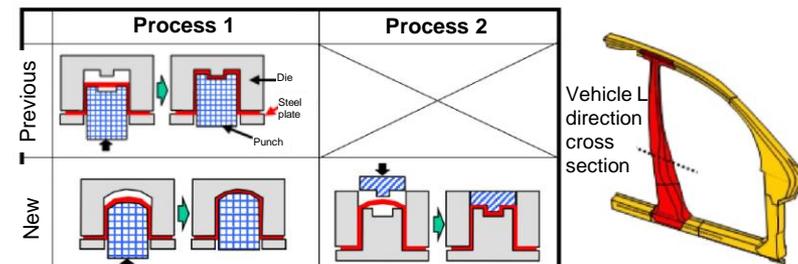


### Press Forming Support System Project

- This project aims to support the implementation of various technologies that address challenges in press forming and facilitate the transfer of skilled techniques to future generations. It focuses on enhancing press forming simulation and proposing solutions that promote the accumulation and analysis of relevant information.
- This system combines various monozukuri technologies accumulated to date with the latest AI technology to develop new solutions.

**An Example of Technology Developed:**  
Overview of the “Reverse Bottoming Method” for Reducing Precision failures in Dimensions

Citation: Bulletin of The Iron and Steel Institute of Japan (Ferrum), Vol. 17, No. 5 (2012), P.295



Effects of the new method: Relaxation of the tensile residual stress on the outer top plate part of pillar B

- (1) Significant reduction of warping
- (2) Reduction of impact on material strength

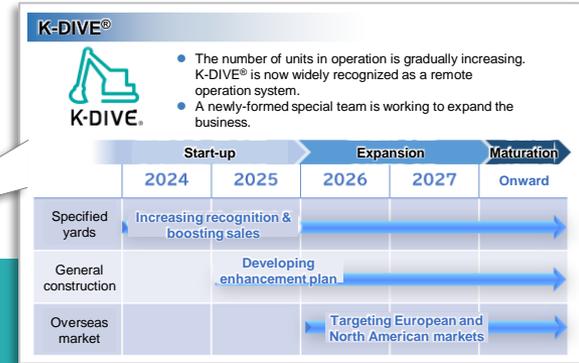
# AX: "Pursuing Growth" and Creating New Business Opportunities with Digital Technologies



## K-DIVE®

< Use of K-DIVE® to expand customer experience-oriented business for construction machinery >\*

- Provides a solution for customer's site improvement using a remote operation system and operation data
- Contributes to eliminating labor shortages through securing safety, improving productivity, and making the best use of diverse human resources
- ➔ Pursuing growth by expanding Kobelco Construction Machinery's customer experience-oriented business.



## Remote operation system for construction machinery

K-DIVE®: A site improvement solution using a remote operation system and operation data

### Remote operation system for construction machinery

Operators can remotely control construction machinery from the cockpit as if they were operating it on site. This eliminates the need to travel to the site, allowing for operations from a safe and comfortable location.



### Utilization of operation data on workers and machinery

This system makes on-site issues visible by utilizing operation data collected in the cloud, improving the efficiency of operations with a database and data utilization support from a dedicated advisor.

### Ensuring essential safety



#### Eliminating hazardous working environments

Enables the safe remote operation of construction machinery from the office, keeping operators away from hazardous worksites.

### Improving on-site productivity



#### Utilizing the experience and judgment of skilled personnel for the management of operations and construction progress

Uses data to visualize the status of workers and construction machinery operations, streamlining the process and improving on-site productivity.

### Utilizing diverse human resources



#### Addressing labor shortages

Expands the range of potential employees by creating an environment that allows for work at any time and from any location.



## Participation in JUPITeR - Expanding the K-DIVE® Value Supply Domains-

- At the request of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), we are participating in the Japan-Ukraine Platform on the Infrastructure Technology for Recovery and Reconstruction (JUPITeR)<sup>\*1,\*2</sup>
- The biggest local challenge is a labor shortage. MLIT has identified the remote operation of construction machinery as an initial key component of reconstruction assistance, which has raised expectations for the export of K-DIVE®.



### Purposes of the project

- Support rapid infrastructure restoration during wartime
- Support the development of restoration and reconstruction plans for major cities to facilitate early recovery and reconstruction efforts.

### Project overview

#### Activity (1): Development/implementation of emergency infrastructure restoration projects

- Provision of equipment and development/implementation of Quick Impact Projects (QIPs)
- Identification of equipment for comprehensive grant aid in “Programme for Emergency Recovery”
- Establishment of an equipment monitoring and follow-up system

#### Activity (2): Promotion of urban restoration and reconstruction planning

- Candidate cities: Kyiv Oblast and Kyiv City, Odesa, Dnipro, Kharkiv, Kherson, Mykolaiv

#### Activity (3): Strengthening cooperation between government agencies and our Group

- Demonstration of K-DIVE® technology and presentation of track records
- Exchange of opinions on reconstruction and restoration policies



\*1. Japan-Ukraine Platform on the Infrastructure Technology for Recovery and Reconstruction (JUPITeR)

\*2. Establishment of a public-private council for infrastructure reconstruction in Ukraine (JUPITeR)

Through an on-site survey in July<sup>\*1,\*2</sup>, we promoted remote technology to Ukrainian government officials and international financial institutions, achieving some progress. In August, our Company attended the presentation ceremony for 29 cooperation documents from companies and organizations related to Japan-Ukraine reconstruction business projects at the Japan-Ukraine Economic Reconstruction Promotion Forum<sup>\*3</sup>, where we started preparations for implementing FS and demonstration projects for K-DIVE®.

## Preliminary survey to prepare for the expansion of remote construction machinery operations (July 28 to 31, 2025)



## Japan-Ukraine Economic Reconstruction Promotion Forum (August 4, 2025)



\*1. MLIT press release: Preliminary survey to promote remote construction machinery operations at construction sites in Ukraine

\*2. Ministry for Development of Communities and Territories of Ukraine website: Japan is to present innovative technological solutions for the implementation of remote construction in Ukraine

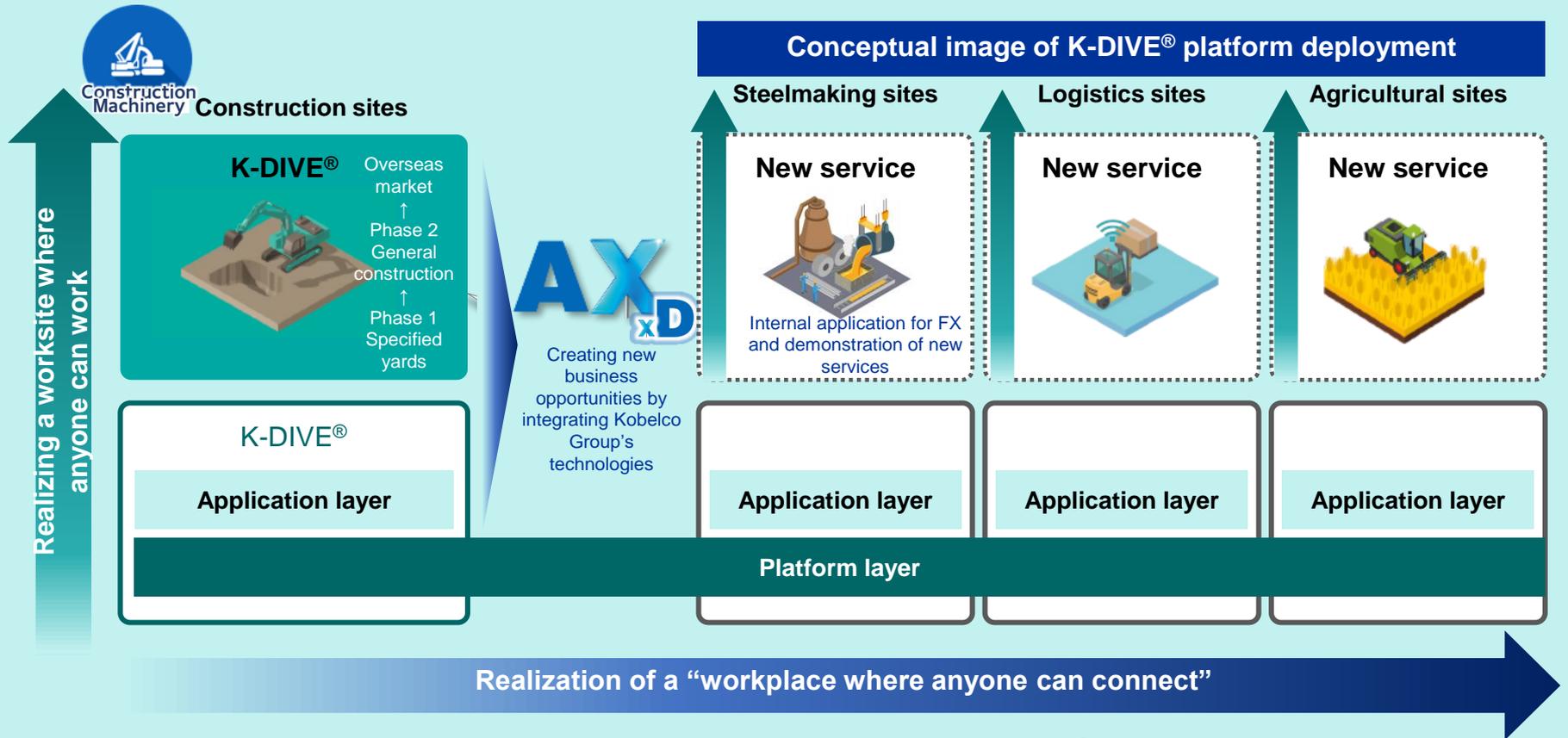
\*3. Japan-Ukraine Economic Reconstruction Promotion Forum Held (Ministry of Economy, Trade and Industry (METI))

# AX: “Pursuing Growth” and Creating New Business Opportunities with Digital Technologies

Further utilization of the digital platforms that comprise K-DIVE®

- We aim to realize a “worksite where anyone can connect” by providing the platform for the K-DIVE® service that realizes a “worksite where anyone can work” at construction sites. We will extend this platform beyond construction sites to reach more customers and markets facing common challenges, such as “labor shortages.”

➔ Pursue the growth of the Kobelco Group (Create new business opportunities)



By creating a “workplace where anyone can connect,” we aim to foster a “workplace where anyone can work” across a broader range of industries.

# Contents

1. The Medium-Term Management Plan (Fiscal 2024-2026) and KOBELCO-X
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- 6. Summary**

## <KOBELCO-X>

- KOBELCO-X— seven transformation(X) initiatives —are the driving forces for the “transformation into an appealing company”.
- “X” represents the transformation, as well as the integration of Kobelco Group’s diverse assets and the intersection of various activities.
- AX and GX are two pillars of our business strategy, representing the two priority issues under the Medium-Term Management Plan.
- Four Xs of BX, FX, CX<sup>2</sup>, and EX are implemented by all members to realize AX and GX, thereby increasing corporate value.

## Kobelco Group’s DX

- DX is a tool/means for realizing , accelerating, and advancing KOBELCO-X by the use of digital and data(xD).
- DX (xD)-driven BX, FX, and CX<sup>2</sup> initiatives have a positive effect on EX.
- BX, FX, CX<sup>2</sup>, and EX strengthen the foundation to enhance earning power (an element of AX), while DX indirectly contributes to AX as well.
- DX (xD) also contributes to realizing and accelerating AX and GX. It has the potential to create synergy through the integration of various strengths across business segments, leveraging comprehensive capabilities of the Kobelco Group, and further expand its contribution to societal challenges and creation of new value.



**We will focus on strengthening the “DX driving forces (human resources, environment, and culture)” along with other key areas, with the involvement of all members, including the president and executives**

For an overview of  
the Kobelco Group's DX Strategy

(Tentative title)

# KOBELCO DX REPORT 2025

Scheduled for release in  
November 2025

## Dialogue with the Capital Market

Our Company is actively engaged in dialogue with capital markets to achieve sustainable growth and increase corporate value over the medium to long term. The details of our dialogue are disclosed on our corporate website.

Dialogue with the Capital Market FY2024, announced in June 2025: [capital\\_markets\\_24\\_e.pdf](#)



## External Evaluations (Listed below are only major ones)

### ◆ FTSE4Good Index Series



FTSE4Good

### ◆ FTSE Blossom Japan Sector Relative Index



FTSE Blossom Japan Sector Relative Index

### ◆ FTSE Blossom Japan Index



FTSE Blossom Japan Index

### ◆ DX Stocks 2025



Noteworthy DX Companies 2025  
Digital Transformation

### ◆ MSCI JAPAN ESG SELECT LEADERS INDEX\*

2025 CONSTITUENT MSCI JAPAN ESG SELECT LEADERS INDEX

### ◆ MSCI JAPAN EMPOWERING WOMEN INDEX (WIN)\*

2025 CONSTITUENT MSCI JAPAN EMPOWERING WOMEN INDEX (WIN)

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## KOBELCO's View of the Future

Our view of a society and future to be attained as we carry out KOBELCO's mission

**We envision a world in which people, now and in the future, can fulfill their hopes and dreams while enjoying safe, secure, and prosperous lives.**

## KOBELCO's Mission

Our mission and the social significance of the KOBELCO Group that we must fulfill

**Our mission is to provide solutions to the needs of society, by making the best use of the talents of our employees and our technologies.**

## Core Values of KOBELCO

The commitments of the KOBELCO Group to society and the values shared by the entire KOBELCO Group

- 1. We provide technologies, products and services that win the trust and confidence of our customers we serve and the society in which we live.**
- 2. We value, and support the growth of, each employee on an individual basis, while creating a cooperative and harmonious environment.**
- 3. Through continuous and innovative changes, we create new values for the society of which we are a member.**

## Six Pledges of KOBELCO

Code of Conduct for all Group employees to follow to fulfill the Core Values of KOBELCO and the Quality Charter

- 1. Uphold the Highest Sense of Ethics and Professionalism**
- 2. Contribute to the Society by Providing Superior Products and Services** Quality Charter
- 3. Establish a Comfortable but Challenging Work Environment**
- 4. Live in Harmony with the Local Community**
- 5. Contribute to a Sustainable Environment**
- 6. Respect Each Stakeholder**

- ◆ This document contains forward-looking statements about the Company's forecasts, beliefs, expectations, aims, and strategies. These statements are based on the Company's judgements and assumptions using currently available information and may differ substantially from actual results due to uncertainties within its judgements and assumptions and a variety of factors that may change over time, such as future business operations and changes in internal and external circumstances. Kobe Steel assumes no responsibility for revising these statements or other contents in this presentation.
  
- ◆ Below is a list of factors of uncertainties and changes. This include but is not limited to:
  - Changes in economic conditions, demand, and prices in major markets
  - Political situations and trade and other regulations in major markets
  - Fluctuations in foreign exchange rates
  - Availability and prices of raw materials
  - Products and services of competitors, price strategies, alliances, and other business developments such as M&A
  - Changes in strategies of the Company's alliance partners

**KOBELCO**

In monozukuri, DX is utilized from various perspectives, including safety, quality and productivity. In areas where a large-scale system was once essential, it has become possible to implement DX at a low cost and without requiring advanced knowledge. As a result, the creative ideas of individual employees in each workplace are becoming increasingly important.

## Manufacturing

- Temperature estimation and shape monitoring using image measurement [Quality improvement]
- Automation of on-site measurement work to reduce work that require special management [Safety improvement, Elimination of work that requires skilled workers]
- Developing navigation systems for assembly work [Preventing work error, facilitating early skill mastery]

## Inspection

- Measurement and judgment using image measurement [Inspection accuracy improvement]
- Automatic output of inspection data [Operational efficiency improvement]
- Inspection automation utilizing robots [Inspection accuracy improvement, workload reduction]

## Equipment maintenance

- Establishment of maintenance management systems
- Automatic notification of consumable replacement dates
- Establishment of equipment abnormality sign detection systems

## Production management and logistics

- Introduction of logistics visualization tools
- Establishment of a warehouse load prediction simulator
- Visualization of inventory data

## Design and development

- Materials development using MI
- Establishment of “DataLab®” in-house data platform
- Utilization of AI and simulators in material design and structural design

## Services

- Visualization of work progress and results
- Visualization of customer information

[→ Return to the original page](#)

- Search for project themes from research seeds formed by combining the technological expertise accumulated in the KOBELCO Group with the knowledge of AI solutions at Osaka University

→ The utilization of DX-related technologies plays a major role in each research seed

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## Product development and design

- Visualization and prediction technology for heat and fluid flows inside machines
- Noise and vibration prediction and control technology
- Metal surface control technology
- Technology for joining dissimilar and similar materials
- Full car CAE solutions
- Using image recognition AI to increase the added value of machinery products
- Simulation technology using computational science
- Realizing more efficient and sophisticated material design with AI

## Manufacturing processes and process design

- Technology for predicting internal defects and component segregation in casting
- Forging load prediction technology, temperature/strain prediction technology
- Process optimization technology using cutting simulation
- Simulation technology for the optimal design of manufacturing lines

## Production management, quality control, and automation

- Technology for schedule planning and logistics management in build-to-order factories
- Technology for minimizing delivery period variation in multiple-variety, variable-volume production
- Equipment abnormality detection and predictive maintenance technology to stabilize factory operations
- Process abnormality prediction and diagnosis technology
- Shape measurement technology, high temperature measurement technology
- Image quality inspection technology, non-destructive inspection technology
- Control technology for automation and yield improvement
- AI-based disturbance suppression technology to reduce environmental impact

## Human resource development and skill transfer

- ICT platform construction technology for training service personnel
- Operator support technology that accumulates and utilizes the experience and knowledge of skilled employees
- Technology to support operations through the visualization of production processes
- Technology to support the optimal design of manufacturing conditions using a database
- Technology to support production sequence planning and design using actual performance data
- AI-based technology to quantify visual and sensory inspections
- Off-line automatic teaching system for welding robots

- The DX strategy for the entire Kobelco Group is primarily promoted by the DX Strategy Committee, which is an auxiliary body to the Executive Council.
- The response to security risks is coordinated through the Information Security Subcommittee, which operates under the Risk Management Committee.
- For the promotion of KOBELCO-X, various other organizations collaborate to accelerate transformation through the use of digital technologies.

