Event Summary

[Company Name]	Mitsubishi Materials Corporation
[Date]	March 6, 2024
[Time]	13:00 – 14:30 (Total: 90 minutes, Presentation: 47 minutes, Q&A: 43 minutes)
[Venue]	Webcast
[Number of Speakers]	5
	Makoto Shibata (hereafter “Shibata”) Director, Managing Executive Officer, CTO
	Takeshi Isobe (hereafter “Isobe”) General Manager of Monozukuri and R&D Strategy Division
	Yoshiyuki Nagatomo (hereafter “Nagatomo”) General Manager of Marketing Department, Monozukuri and R&D Strategy Division
	Nobuhisa Hayama (hereafter “Hayama”) General Manager of DX Promotion Division
	Norihiro Itano (hereafter “Itano”) General Manager of System Strategy Division, CIO

Presentation

Shibata: Thank you very much for your time. I would like to explain the current progress of manufacturing excellence, R&D, DX, and IT strategies that were just mentioned.

I will start with manufacturing excellence and R&D.

1. Manufacturing Excellence and R&D Strategy

Materiality

Materiality
Creation of a recycling-oriented society
Contribution to global environment
Sustainable supply chain management
Respect for human rights
Workplace safety and hygiene
Maintenance and improvement of governance
Retainment and utilization of human capital
Stakeholder communication
Deepening of DX
Initiatives to create new value

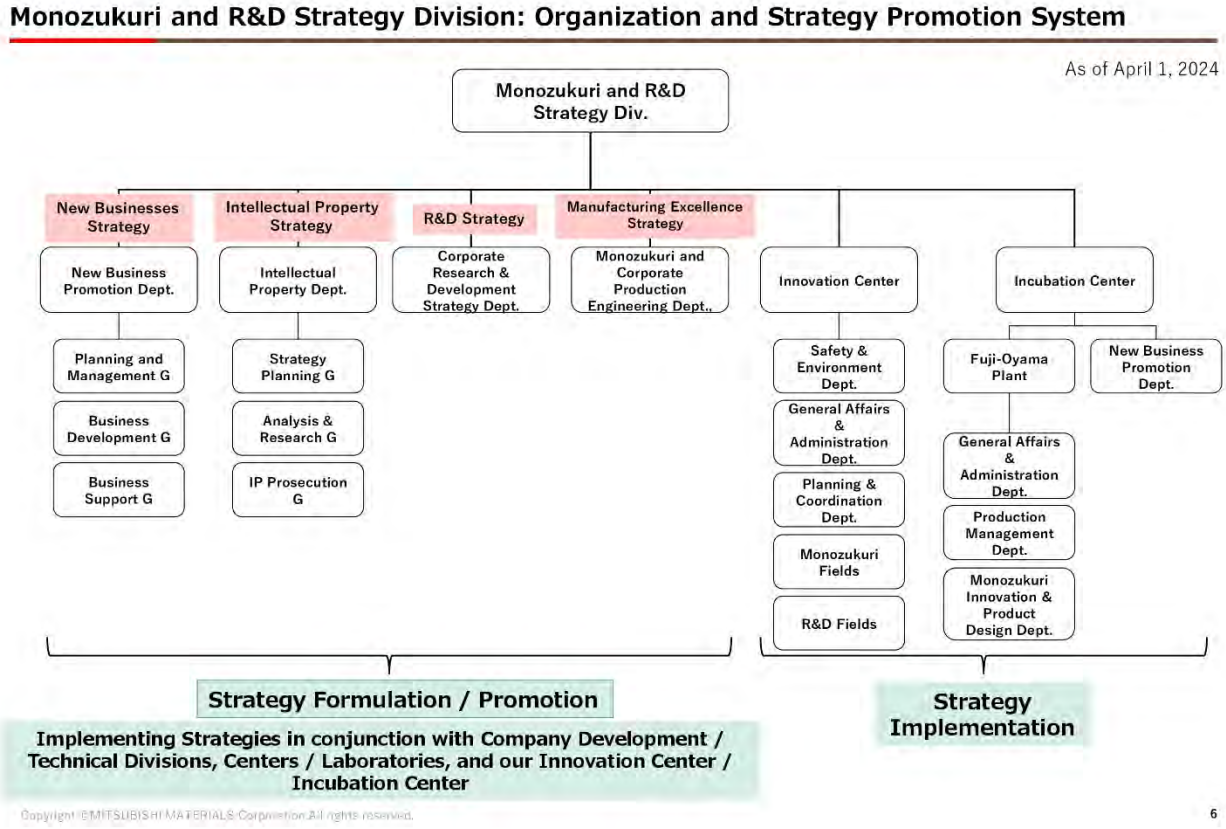
Key Themes	Main Initiatives	Objectives, etc.
Creation of innovation	Building and execution of new business creation processes for continuous creation of businesses to be developed (increase in themes; business commercialization; growth of new businesses)	FY March 2024: Launch of acceleration program By FY March 2028: Establishment of organization system; ongoing investment and lending strategies (new business creation, M&A, etc.) FY March 2031: Operation multiple businesses of a prescribed size
Exploration and creation of social value	Creation of rare earths and rare metals recycling business	Black Mass processed FY March 2026 900t per year FY March 2028 3,000t per year FY March 2031 6,000t per year
Strengthening of manufacturing	Execution of basic policy for strengthening manufacturing capabilities (strengthening of manufacturing capabilities through PDCA cycles for strengthening our manufacturing constitution; reinforcement of the manufacturing foundation technology development and improvement)	Pursuing issue setting, problem solving and plant capability evaluation from businesses and plants vision based on the FY2031 Strategy; continuation of working on innovation to improve manufacturing capabilities = continuation of specialization

This slide shows how manufacturing excellence and the R&D strategy are positioned in the “Materiality” that is also shown in the Integrated Report.

Although various areas are involved, we mainly focus on the bottom part of the slide, “Initiatives to create new value.” Specific priority themes are “Creation of innovation,” “Exploration and creation of social value,” and “Strengthening of manufacturing.”

I would like to explain the targets of our efforts in the following slides.

1. Manufacturing Excellence and R&D Strategy



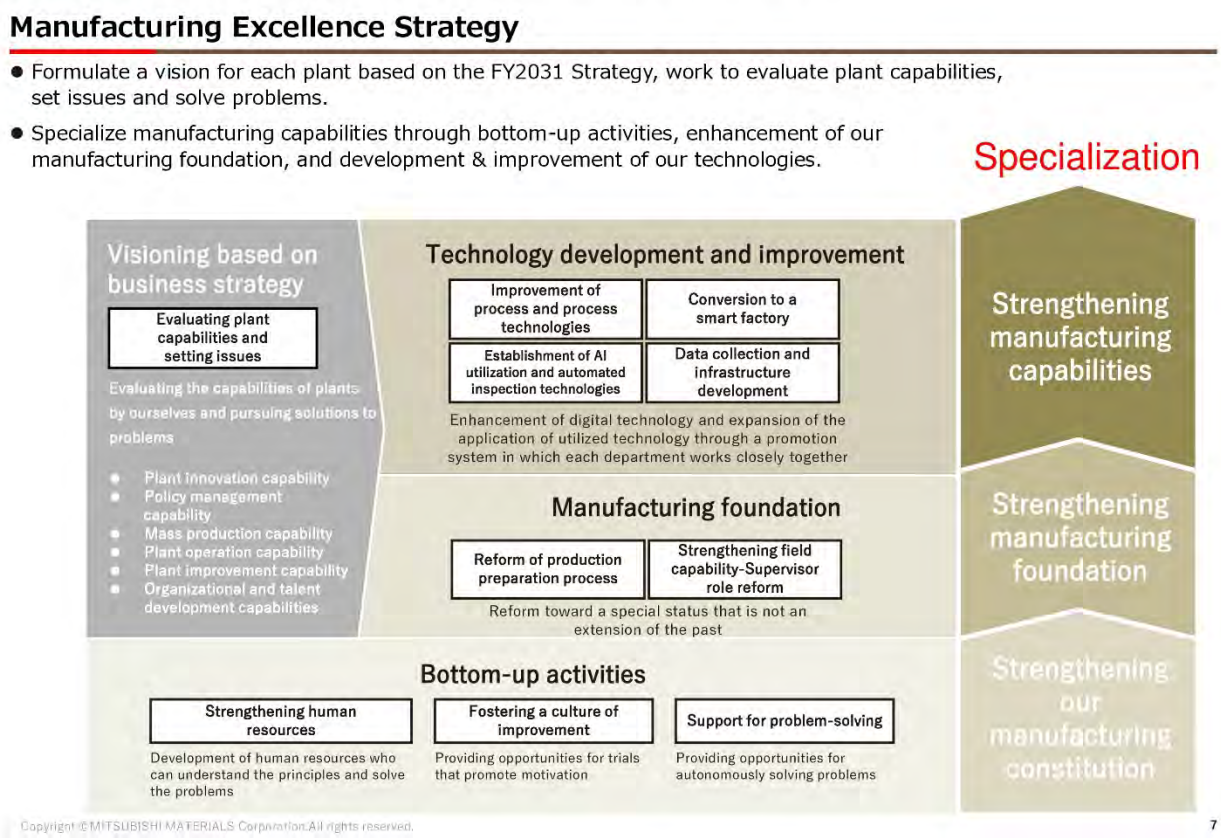
First of all, I would like to talk about our promotion structure. We have been operating under the name of Monozukuri and R&D Strategy Division, which is an organization that handles not only the manufacturing excellence but also the entry point of new business ideas, research and development, intellectual property strategy, and manufacturing in a unified manner.

As you can see in the organizational chart, we have Strategic Division in the head office that oversee new business, intellectual property, R&D, and manufacturing excellence, respectively.

The Innovation Center is a unit that implements these activities, and it consists of the Monozukuri and R&D fields, the Fuji-Oyama plant, which mainly handles insulated heat spreader substrates, and the New Business Promotion Department, which handles other new businesses, as the Incubation Center for new businesses.

In addition, please note that some of the organization is expressed in anticipation of the April 1 reorganization, so there may be some differences from the current organization structure.

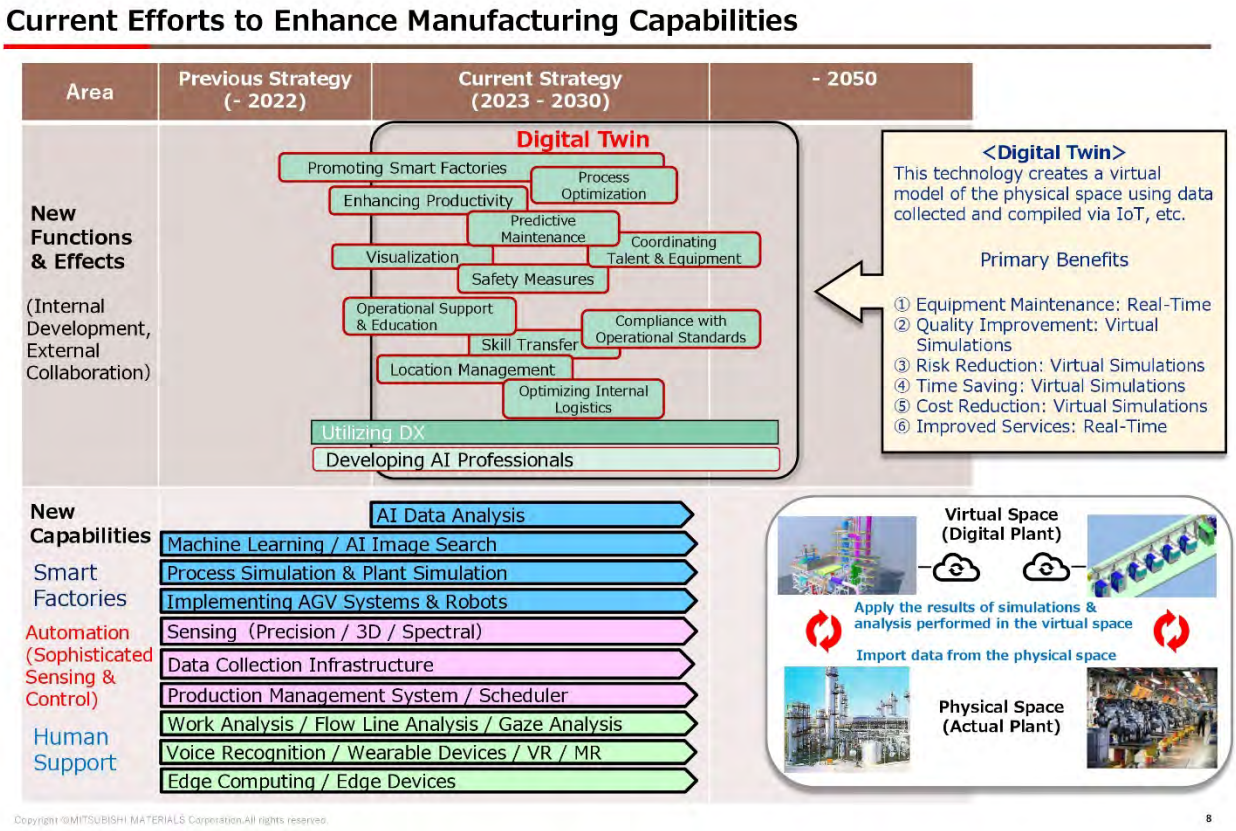
1. **Manufacturing Excellence and R&D Strategy (Manufacturing Excellence Strategy)**



First, the manufacturing excellence strategy.

Under the Medium-term Management Strategy FY2031 (“FY2031 Strategy”), the goal is to formulate a vision for each plant based on the Medium-term Management Strategy, to pursue solutions after evaluating the plants’ capabilities and confirming their issues, and to ultimately specialize manufacturing capabilities through bottom-up activities, enhancement of manufacturing foundations, development, and improvement of technologies in the course of these activities.

1. Manufacturing Excellence and R&D Strategy (Manufacturing Excellence Strategy)



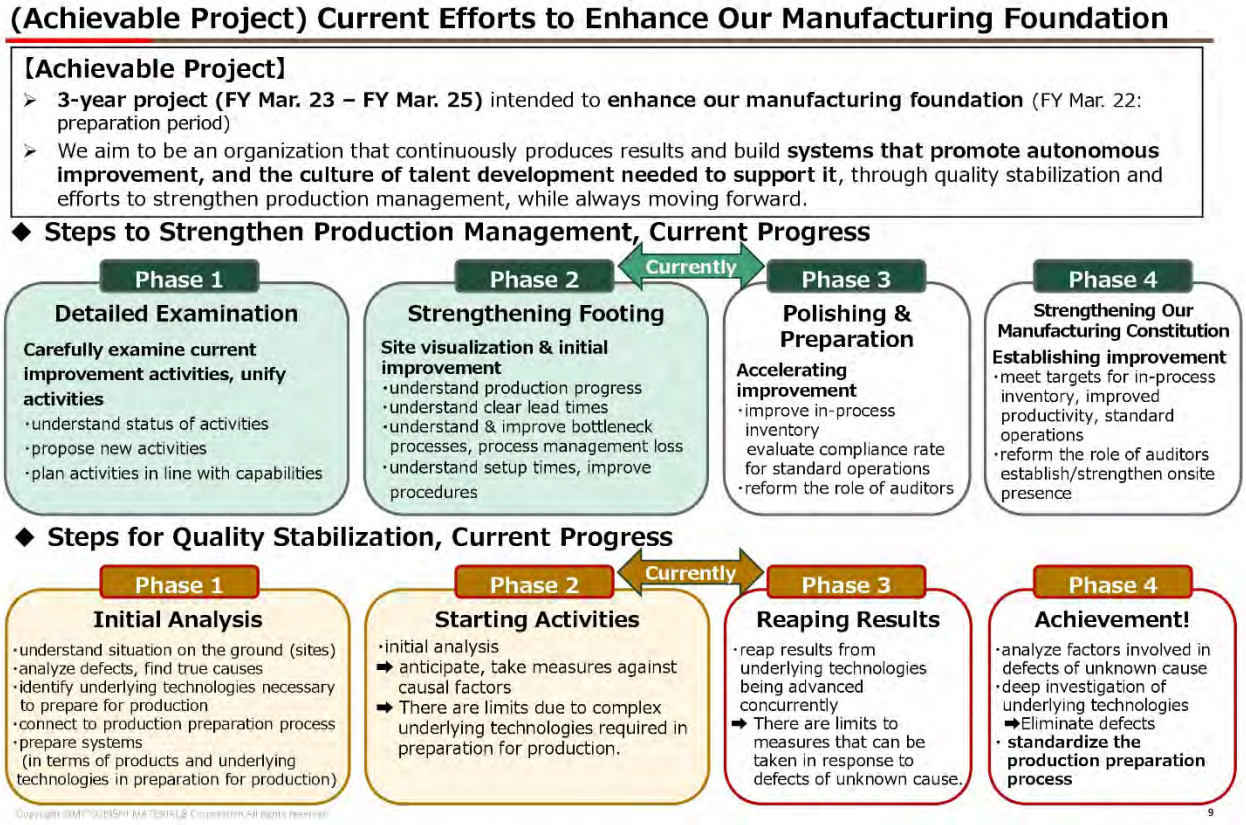
First, let me explain our efforts in the areas of technological development and improvement.

First of all, as you can see at the bottom of the page, we are aiming to acquire major technologies, such as those related to smart technology, automation, and human support.

We have been working on these acquisition activities since the previous Medium-term Management Strategy and even before that to utilize digital technology in manufacturing, and we would like to strengthen these activities further in the current Medium-term Management Strategy.

In this context, we would like to create a digital twin in both product- and process-oriented factories by the end of the FY2031 Strategy. By simulating processes and machines in a virtual space and incorporating them into production planning, we aim to achieve stable and efficient operations through the power of digital technology.

1. Manufacturing Excellence and R&D Strategy (Manufacturing Excellence Strategy)



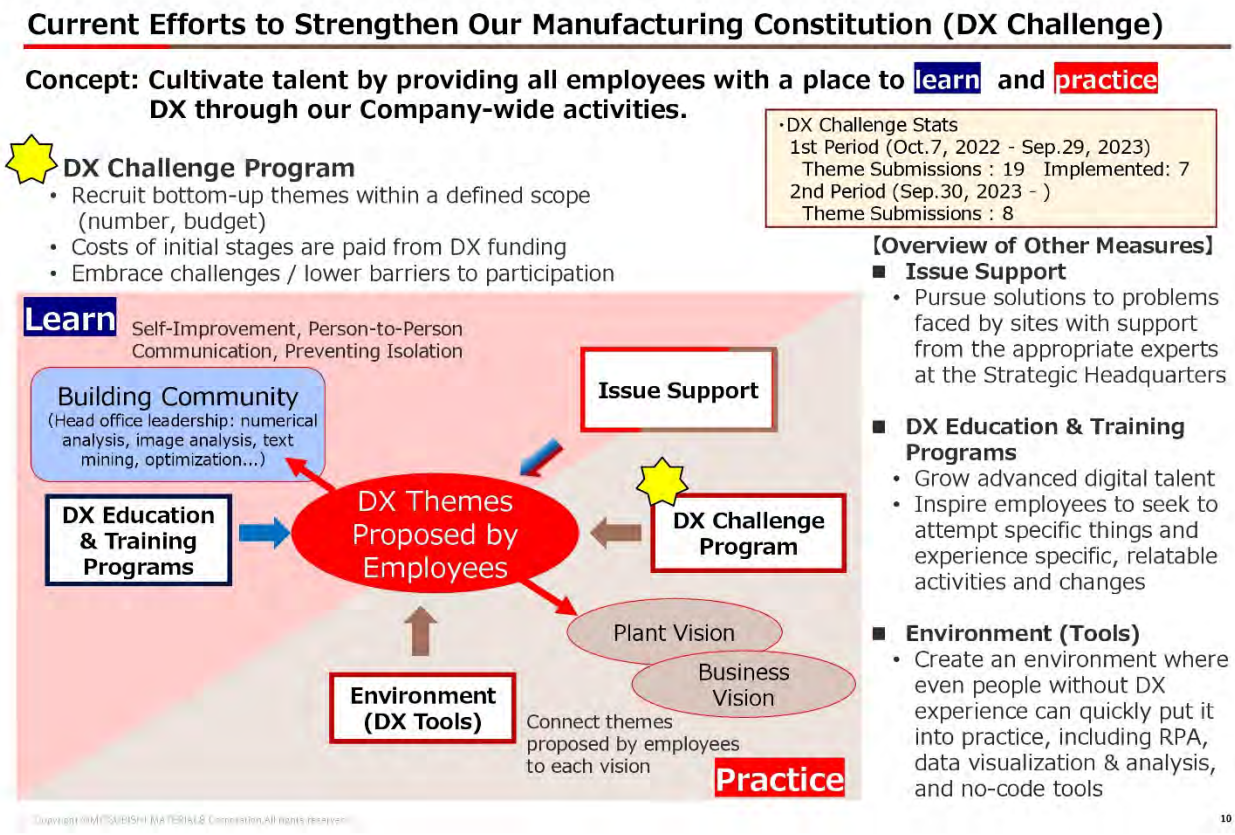
I would like to explain the part about strengthening the foundation.

Within the Group, we are implementing a three-year project, which we call the “Achievable Project,” from FY March 2023 to FY March 2025, with the final year of FY March 2025 starting from April 2024.

We are proceeding with the project in accordance with the following phases, Phase 1 through 4, at each model site, mainly to strengthen production management and quality stabilization, to develop a system to promote autonomous improvement at each workplace, and the human resources to support such improvement.

The degree of progress varies slightly from site to site, but roughly speaking, as indicated in the diagram, we understand that we are moving from Phase 2 to Phase 3.

In FY March 2025, we will move from Phase 3 to Phase 4, where we hope to finally achieve and complete the improvements.



Here is the part about strengthening the Company's constitution. We would like to provide a place where all employees can learn and practice manufacturing or business improvement utilizing the power of digital technology. As a Company-wide activity, we would like to nurture people who can ultimately utilize such digital technology.

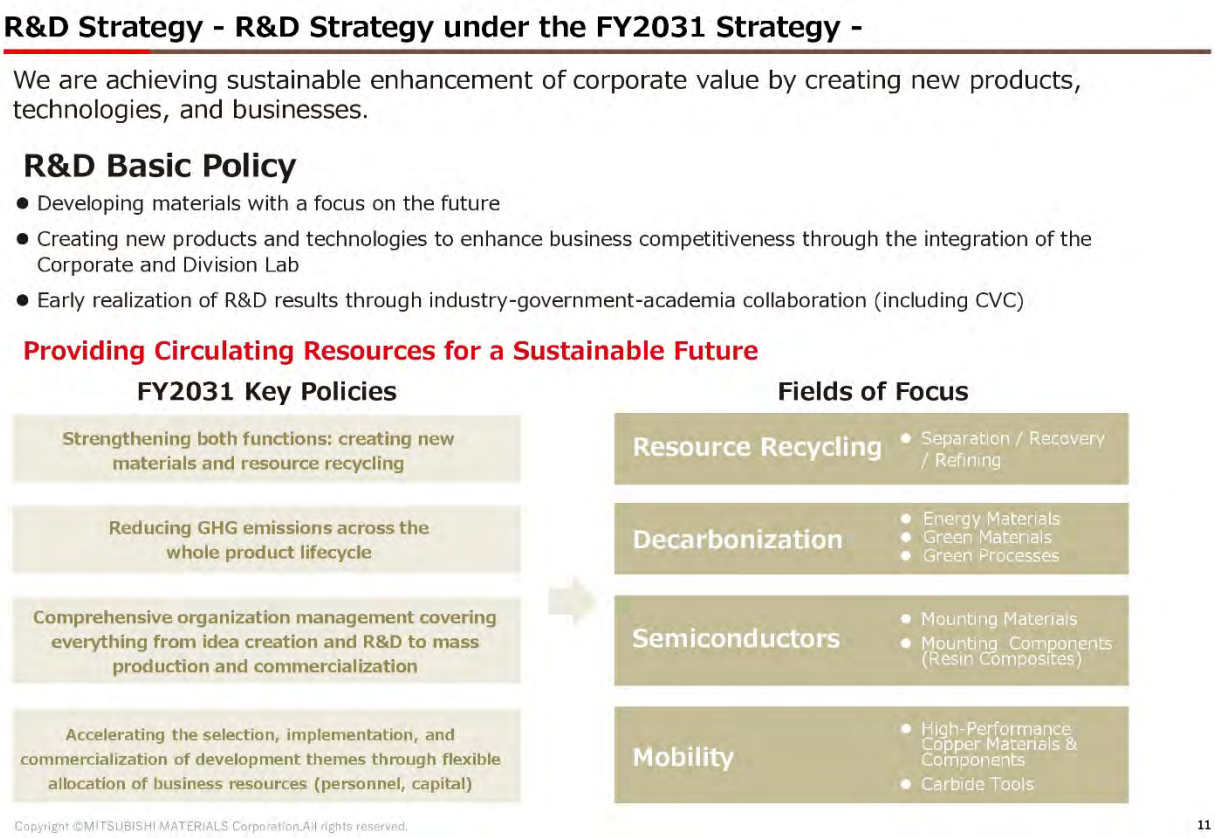
We are also promoting bottom-up activities, such as the DX Challenge Program, which includes not only those in the manufacturing area but also members of the DX team.

This activity is a challenge program to promote the use of digital technology in business operations by those who have ideas to use the power of digital technology to improve their own operations, not only at each site and manufacturing site, but also at sales offices and auxiliary administrative divisions, by lowering the hurdles and covering the initial stage costs.

In the first phase, from H2 of last year to H1 of this year, we received 19 applications, of which seven have already been implemented and have reached a certain level of success. In H2 of this fiscal year, we received eight applications, and we are currently discussing how to implement these themes.

In addition to the DX Challenge Program, we are also working on supporting the tasks, enhancing the education and training programs, and improving the tools, as shown on the right, so that each employee can promote DX and manufacturing improvement based on his or her own will.

1. **Manufacturing Excellence and R&D Strategy (R&D Strategy)**



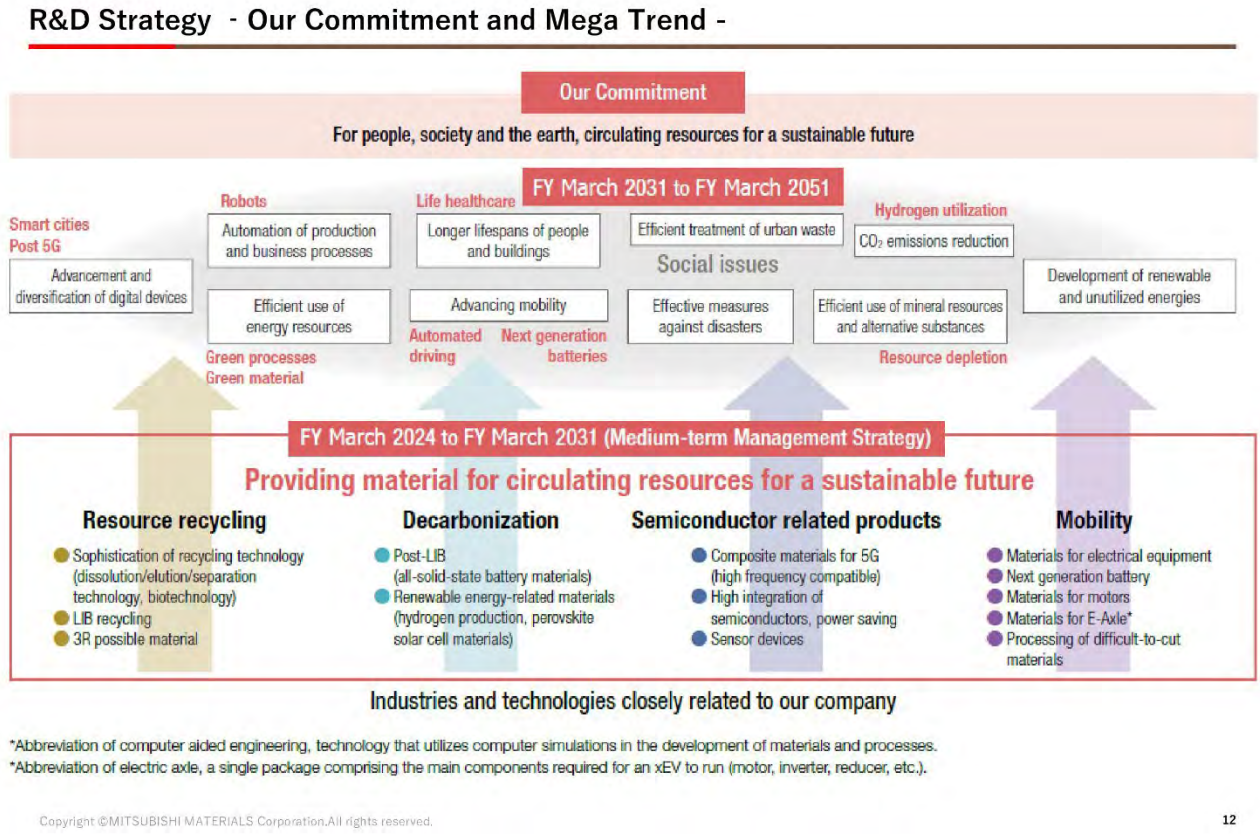
Here are our strategies in the area of R&D.

The three basic policies are written at the top. Our policy is to develop materials with an eye on the future, to create new products and technologies to strengthen our business competitiveness through collaboration between corporate and business divisions and departments, and to achieve early commercialization of products and technologies through open collaboration among industry, government, and academia, rather than keeping all these to ourselves.

Among these, our priority policy, as described above, is to achieve both our major vision of creating new materials and resource recycling while reducing GHG emissions and, as I explained earlier in the organization, we would like to operate in a single integrated manner, from idea to commercialization. Our policy is to allocate resources and money flexibly to support these efforts and to move forward with commercialization in the shortest possible time.

We will focus on the following four areas in carrying out our activities in accordance with this policy. Our company's vision is to realize resource recycling and decarbonization, while our focus is on semiconductors and mobility as areas where we expect to grow as a customer, and where we will be able to make use of our strengths.

1． Manufacturing Excellence and R&D Strategy（R&D Strategy）

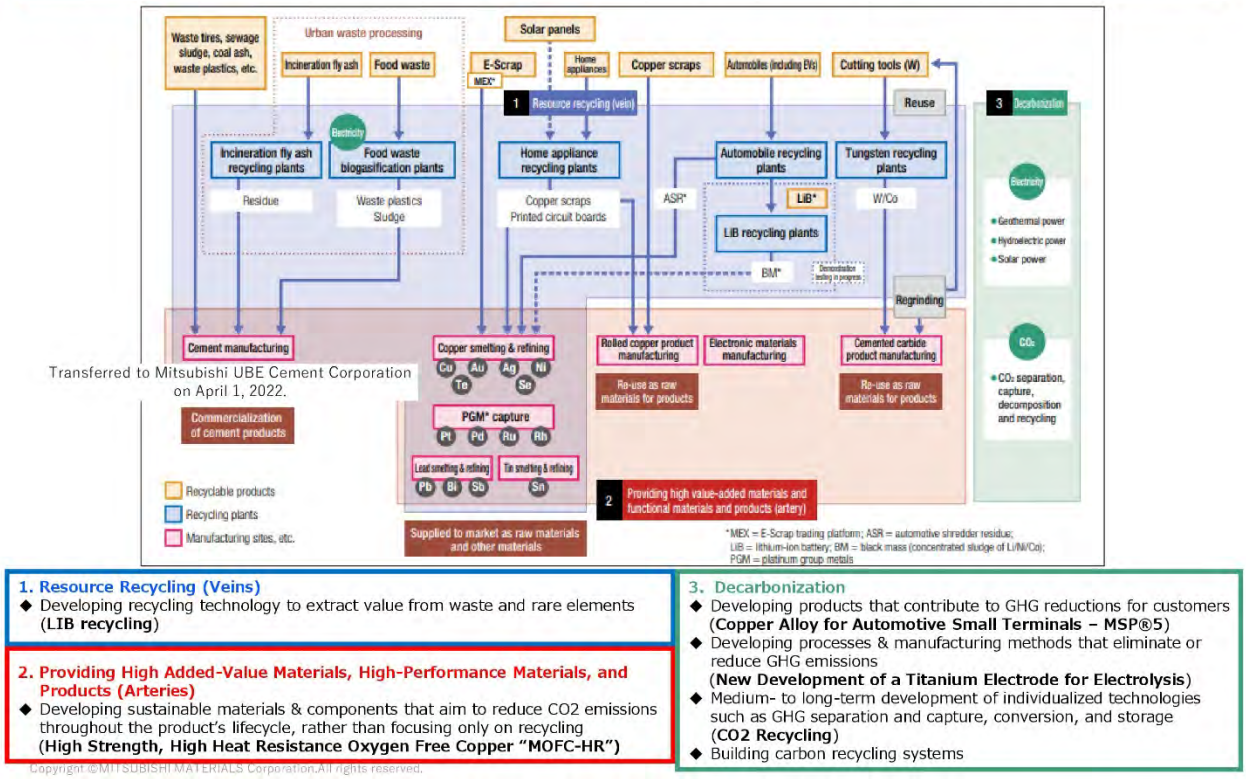


This slide illustrates what I have just told you. Ultimately, we would like to fulfill “Our Commitment” of "For people, society and the earth, circulating resources for a sustainable future" in our R&D and manufacturing.

To this end, we are considering what social challenges lie ahead by 2050 and how we can contribute to them, and in our Medium-term Management Strategy, we are promoting R&D by designing circulation and providing sustainable materials based on individual themes within the four focus areas I mentioned earlier.

1. Manufacturing Excellence and R&D Strategy (R&D Strategy)

R&D Strategy - Theme Setting Policy (Keen Awareness of Resource Recycling & GHG Reduction)



1. Resource Recycling (Veins)
- Developing recycling technology to extract value from waste and rare elements (**LIB recycling**)

2. Providing High Added-Value Materials, High-Performance Materials, and Products (Arteries)
- Developing sustainable materials & components that aim to reduce CO2 emissions throughout the product's lifecycle, rather than focusing only on recycling (**High Strength, High Heat Resistance Oxygen Free Copper "MOFC-HR"**)

3. Decarbonization
- Developing products that contribute to GHG reductions for customers (**Copper Alloy for Automotive Small Terminals – MSP®5**)
- Developing processes & manufacturing methods that eliminate or reduce GHG emissions (**New Development of a Titanium Electrode for Electrolysis**)
- Medium- to long-term development of individualized technologies such as GHG separation and capture, conversion, and storage (**CO2 Recycling**)
- Building carbon recycling systems

In addition, the diagram shows what we will do in our business and R&D from the recycling perspective.

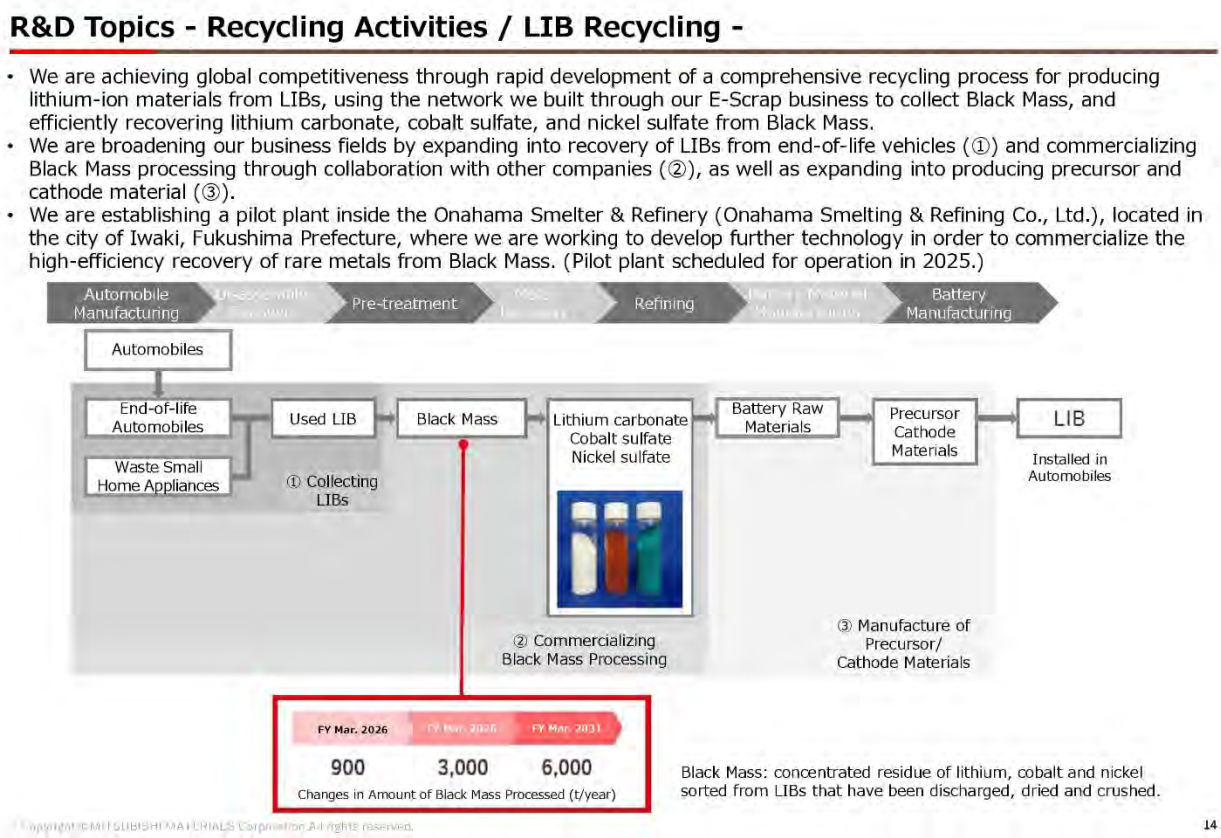
We have chosen themes with an awareness of our major themes of resource recycling and GHG reduction.

For example, in the vein of resource recycling, the blue background in the upper half of the diagram shows the development of recycling technologies to convert rare elements and waste into valuable resources, specifically lithium-ion battery recycling, which we intend to pursue in the future.

On the other hand, also within the so-called circulation of resources, in the recycling arterial system, where products are reintroduced to the world, we will supply materials, resources, and products with high added-value, which I will explain in detail later in this section.

As for decarbonization, as written on the far right, we would like to focus on developing and supplying functional products that can contribute to our customers' GHG reduction, or creating a system to extract carbon from CO2 and recycle it, in addition to our activities with our own power sources, which is one of our Company's characteristics.

1. **Manufacturing Excellence and R&D Strategy (R&D Strategy)**



From here, I would like to briefly explain our specific initiatives.

First, I would like to talk about the recycling of lithium-ion batteries. The recycling of LIBs is divided into three areas: one, where batteries are collected from automobiles and other products; two, where elements such as lithium, cobalt, and nickel are extracted from the black mass; and three, where precursors or cathode materials themselves are manufactured from these elements so that they can be used in batteries again.

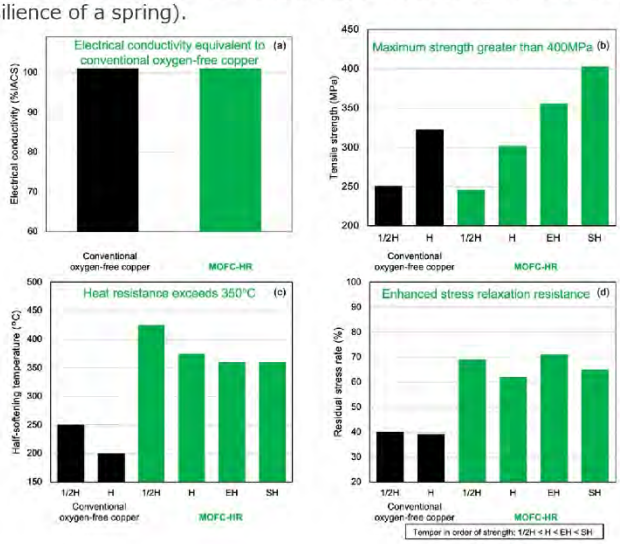
We are currently in the process of constructing a pilot plant to extract lithium carbonate, etc., from black mass, which is the second part. We are planning to start operation in 2025 or later, but eventually, we would like to gradually increase the amount of black mass processed toward 2030.

1. **Manufacturing Excellence and R&D Strategy (R&D Strategy)**

R&D Topics - Resource Recycling Initiatives ／ Oxygen-free copper with high strength and high heat resistance 「MOFC-HR」 -

Development of "MOFC-HR" (HR: Heat Resistance)
Oxygen-Free Copper with the World's Highest Standard in Strength and Heat Resistance

- Instead of a copper alloy with other elements added in, we developed MOFC-HR (Mitsubishi Oxygen-Free Copper - Heat Resistance), an entirely new oxygen-free copper with strength and heat resistance that have been enhanced to match world-class standards.
- MOFC-HR has superior recyclability, and maintains electrical and thermal conductivity equivalent to conventional oxygen-free copper, while achieving extremely high strength and greatly increased heat resistance, and also a high level of stress relaxation resistance (a characteristic indicating the resilience of a spring).
- MOFC-HR's superior properties enable its use in a wide range of applications with less degradation even in environments with high thermal loads, making it ideal for electrical components that are required to accommodate large currents and offer high heat dissipation under harsh environmental conditions, such as in EV and next-generation energy applications.



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In terms of materials that can contribute to resource recycling, I would like to explain high-strength, highly heat-resistant, oxygen-free copper and MOFC-HR.

As many of you have already heard about MOFC-HR, which has already been announced in newspapers, it is a product that is more recyclable than conventional products, has the same electrical and thermal conductivity, and achieves extremely high strength.

In the EV and next-generation energy fields, which are expected to grow in the future, we hope that our products will be used in harsh environmental conditions as components for devices that require high conductivity and high heat dispersion, and we are currently striving to expand sales.

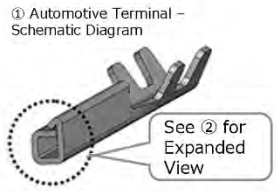
R&D Topics - GHG Reduction Efforts / MSP®5 Copper Alloy for Automotive Small Terminals -

Development and Full-Scale Production of MSP®5, a Copper Alloy with World-Leading Magnesium Levels

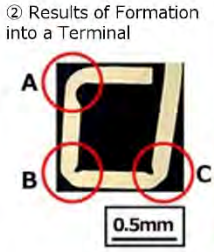
Our Proprietary MSP®5 Received the 2021 Technology Award from the Japan Copper and Brass Association

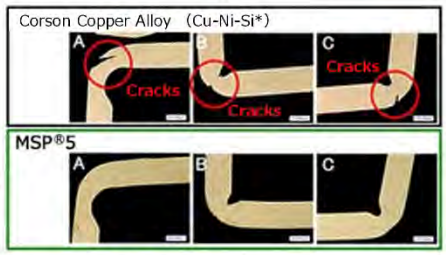
- We developed an alloy with the high strength, electrical conductivity, and stress relaxation resistance (the resilience of a spring when heated) required for materials used in automotive electrical components, which also has excellent formability, minimizing the risk of cracks and fractures during forming, particularly for box-shaped terminals.
- As a solid-solution strengthened copper alloy*1, MSP®5 can be manufactured using a simpler process than that for precipitation strengthened copper alloys*2 which require complicated heat treatment.
- This makes it possible in principle to reduce CO_2 emissions during manufacturing.

*1: Solid-solution strengthening: a method of strengthening a material by dissolving other atoms (solute atoms) into the matrix of parent atoms (solvent atoms).
*2: Precipitation strengthening: a method of strengthening a material by precipitating other atoms (solute atoms) within the matrix of parent atoms (solvent atoms) following solution treatment.



Example Application for MSP®5: Automobile Connectors





*Comparison with existing MMC Group product

A similar product is the MSP series of copper alloys. The product introduced here is MSP5, a copper alloy for small terminals for automotive use.

While the MOFC-HR mentioned above is a pure copper material, this is a so-called copper alloy type, which is mainly copper, but also incorporates magnesium in a solid solution-strengthened form. In addition to high strength, electrical conductivity, and stress relaxation resistance properties, it has been developed as a formable alloy that is resistant to cracking and rupture during molding.

In addition, as I mentioned earlier, solid solution strengthening, since these processes are capable of keeping CO2 emissions low in principle, we believe they can contribute to GHG reduction as well, thus contributing to our process.

1. **Manufacturing Excellence and R&D Strategy (R&D Strategy)**

R&D Topics - GHG Reduction Efforts / New Development of a Titanium Electrode for Electrolysis -

Developing a New Titanium Electrode with a Double-Layer Structure Using 3D Printer Technology - Novel Material that Supports Efficient Hydrogen Production at High Current Densities -

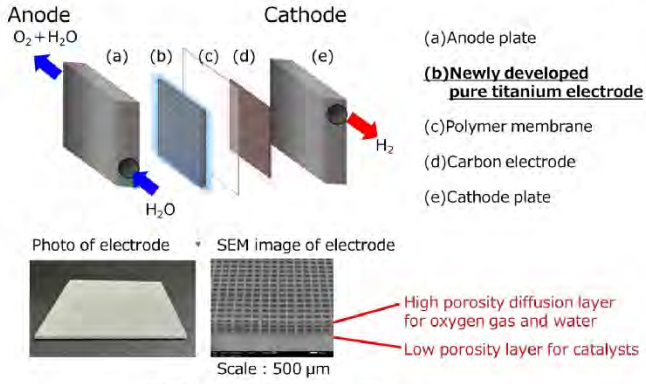
- In conjunction with the group led by Yokohama National University's Shigenori Mitsushima (Professor at the Faculty of Engineering and Director of the Advanced Chemical Energy Research Center, Institute of Advanced Sciences), we have developed a new titanium electrode for electrolysis which is capable of highly efficient operation even under high current density conditions.

【Background】

- Demand for hydrogen as a form of green energy is rising, and polymer electrolyte membrane (PEM) electrolysis is gathering attention as a hydrogen production technology, though a challenge is its high system cost.
- Therefore, Yokohama National University, which has been entrusted with the Advancement of Hydrogen Technologies and Utilization Project by NEDO and has cutting-edge electrode evaluation technology, and MMC, with our sophisticated titanium sintering technology, began working together on the development of a new titanium electrode for electrolysis.

【Development Overview & Outlook】

- Applying our original powder sintering technology of pure titanium to 3D printer technology, we achieved the formation of a new double-layer structure with a layer for electrolysis and a diffusion layer for oxygen discharge.
- Electrolysis is possible even with high current density (over 4 A/cm^2; typical: 4 A/cm^2). Further, hydrogen production costs are lowered by reducing the amount of precious metal catalysts, etc. required.
- We will continue developing & prototyping to optimize electrode structures for practical use.



PEM Electrolysis – Schematic Diagram

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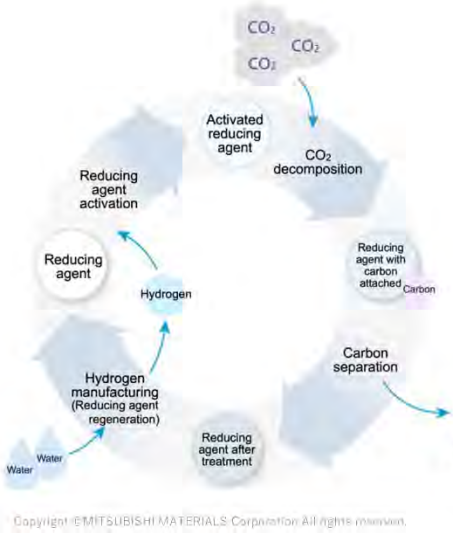
This is an introduction to titanium electrodes for water electrolysis. We have developed a new electrode with a two-layer structure applying our powder sintering technology to our 3D printer technology. Together with researchers from Yokohama National University, we applied for the NEDO's Leading Development Project, and we are currently proceeding with it.

As described below, we are proud of the unique characteristics of the two-layer structure that integrates the electrode part that decomposes water, and the diffusion part that discharges oxygen.

R&D Topics - Carbon Recycling Efforts / CO2 Recycling -

Carbon Recycling Technology Adopted as an R&D Project Commissioned by NEDO - Accelerating Development and Application of New CO_2 Reuse Technologies -

The carbon recycling process we have developed was selected as one of the partner projects for "Development of Technologies for Carbon Recycling and Next-Generation Thermal Power Generation / Development of Technologies for CO_2 Reduction and Utilization" by Japan's New Energy and Industrial Technology Development Organization (NEDO), with the title "Development of Carbon Material Manufacturing Technology by Chemical Decomposition of Carbon Dioxide."



【Development Process】

- To create a new business aimed at carbon neutrality, we began R&D in 2017 for a technology to decompose CO_2 for recycling into carbon materials. After repeated testing, we successfully decomposed CO_2 and recovered a particulate carbon nanomaterial in a beaker-scale test in 2018.

【Working Towards Commercialization】

- This commissioned project will span five years from FY March 2022 to FY March 2026, during which we will study feasibility through development of basic technologies, process optimization, expansion of carbon applications, and economic analysis. We aim for practical application around 2030, after verification testing on a larger scale.
- The project is currently proceeding as planned.

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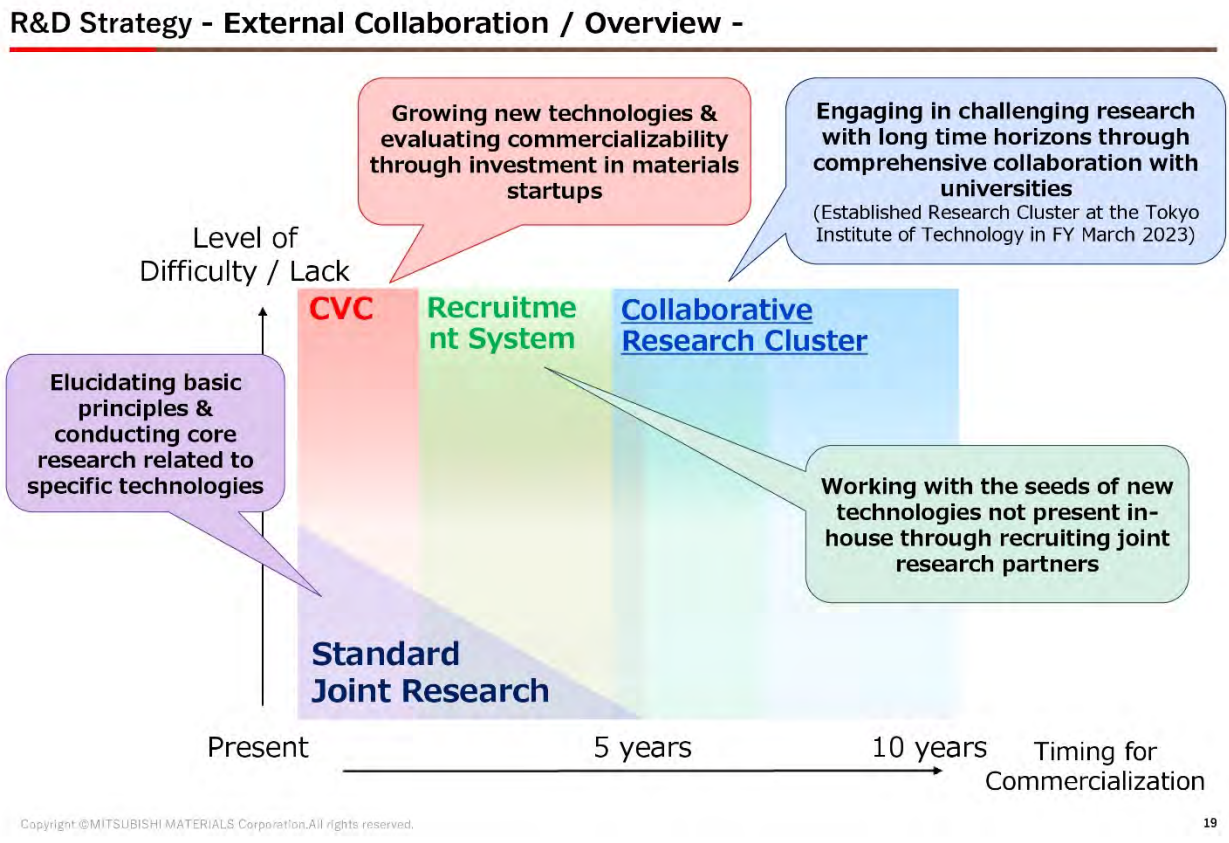
This is our carbon recycling initiative. This is also something we have applied to NEDO and are currently working on.

Originally, around 2017, we started to develop the technology within our Company as carbon recycling by decomposing CO2. Within the NEDO-commissioned project, we are proceeding with the project for five years, from FY March 2022 to FY March 2026, with the goal of practical application around 2030.

We are proceeding with the cycle of decomposing CO2, separating oxygen, producing hydrogen, and then returning to the source to activate the reductant to decompose CO2, with the belief that this will enable efficient carbon recycling.

1. Manufacturing Excellence and R&D Strategy (R&D Strategy)



I would like to explain how we strengthen our R&D functions through external collaboration. It is represented by two axes, with the horizontal axis representing the time of commercialization and the vertical axis representing the degree of challenge and difficulty.

Conventional joint research tends to be somewhat biased toward the lower left area. In order to solve this problem, we are working with CVC, or so-called start-ups, to accelerate commercialization and foster the development of new businesses. In addition, we have also established a system to promote R&D together for more challenging projects that are not bound by the conventional framework of joint research through an open solicitation system.

Furthermore, in order to tackle long-term, challenging projects, we have established joint research centers that work on technology development in comprehensive collaboration with universities.

Specific details of these bases are explained on the next slide.

1. Strategy on Manufacturing Excellence and R&D (R&D Strategy)

R&D Topics - External Collaboration / Establishing a Research Cluster at the Tokyo Institute of Technology -

➢ Major Collaboration with a Top University Looking to the Next Decade

Mitsubishi Materials Sustainability Innovation Collaborative Research Cluster

- **Research Subjects** Innovative materials and processes that contribute to a sustainable society
- **Research Goals** Creating innovative materials and processes which contribute to a sustainable society, based on the concept of Green Transformation (GX), through collaboration on research that would be difficult for MMC to conduct independently
- **Research Focuses** Materials and processes related to composites, next-generation batteries, CO2 utilization, renewable energy, recycling / reuse, etc.
- **Period of Activity** September 7, 2022 – March 31, 2026

FY Mar. 24 Progress

- Research progressed under 8 themes, including next-generation battery materials and CO_2 utilization, and composites.
- We mutually formed working groups under the topics shown to the right, and examined research themes.

FY Mar. 25 Plans

- Begin R&D on research topics (currently 5) as they are designated by the working groups.

Working Groups

Semiconductors	Shaping	Production Technology
Element Risks	Recycling	Energy

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I would like to explain about the research center we have established at Tokyo Institute of Technology. The center will research innovative materials and processes that will contribute to a sustainable society and will continue until March 31, 2026.

In FY March 2024, the project's first year, eight themes were in progress. In addition, we have established a working group to discuss with the university professors what kind of highly challenging projects we need as a group for the long term. After discussions, we have decided on the themes for FY March 2025 and are now in the process of starting the project.

Since we have not yet fully explored all the themes, we will continue to discuss with the Tokyo Institute of Technology what kind of technologies are necessary for our Company and for society as a whole, while setting up new themes.

R&D Topics - External Collaboration / CVC (Corporate Venture Capital) -

● CVC Overview

- In March 2019, we partnered with JMTC Capital G.K. (a 100% subsidiary of Japan Material Technologies Corporation) to establish the "MMC Innovation Investment Limited Partnership," a corporate venture fund with the objective of investment in venture companies with material technologies.
- Responding rapidly to societal changes, we engage in R&D actively incorporating cutting-edge technology at home and abroad with our own technologies; in the Medium-term Management Strategy, we see next-generation vehicles, IoT and AI as important societal needs, and we will proceed with creating and growing new products & businesses in this area.

● Companies Receiving Investments (As of March 2024) : Company, Technology & Product Overview

Company	Technology & Product Overview
Elephantech Inc.	**Manufacture and sale of flexible circuit boards built using inkjet and copper plating technology**
EneCoat Technologies Co., Ltd.	**Manufacture and sale of Perovskite Solar Cells & related materials** (Our activities with EneCoat Technologies are presented on the following slide.)
CONNEXX SYSTEMS Corporation	**Development, manufacture, sales, planning, design, and system integration of next-generation power storage systems**
Nature Architects Inc.	**Provision of design algorithms making use of metamaterials, compliant mechanisms, and more**
Immunosens Co., Ltd.	**Development of immunosensors for point of care testing using Gold Linked Electrochemical Immuno Assay (GLEIA) technology**

This is the status of CVC, Corporate Venture Capital, which aims to collaborate with ventures in external partnerships. The companies that have already invested are the five listed below.

1. Manufacturing Excellence and R&D Strategy (R&D Strategy)

R&D Topics - Green Energy Activities / Perovskite Solar Cell Materials -

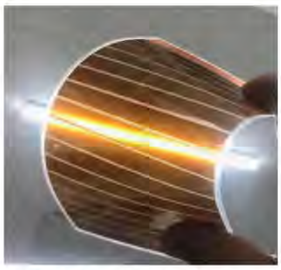
Investment & Additional Funding for EneCoat Technologies

Participation in NEDO's Green Innovation Fund Project/Development of Next-Generation Solar Cells

- Developing Peripheral Materials to Reduce Costs and Improve Performance of Perovskite Solar Cells -

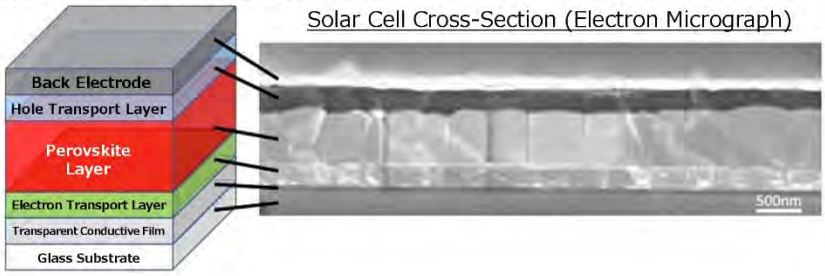
- Through the MMC Innovation Investment Limited Partnership*1, we are investing in EneCoat Technologies Co., Ltd., a company which aims to create viable perovskite solar cell products.
- We are collaborating with EneCoat Technologies to develop materials for the electron transport layer (a layer that functions to transport electrons generated in the perovskite to the electrode), and to promote the adoption of perovskite solar cells.
- EneCoat Technologies seeks to provide solutions in fields where thin-film solar cells are expected to make significant contributions (watches & wearable devices, rooftop power generation, ZEH / ZEB, solar cars, space development, solar planes, etc.).

*1 On March 1, 2019, we partnered with JMTC Capital G.K., a 100% subsidiary of Japan Material Technologies Corporation, to establish this corporate venture fund with the objective of investment in venture companies with material technologies.



Perovskite Solar Cell Concept
(courtesy of EneCoat Technologies)

Perovskite Solar Cell Structure Example



Solar Cell Cross-Section (Electron Micrograph)

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Among them, I would like to explain about EneCoat Technologies. This is our work with EneCoat Technologies on perovskite solar cell materials.

As you are all aware, various companies are working on the development of perovskite solar cells or similar thin-film type solar cells. However, EneCoat Technologies is an independent venture based on technology originally developed by Kyoto University, in which we have invested and are collaborating with the venture. We are contributing to the venture by developing materials for the electron transport layer used by EneCoat Technologies.

In the future, we would like to encourage the growth of this product in fields where thin-film solar cells are expected to play an active role.

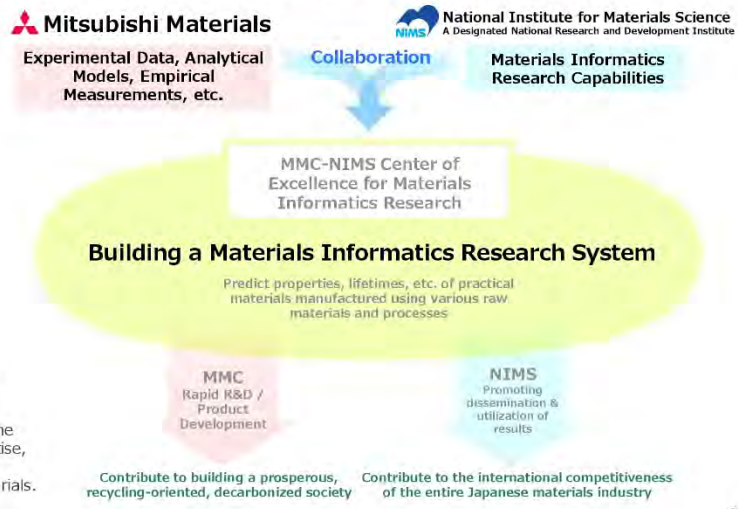
R&D Topics - External Collaboration / Materials Informatics (MI) -

Establishing the MMC-NIMS Center of Excellence for Materials Informatics Research

- Mitsubishi Materials Corporation ("MMC") and the National Institute for Materials Science ("NIMS") established the MMC-NIMS Center of Excellence for Materials Informatics Research.
- By combining various elements including MMC's experimental data, analytical models, and empirical measurements gathered through our materials development research, with NIMS's materials informatics research capabilities*1, we are building systems that can predict the properties, lifetimes, etc., of practical materials manufactured by combining various raw materials and processes. Specifically, we seek to have systems that can handle nonferrous metals, thin film materials, organic-inorganic composite materials, and more, by 2025.
- At MMC, we are furthering the enhancement of R&D and manufacturing processes that incorporate revolutionary technologies such as IoT, AI, and robotics. By creating this system with NIMS and incorporating it into our R&D, we aim to greatly reduce the time previously spent by humans on data collection and analysis.

【Results】
An example of our results is presented on the following slide.

*1 These research capabilities include the ability to combine various sources of information (data) with scientific expertise, including data science, computational science, theory, experimentation, and simulation, in order to develop materials.



Next, in terms of collaboration with external parties in the area of materials development, I would like to explain the National Institute for Materials Science and the MMC-NIMS Center of Excellence for Materials Informatics Research.

NIMS has an information-integrated materials development platform, and by integrating experimental data, analytical models, and empirical rules based on various experiments that we have developed, we are currently working to create a system that can predict the performance and lifetime of practical materials made through a combination of multiple materials and processes by 2025.

I will explain the results on the next slide. I believe this is a very significant initiative to promote the use of digital technology in the area of R&D, which has not been easily accessible in the past.

R&D Topics - External Collaboration / Materials Informatics (MI) -

Building a Property Prediction Model for Copper Alloys
- Supporting the Superiority of Mitsubishi Materials' Magnesium-Copper Alloy MSP™ Series -

【Overview】

- Mitsubishi Materials Corporation ("MMC") and the National Institute for Materials Science ("NIMS") have developed a new property prediction model for copper alloys with an exhaustive range of 86 elements.
- The results of joint research using this model conducted by these two organizations show that magnesium (Mg) is the best element overall for creating copper alloys.
- These results are based on joint research conducted at the MMC-NIMS Center of Excellence for Materials Informatics Research (est. 2020). This work was achieved by combining MMC's copper alloy design and simulation technologies with NIMS' specialized "data-driven approach" – a materials development method based on data science.

【Research Results】

- The figure to the right shows the predictions for mechanical and electrical properties made using the property model.
- Alloys in the lower-right portion of the figure are superior because they possess higher mechanical strength while limiting increases in resistivity.
- The first five rankings are either high-cost or toxic. Cu-Mg has the best balance of properties, cost, and safety profile.

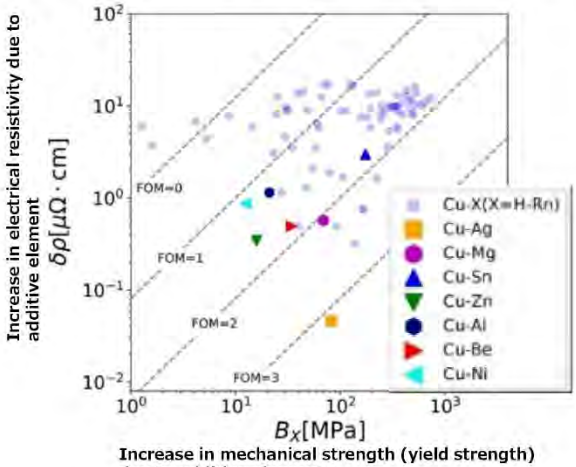


Figure 1. Relationship between mechanical and electrical properties of solid-solution alloys.

As a specific example, the figure here illustrates the superiority of the MSP series, which I introduced earlier, among the models for predicting these characteristics.

The figure on the right, plotting what the mechanical and electrical properties would be when combined with each element, is the output. In this figure, the copper alloy with added magnesium that we have been working on has been derived in this study to be the most suitable when evaluated comprehensively in terms of properties, cost, and safety.

From now on, we would like to continue these joint activities with NIMS, not only to confirm the position of these conventional products, but also to search for new alloys.

1. Manufacturing Excellence and R&D Strategy (Intellectual Property Strategy)

Intellectual Property Strategy
- Our Commitment and Important Measures in the FY2031 Strategy -

Commitment through the FY2031 Strategy

1. To **build an optimal intellectual property (IP) portfolio** in accordance with the Group-wide business and development strategies
2. To **contribute to the creation of new businesses and the strengthening of existing businesses** by providing management & technical information based on **advanced IP analysis and research (the IP landscape)**
3. **To make strategic use of the Group's IP**

Important Measures

- Strategic dialogue
- IP formation following a strategic approach
- Establishing a PDCA cycle for IP activities
- Effectively utilizing dormant patents

*Strategic Dialogue
Business Divisions and Intellectual Property Division to share business and IP information with each other and use analysis of this information to incorporate IP perspectives into development and business policies

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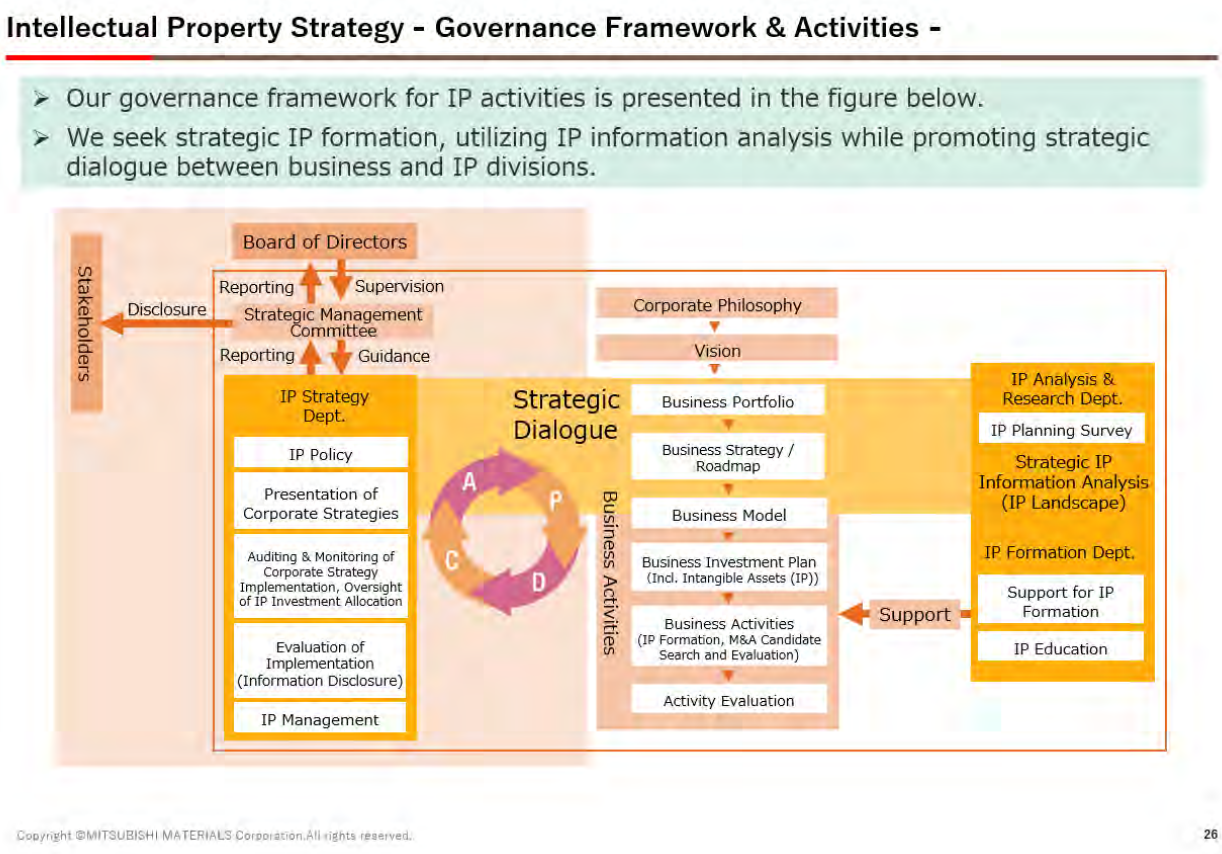
Next is our intellectual property strategy.

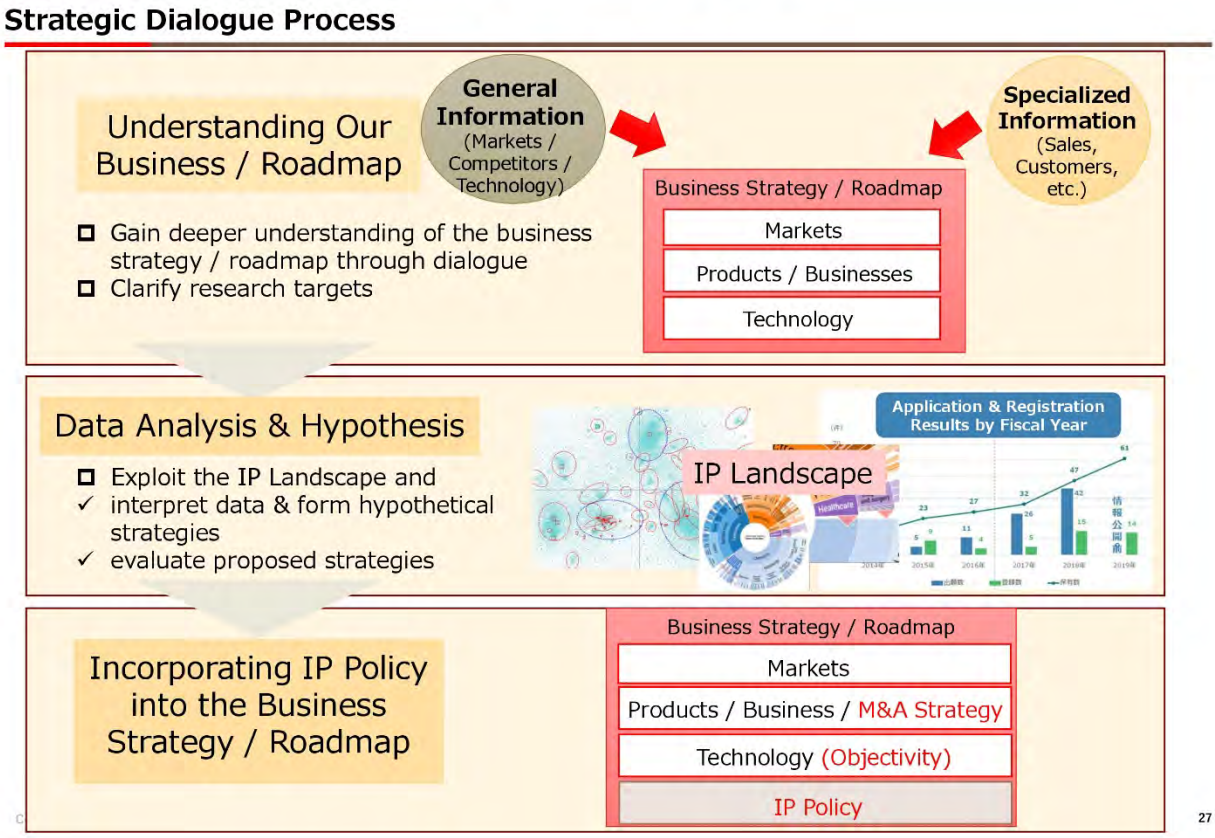
We are aiming to achieve the following three goals: specifically, we aim to create an optimal intellectual property portfolio; create new businesses using advanced intellectual property analysis and research techniques and IP landscapes; and contribute to the strengthening of existing businesses while strategically utilizing the intellectual property of the Group as a whole.



Under the supervision of the Strategic Management Committee or the Board of Directors, we will firmly build up these intellectual properties as non-financial capital with effective governance.

While aiming for strategic IP formation through collaboration between the business and intellectual property divisions, centered on strategic dialogue in the middle, the PDCA cycle is carried out under the supervision of the executive management team or the Board of Directors, respectively.

1. Manufacturing Excellence and R&D Strategy (Intellectual Property Strategy)



This slide shows a schematic diagram of how to proceed with a specific strategic dialogue. Based on general or specialized information, we will understand the strategy and roadmap of the business, and will analyze such information to formulate a hypothesis and then test that hypothesis again.

Ultimately, we will incorporate intellectual property policies into the business roadmap and finalize a roadmap with a solid structure, while also incorporating not only our own business but also M&A, in order to create a business strategy with the business divisions for each theme.

New Businesses - Activity Overview -

Identify promising ideas from among many candidates, and continuously create & grow businesses while keeping use cases clearly defined

●Generate more themes ●Strongly promote commercialization ●Grow businesses

Challenges in New Business Creation and Measures Taken in Response

Challenges	Measures Taken
Increasing the number of themes	• Implementing internal venture (recruitment) system • Promoting the mindset through education and training • Appropriate allocation of development resources at the hypothesis evaluation stage
Strong promotion of commercialization	• Implementing stage gates that reflect lean startup methodology • Investing sufficient resources at the stage of preparation for commercialization • Developing & growing numbers of human resources who promote commercialization (CEO, etc.) • Utilizing external resources through the acceleration program • Implementing an industry-academia collaborative research recruitment program • CVC aimed at finding seeds
Growing (connecting) business	• CVC, M&A aimed at business development • Portfolio management for businesses to be developed • Top-down development of new businesses in fields of focus

- **Acceleration Program Announced in FY March 2024**
- **Carry out the measures shown here during Phase 1 of the FY2031 Strategy (2023 – 2025)**

From this slide, I would like to introduce our new business initiatives.

Regarding new businesses, there will be a wide variety of ideas, some successful and some unsuccessful, so we will continue to identify the best ones from among the many ideas we have, and we will make sure that these good ideas have a clear way out and are released to the world, and we will continue to work on such a cycle.

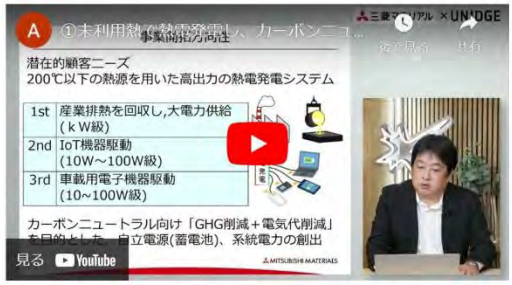
Therefore, we will utilize the in-house venture system, etc., to increase the number of themes, while building a system that allows mini-startups to strongly promote the business while also supplying human resources or utilizing external resources.

Ultimately, we aim to develop not only the ideas that emerge but also to grow them into large businesses, involving M&A and other means to add more outside resources.

New Businesses - Utilizing External Resources -

Announcing the MMC Acceleration Program: Wild Wind

Wild Wind Landing Page



Discussion of a Theme by the Idea's Presenter

Informational Gathering for the Program

We are recruiting and matching external partners under specific themes.

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Regarding new businesses, an example of utilizing external resources is our acceleration program, which we call “Wild Wind,” as illustrated in the diagram.

With regard to the themes that we would like to launch as new businesses, we will introduce them to a wide range of venture companies and others who are interested in collaborating with us, and we are currently in the process of matching those who have applied.

In this way, we would like to accelerate new businesses that are open to the outside world rather than confined internally.

1. **Manufacturing Excellence and R&D Strategy (New Businesses Strategy)**

New Businesses - Life healthcare Related／Topics -

New Company That Provides Dental Checkup Services for Health Insurance Operators Established

Mitsubishi Materials Corporation ("MMC") established Dental Door Corporation ("Dental Door") to provide the cloud-based dental checkup service, Smart Dental Checkup™, for health insurance operators (*1).

【Background to date 】

- Since December 2022, MMC has worked with Japan Dental Hygiene Association Corporation (Location: Meguro-ku, Tokyo, Representative Director: Junichi Sawai) on the feasibility of the cloud-based dental checkup service, Smart Dental Check up™. (*2)
- MMC decided to establish Dental Door and enter the business because based on pilot provision of the service and investigation of the business environment the business has been judged to have sufficient feasibility and potential. With the cooperation of Japan Dental Hygiene Association Corporation, MMC started the service in February 2024.

【 Business features and future plan】

- Smart Dental Checkup™ is a checkup service that digitizes the inside of the mouths of the examinees and that is intended for dental checkups conducted on groups such as workplaces.
- Digitizing such data will enable examinees to zoom in, zoom out and rotate 3D models of their teeth and gums on their smartphones so they can see every corner of their mouth, which was previously difficult to see directly.
- This business will be MMC's first full-scale initiative in the healthcare field and the company will work on the development of systems for use in the service, etc. to commercialize the business with the goal of achieving annual net sales of ¥5 billion as soon as possible.

Logo mark of Dental Door Corporation

Smart Dental Checkup™ smartphone website screen

（*1） Applies to health services provided by insurers such as health insurance associations, Japan Health Insurance Association and mutual aid associations.

（*2） Press release dated December 9, 2022
Commenced Investigation on the Commercialization of Dental Checkup Services for Health Insurance Operators
URL：https://www.mmc.co.jp/corporate/en/news/2022/news20221219.html

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Specifically, I would like to explain two new businesses we are working on.

The first is the establishment of Dental Door, a company that provides cloud-based dental checkup services.

This is a checkup service that digitizes the inside of the mouth of the examinees and that is intended for dental checkups conducted on groups. The feature of this service is that the examinee can view and check such data on their own smartphones. In order to reach annual sales of ¥5 billion as soon as possible, we will continue to work together with the Japan Dental Hygiene Association, with whom we have a cooperative relationship.

1. Manufacturing Excellence and R&D Strategy (New Businesses Strategy)

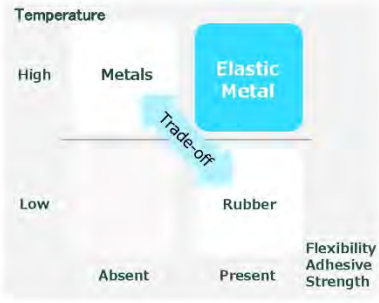
New Businesses - Metal Materials / Topics -

Developing Elastic Metal™, a Revolutionary Material with the Flexibility of Rubber

We have developed Elastic Metal, a revolutionary new material that can be used in the same kinds of high-temperature environments as metal while achieving the flexibility of organic materials.

【Issues We Hope to Solve】

Rubber and other organic materials are typically selected for applications that require flexibility, while metals are chosen for uses that require heat resistance. However, organic materials have lower heat resistance, so their uses are limited in high temperature environments, which necessitates trade-offs based on the characteristics of the material selected.

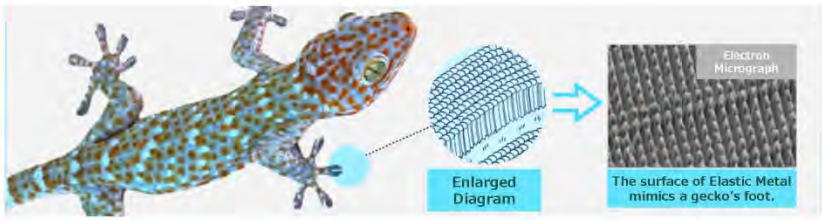


【Developing Solutions】

We began developing a novel material that could provide both heat resistance and flexibility. Taking inspiration from the adhesion mechanism of the stiff hairs on a gecko's foot, we applied the biomimetic surface enhancement technology currently under development within MMC to create specialized microstructures on metallic surfaces. The result was Elastic Metal, a material which can be used in the same kinds of high temperature environments as metal while maintaining the flexibility of organic materials.

【Future Applications】

We anticipate expansion into adhesion/temporary fixation applications where both high heat resistance and flexibility are required. In particular, we anticipate developing uses in fields including aerospace, semiconductors, and healthcare.



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Next, I would like to introduce metallic rubber.

In the past, metallic or organic materials have been used in various fields, but as shown in the figure on the right, rubber has the advantage in flexibility and adhesiveness, while metal has the advantage in terms of the temperature range in which it can be used, and customers have had to make a trade-off in their choices.

The metallic rubber developed by our Company combines the advantages of rubber and metal, and is currently being commercialized as a product that can be used at high temperatures while maintaining a certain degree of flexibility.

Originally, it was developed as part of the development theme of biomimetics, aiming at adhesion and temporary fixation applications, especially in the demanding fields of aerospace, semiconductors, and medical care; we are currently in discussions with various partners and potential customers.

DX Strategy

From here, I would like to talk about our DX strategy.

2. DX Strategy

Materiality

Materiality
Creation of a recycling-oriented society
Contribution to global environment
Sustainable supply chain management
Respect for human rights
Workplace safety and hygiene
Maintenance and improvement of governance
Retainment and utilization of human capital
Stakeholder communication
Deepening of DX
Initiatives to create new value

Key Themes	Main Initiatives	Objectives, etc.
Business process innovation	Thorough transition to paperless and seal less operation; promotion of consolidation and elimination of operations; utilization of IT tools and smartphones for innovation of our communications	Optimization of operations to ensure that the company continues to be one where each employee can actively engage in our fundamental operations; realization of a functional and agile organization with quick decision-making
Operational enhancement	Utilization of digital technologies such as IoT and AI to strengthen cooperation between the manufacturing and sales sides and achieve proactive quality management and take manufacturing capability to the next-level	FY March 2026 onward: Commencement of global demand management operations for cutting tools; gradual expansion sites and products By FY March 2031: Strengthening of manufacturing capabilities through measures such as improvement of processes and process technologies; conversion to smart factories
Acquisition of new added-value	Enhancement of customer contact points; reform of business model based on the needs of customers and society	FY March 2025 onward: commencement of service for selection of the best cutting tools; expansion of cutting solutions FY March 2026: Enhancement of supply chain by improving satisfaction of MEX users By FY March 2027: Enhancement strategies for each product through faster calculations of raw costs and visualization of granularity

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As with the R&D and manufacturing mentioned earlier, this slide shows the positioning of DX within the Materiality.

Regarding DX, it is directly mentioned in the Materiality, and we as a Group view the “Deepening of DX” as one of our Materialities. As priority themes, we are working on “Business processes innovation,” “Operational enhancement,” and “Acquisition of new added-value.”

2. DX Strategy

Four Management Reforms

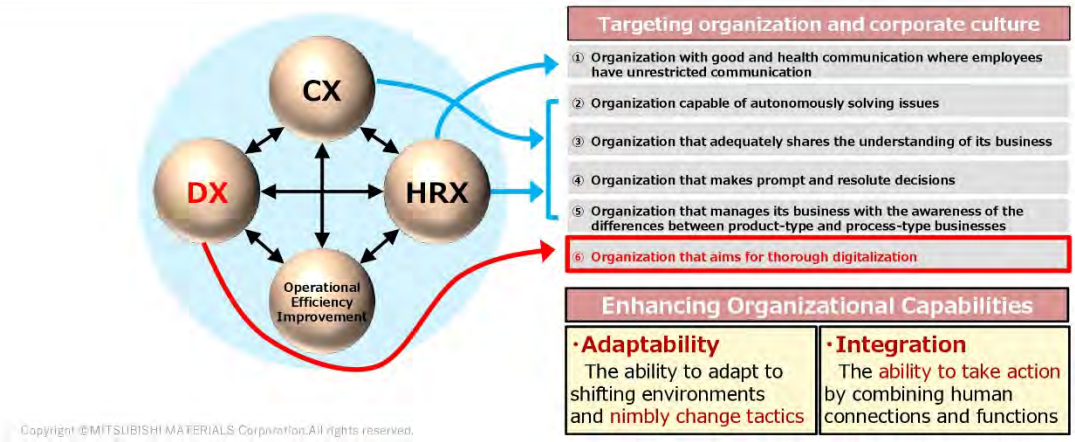
In light of environmental changes, we are pursuing the Four Management Reforms with the aim of further enhancing our organizational capabilities.

CX : **Reform into optimal form of group management (organization /business management)**
Strategic Headquarters +Professional CoE responsible for sophistication and efficiency
+strong Business Division implementing autonomous management (in-house company)

HRX : **Reform of HR system and work style to acquire and develop autonomous talents who can adapt to changes**
① Introduction of Job-based HR System, ② Internal Job Posting System 、③Talent management, ④1-on-1 meetings、⑤ Next-Generation Leadership Talent Development

DX : **Reform through the use of utilizes data and digital technology**
Business added-value・Business operation competitiveness・Management speed

Operational Efficiency Improvement: Reform that reviews organizations, business processes and work styles



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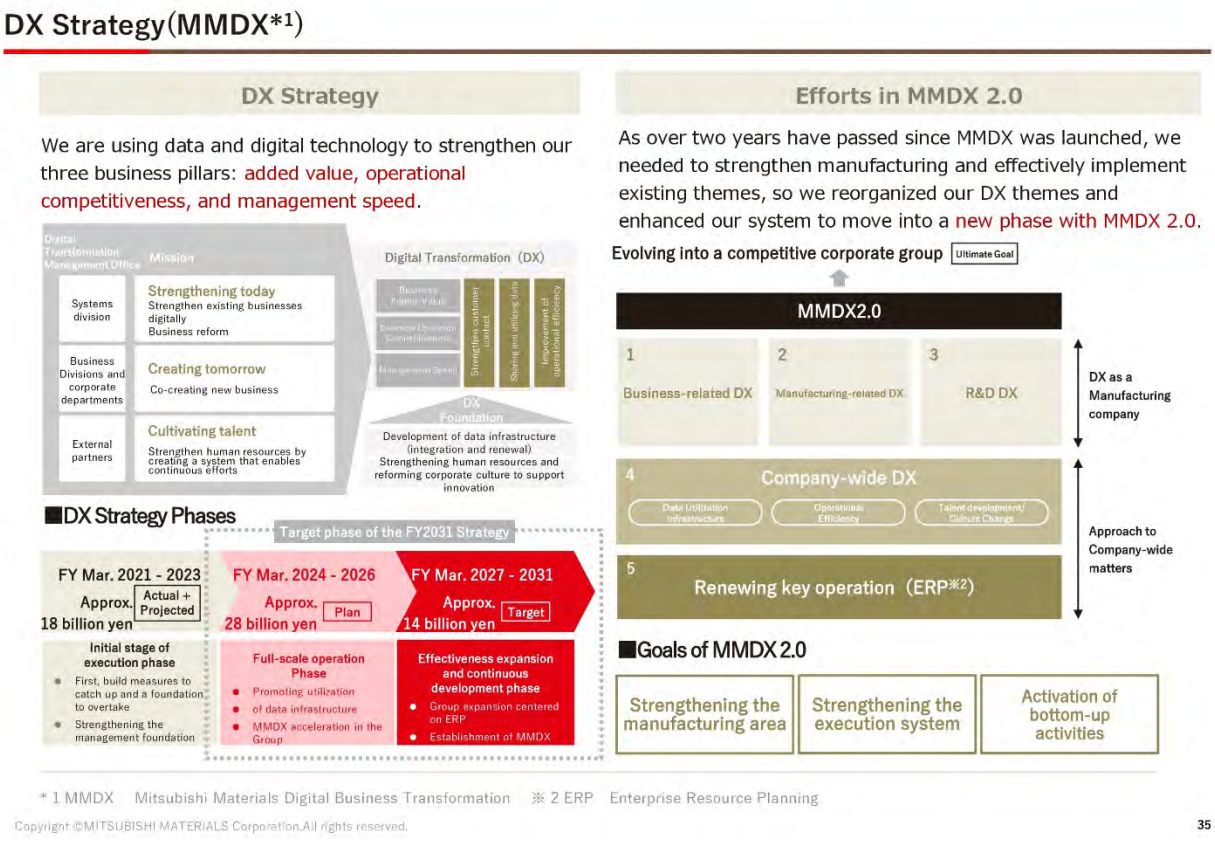
In addition, regarding DX, as indicated by the “X” in “transformation,” we are including various operational reforms. Therefore, DX is also positioned as one of the management reforms we are promoting, such as CX, HRX, and Operational Efficiency Improvement.

By using digital technology, as mentioned earlier, we are working on DX to change business processes and operations and ultimately increase the speed of management.

2. DX Strategy



We started DX in 2020, and the lower half of the diagram on the left shows the major flow of DX.

During the period of the previous Medium-term Management Strategy from FY March 2021 to FY March 2023, we invested about ¥18 billion, and during Phase 1 of the current FY2031 Strategy from FY March 2024 to FY March 2026, we are planning to invest about ¥28 billion. By proceeding with these investments, we are working to ultimately strengthen the present to create tomorrow and, furthermore, to nurture people.

In addition, as noted on the right half of the page, we have been partially restructuring our operations as MMDX 2.0 since October of FY March 2023.

By reorganizing themes and reinforcing the structure, we will promote business-related DX centered on contact with customers, which is the core of manufacturing DX; manufacturing-related DX, which is the foundation of the manufacturing industry; and R&D DX, which supports this DX, as the main pillars of DX. In addition, we are reorganizing our operations to promote the introduction of ERP as a means of renewing core business operations, while supporting these items with common DX.

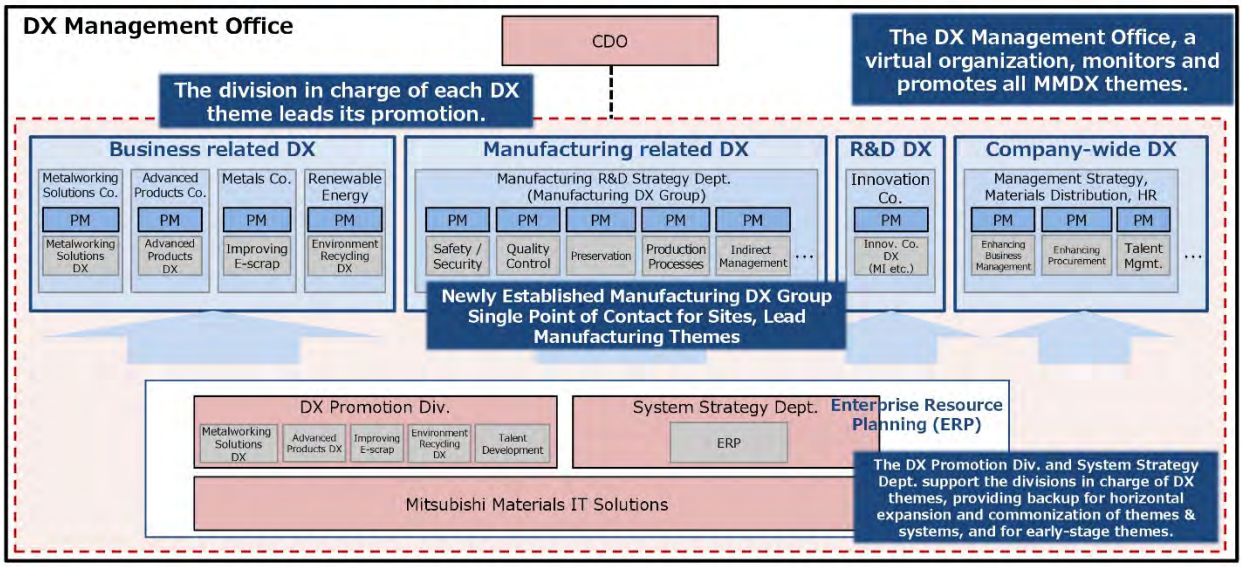
Rather than simply strengthening our points of contact with customers, we have re-started MMDX 2.0 to strengthen manufacturing from the very foundation.

As for our goals, our first priority is to strengthen the manufacturing area, which is the same as the purpose of the reorganization, and then we will promote each theme by firmly establishing the executive structure. Furthermore, we will activate bottom-up initiatives to ensure that DX takes root in the Company.

2. DX Strategy

DX Promotion System

- The DX Management Office, a virtual organization with the CDO at its top, monitors overall MMDX including progress, issues, costs, resources, etc.
- The division in charge of each DX theme takes the lead on implementing promotion.
- The DX Promotion Div., System Strategy Dept., and Mitsubishi Materials IT Solutions support the divisions implementing DX promotion, and provide technical and HR backup for horizontal expansion and commonization of themes & systems, as well as for early-stage themes from worksites and new themes.

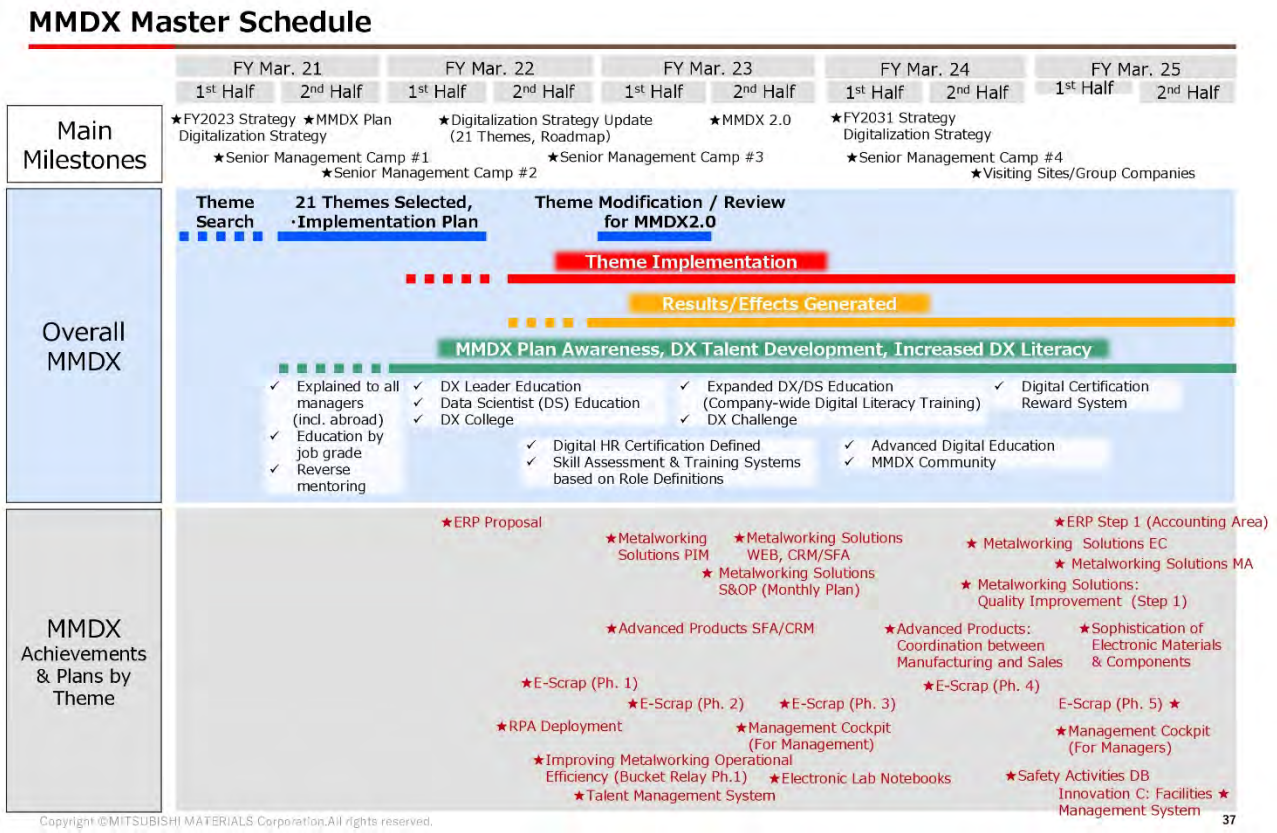


Regarding the structure, the DX management division, which is a virtual organization headed by the CDO, will monitor the overall progress, issues, costs, and resource allocation.

In terms of individual themes, each Company or business division naturally takes ownership of business-related DX, while functional divisions take ownership of common areas, such as safety and security, maintenance, and so on. To support these, we have the DX management department, the system strategy department, and Mitsubishi Materials IT Solutions Corporation, a Group company.

Mitsubishi Materials IT Solutions, the headquarters or common division, will promote overall DX by providing human and technical backup for themes or new themes originating from the field in the initial stage while keeping in mind the perspective of overall optimization, horizontal development, and commonization of themes and systems.

2. DX Strategy

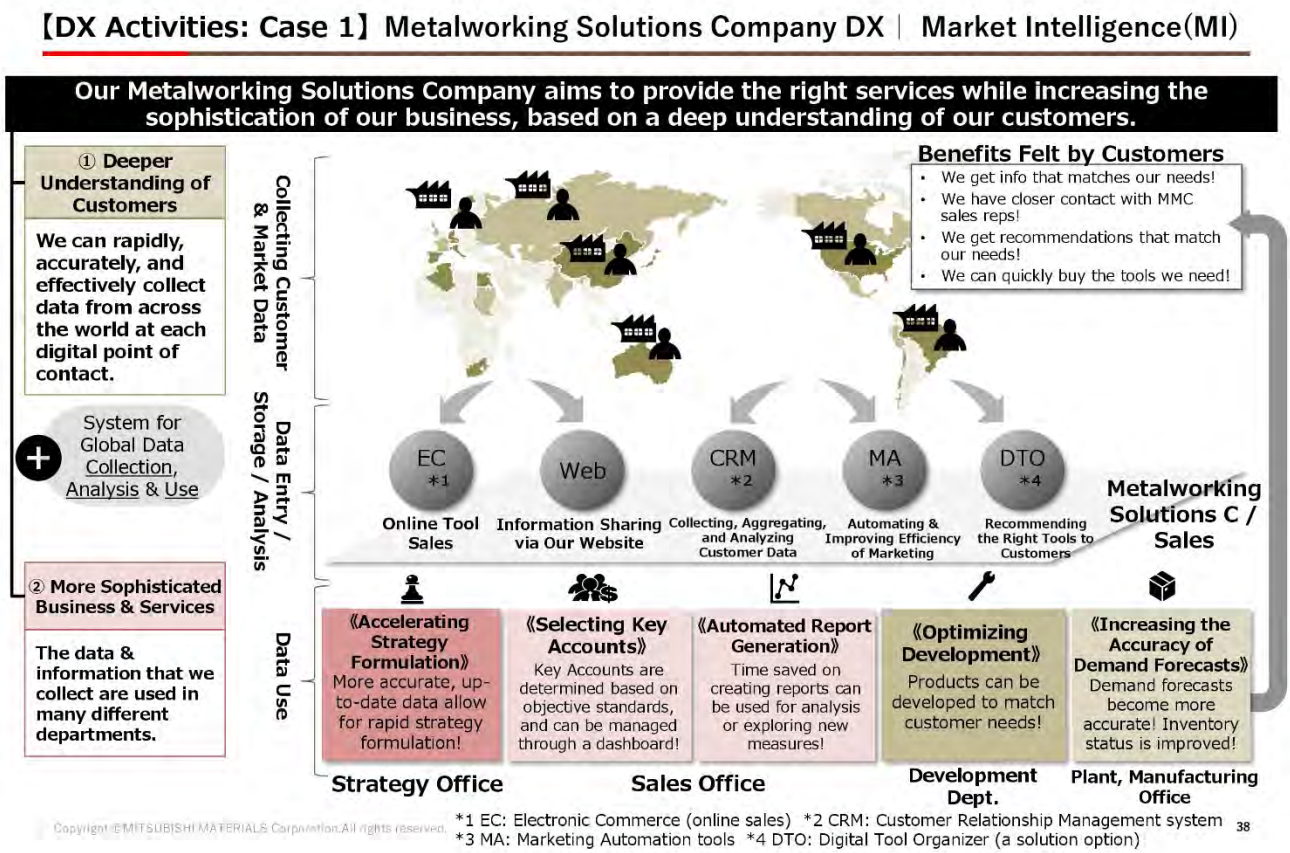


This is the overall schedule, cut out for FY March 2025.

As I mentioned earlier, we officially started DX in FY March 2021 and are currently in the process of completing H2 of FY March 2024. In H2 of FY March 2023, in October, we changed the name to DX2.0, and we are currently proceeding as such.

Progress by a specific theme is indicated with a star in red in the column below. Solutions and services have already been launched.

The next slide shows what is underway at each of the Companies.



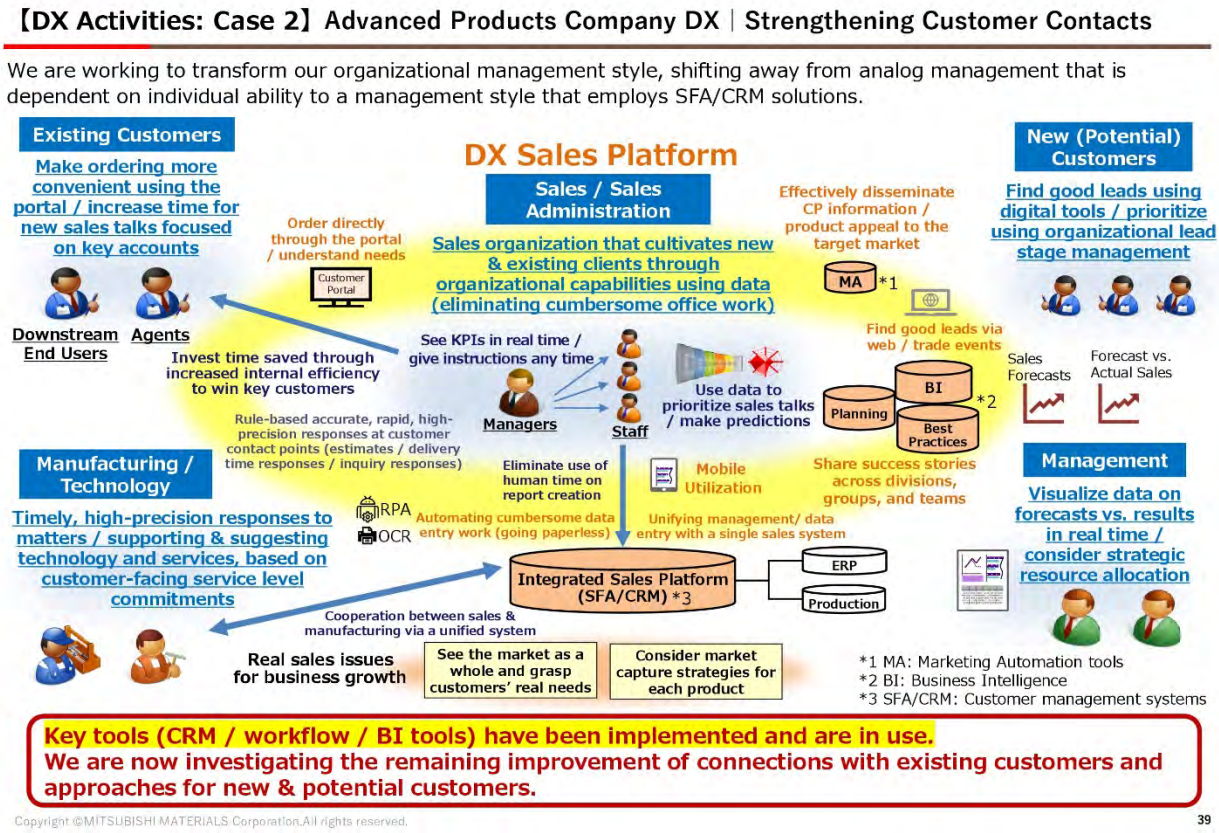
Here is an explanation of the market intelligence of the Metalworking Solutions Company. The purpose of market intelligence is to gain a deeper understanding of our customers and, based on that understanding, provide services and make our own operations more efficient and sophisticated.

Specific services and solutions include e-commerce, which is the sale of tools on the Internet, and enhancing our existing website to strengthen information dissemination.

We have CRM, which collects and analyzes customer information to promote advanced dialogue with customers; MA, which automates and streamlines marketing; and DTO, or digital tool organizer, which makes proposals to customers regarding cutting tools and other products, the core products of the Metalworking Solutions Company.

These services are ultimately linked to customers, and although they may appear to be sales-driven, they are actually supported behind the scenes by the development and manufacturing divisions of the production sites. By optimizing development and improving the accuracy of demand forecasting, the manufacturing and development divisions will also participate in this kind of market intelligence, and the entire Metalworking Solutions Company will work together to enhance this service to deliver better products to customers faster.

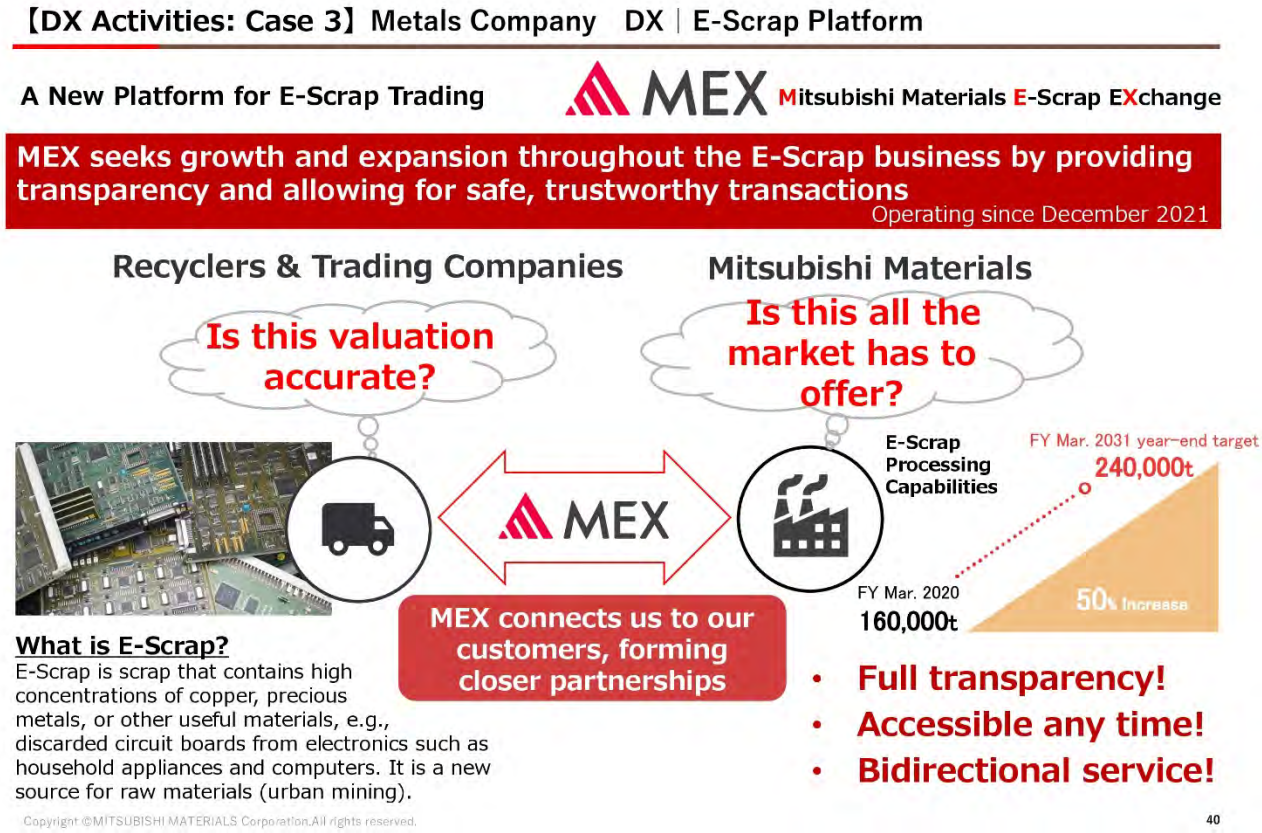
2. DX Strategy



This initiative strengthens customer contact points in the Advanced Products Company. This initiative is similar to the one mentioned in the Metalworking Solutions Company.

Taking the customer as the starting point, we will integrate the functions within the company, place various types of data on an integrated sales platform, and analyze them to improve our operations and deliver better products more quickly, a concept that is similar to that of the Metalworking Solutions Company.

Here, as well, we are making progress on each and every system, and have already completed the implementation of CRM, workflow, BI tools, etc. Regarding the specific utilization of these systems, we are constantly monitoring the situation and making improvements as we continue our efforts to upgrade our approach to our customers.



This is an initiative of the Metals Company. The Metals Company is aiming for growth by handling E-Scrap, gold, and silver slimes, and MEX has been implemented as a platform to support this growth.

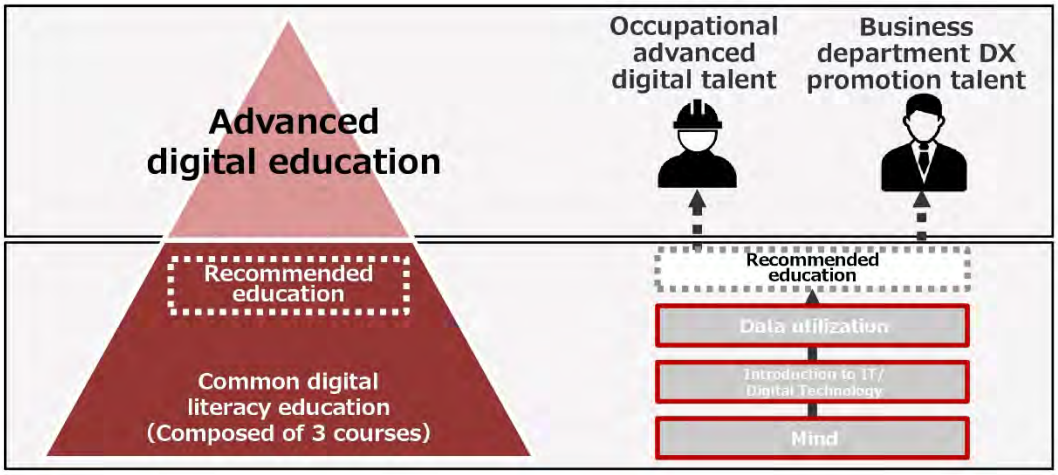
Having already been in operation since December 2021, it is now undergoing a period of growth as we continue to implement customer requests and areas that we would like to further strengthen. We would like to expand the E-Scrap business worldwide by connecting recyclers and trading companies with MEX, a safe and secure place for transactions while enhancing reliability.

Ultimately, we would like to actively contribute to the business unit's efforts to process 240,000 tons of E-scrap by the end of FY March 2031.

2. DX Strategy

【DX Activities: Case 4】Organizational Culture and Talent Development (1/2) | Digital Education Overview

- Common Digital Literacy Education ("Common Education") **aims to raise standards in order to encourage action** working toward transformation in which employees take ownership of DX / data-driven management. (Implemented company-wide as of July 2022.)
- In contrast, Advanced Digital Education aims to **develop talent with practical skills in order to promote DX / data-driven management** by further expanding the basic literacy fostered through the Common Education.



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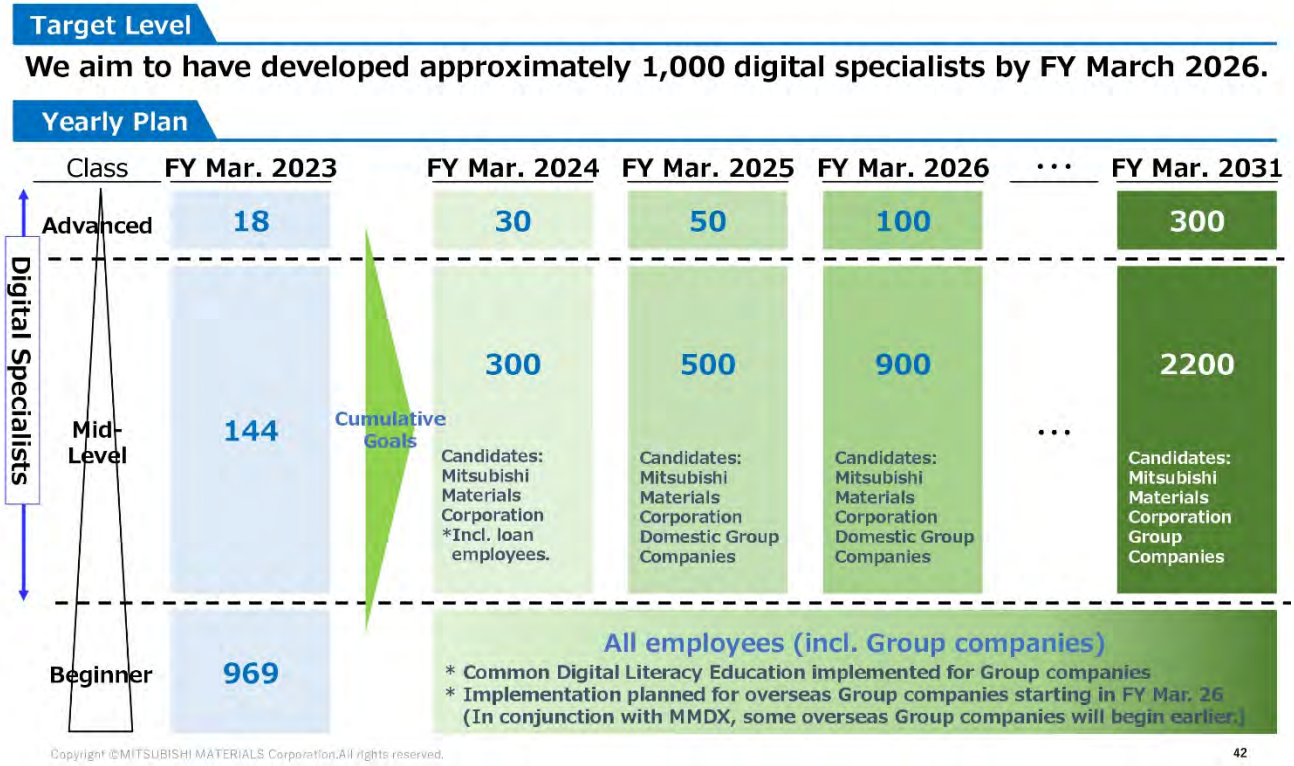
The next two slides explain the organizational culture and human resource development that support these DX activities.

First, this slide shows the overall picture of digital education. Common digital literacy education is the foundation, and advanced digital education is placed on top of it. Our goal is to nurture both high-level digital human resources in the workplace and human resources, which will promote DX as a business activity in those workplaces.

2. DX Strategy

【DX Activities: Case 4】Organizational Culture and Talent Development (2/2) | Digital Specialist Development Goals



This slide shows what kind of human resources we are looking for and how many we are planning to secure.

Our goal is to secure 1,000 digital specialists in FY March 2026 as an intermediate point, and we hope to ultimately secure 2,500 digital specialists in FY March 2031 for the entire Group.

Currently, as we approach the end of FY March 2024, we believe that we will be able to significantly exceed our targets of 30 employees at the advanced level and 300 employees at the intermediate level.

Furthermore, at the bottom of the page, we have written a number for beginner-level. We are promoting the common digital literacy training referred to in the previous diagram for all employees, and in FY March 2023, Mitsubishi Materials on a non-consolidated basis alone have completed the entry-level training for approximately 1,000 employees.

In addition to education for all, we are now working on developing a high level of digital talent at the intermediate and advanced levels, as described here.

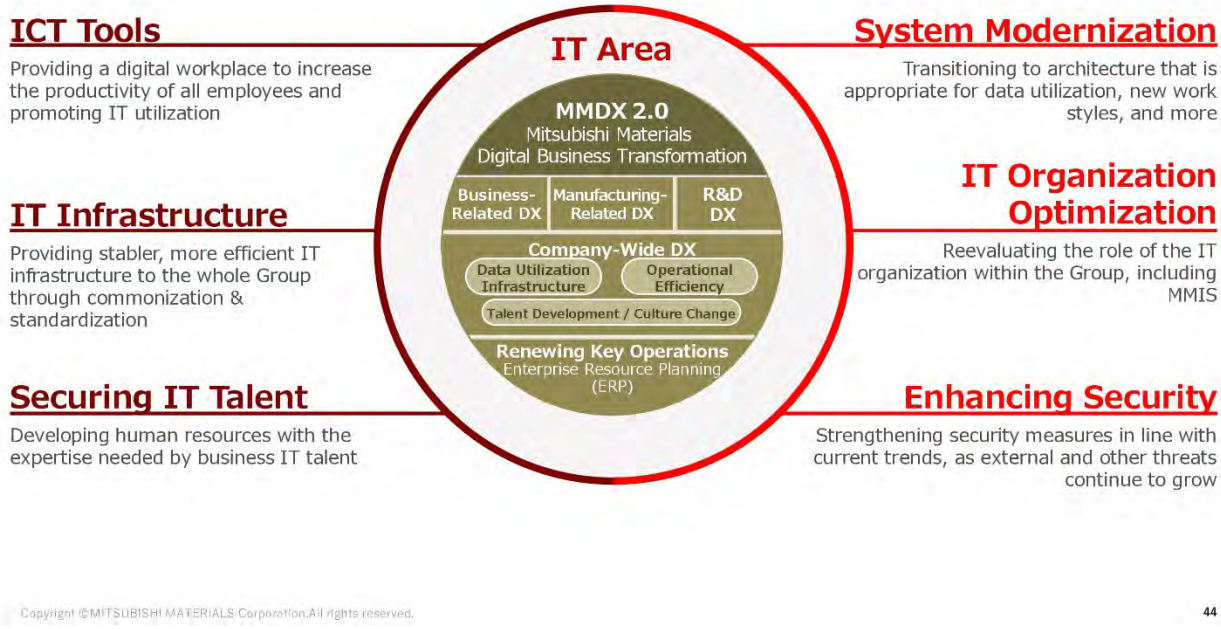
IT Strategy

Finally, there is our IT strategy.

3. IT Strategy

Positioning in the IT Area

System related functions, which are indispensable to the business and provide the underpinning for DX promotion, are provided in the IT area.
We will proceed with new initiatives as we continue to provide safe, efficient system infrastructure.

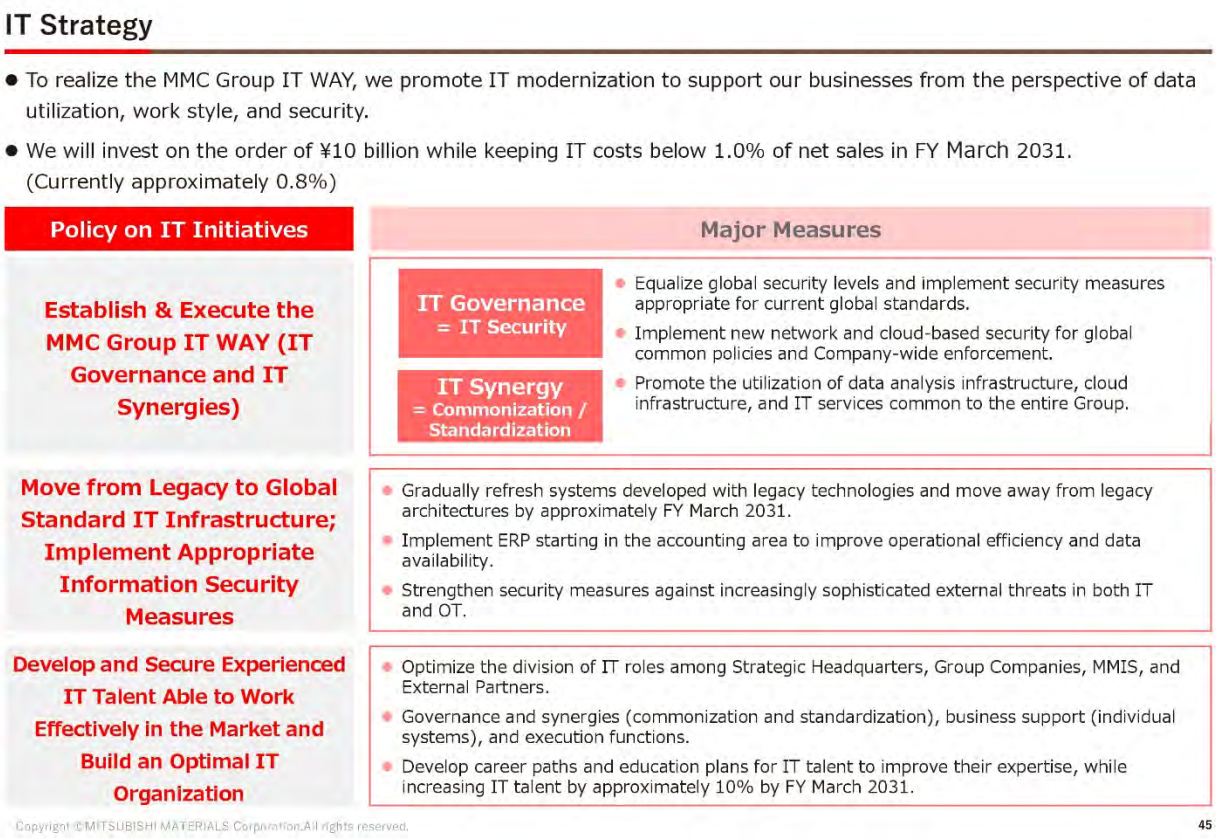


Recently, the boundary between IT and DX has become blurred. We are also strongly promoting IT and DX together. In this context, how to utilize or upgrade conventional IT remains to be determined, and this diagram describes what should be done in the IT area.

Naturally, we are working to secure IT human resources by enhancing ICT tools, developing IT infrastructure as the foundation for such tools, and securing members who can use or train such infrastructure and tools.

By using these tools, we would like to modernize old systems or systems made in old languages and optimize the IT organization. In terms of security, we would like to create IT that is well protected.

3．IT Strategy



Specifically, we will invest about ¥10 billion to promote IT modernization and support our business from the perspectives of data utilization, work styles, and security, and we hope to create an efficient IT infrastructure while keeping IT costs below 1% of sales in the final fiscal year of 2030.

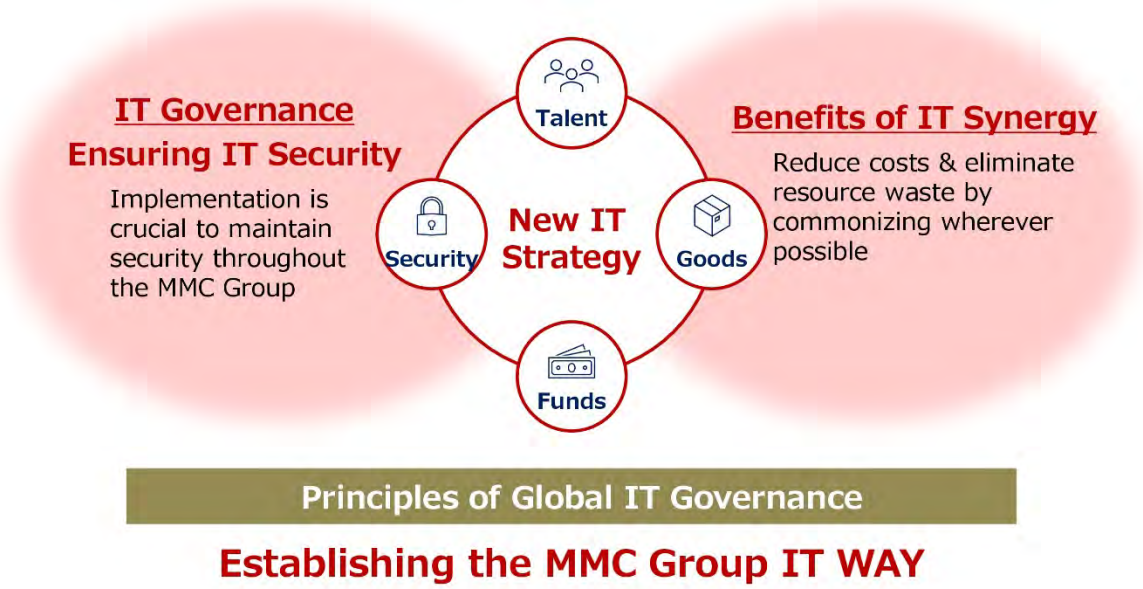
In doing so, we must pay attention to governance centered on information security, as well as to the implementation of synergies that promote commonality and standardization throughout the Group.

Furthermore, moving from an old system to a globally standardized infrastructure, providing appropriate security, firmly developing the human resources to support these efforts, and creating an optimal organization are the policies we are pursuing, as mentioned in the previous slide.

3．IT Strategy

Basic Principles in the IT Area

In the IT area, our basic principles are the establishment of governance (IT security) and synergy (commonization & standardization).



Principles of Global IT Governance

Establishing the MMC Group IT WAY

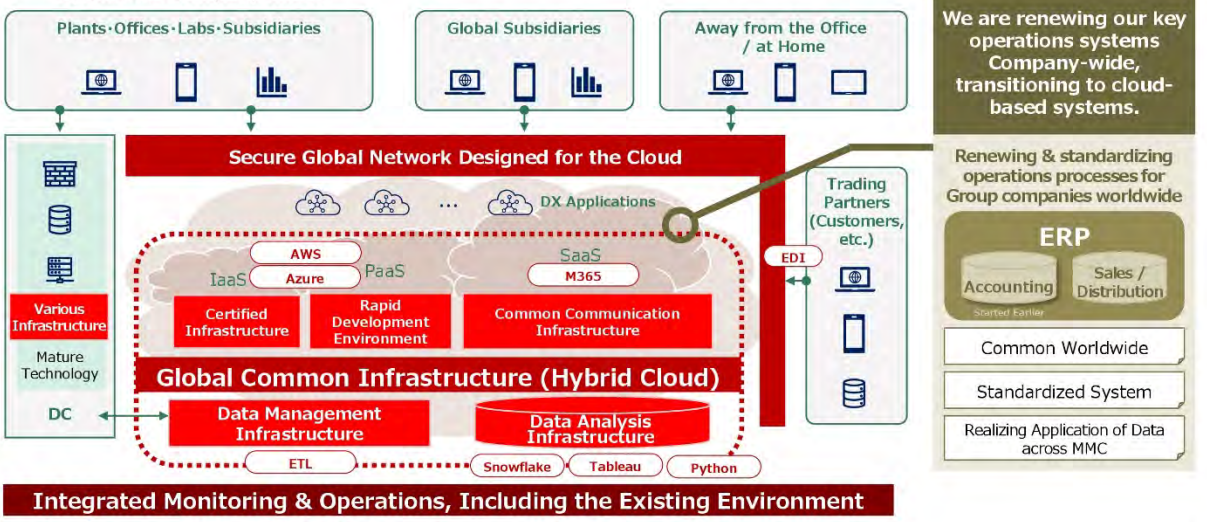
As I mentioned in the previous slide, the basic principle is to firmly rotate governance centered on security and synergy, centered on commonization and standardization, as the two wheels of the cart. We would like to promote this as the Mitsubishi Material Group's IT WAY.

Goods Area: Establishing a New IT Environment (1/2)

We are establishing Company-wide common IT infrastructure to support our global businesses, making safe and effective use of the cloud.

Cloud-Based IT Infrastructure

- We are establishing secure networks for use by both our sites across the globe and by our customers, as well as common cloud-based infrastructure.
- We are establishing systems using common infrastructure within our many DX initiatives, including renewing key operations Company-wide.



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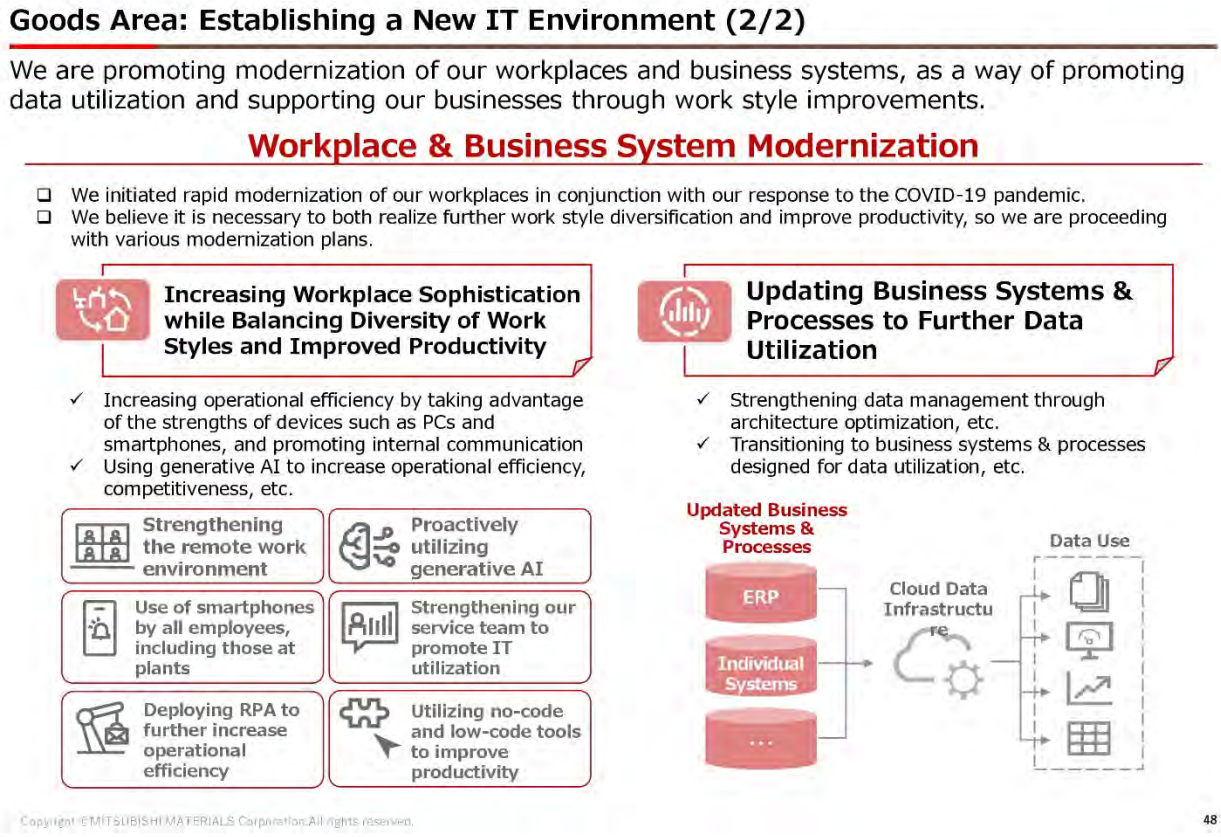
This is the development of the IT environment. Regarding this, we are developing a common infrastructure for the efficient and safe use of cloud computing as an infrastructure to support our global business.

As shown in the diagram on the left, we are providing various infrastructures and solutions and making them available on a global network in a secure manner. This will enable our factories, overseas subsidiaries, and employees to work not only in the office but also at a location of their choice while coordinating information with our customers and business partners. We are aiming to realize this in a secure, global network.

3. IT Strategy



The second slide is the IT environment development. Here, we are describing the modernization of the workplace and business systems.

In terms of workplace modernization, remote work is often promoted these days as a method of work style reform, and our Company has also been promoting remote work quite a bit since COVID-19. Currently, the attendance rate in the head office area is between 20% and 30%, and we have been able to transition to a system that allows for efficient operations.

We believe that this is due to the fact that appropriate ICT tools were in place before COVID-19, and we intend to continue to improve these foundations and tools in the future.

To this end, we have distributed smartphones to all employees, including factory employees, to strengthen the coordination of information, and we have also created a low-code, no-code environment in which employees with no previous programming experience can create their own digital tools.

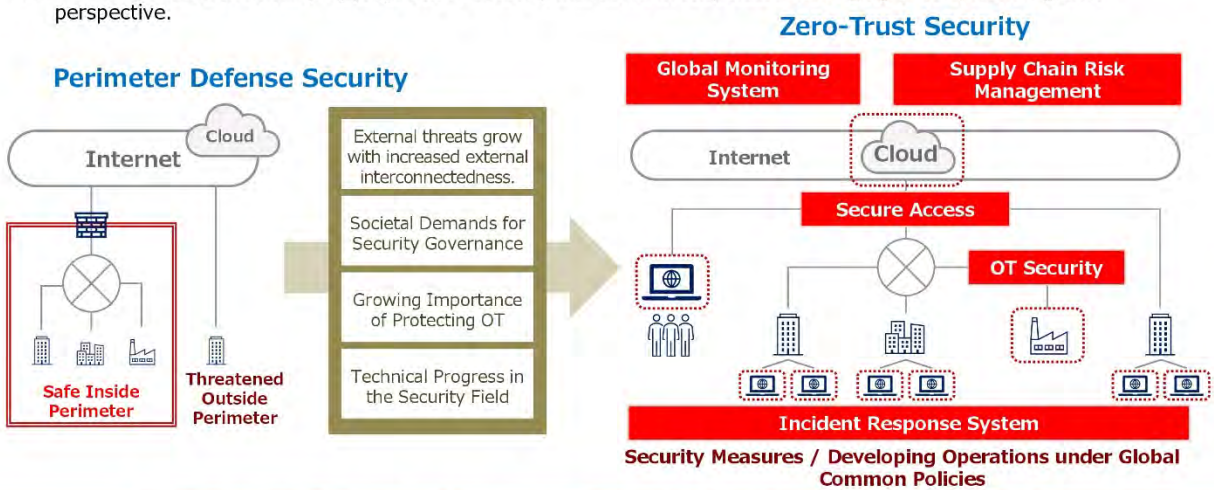
In addition, recently, with regard to generative AI, which has been very active, we are in the process of conducting a PoC (Proof of Concept) to utilize it in a secure environment while ensuring security within our Group. We would like to update our business systems and processes.

Security Area: Efforts to Maintain Security

In order to maintain security for our systems, we are implementing appropriate IT security measures worldwide, responding to changes in the external environment, etc.

Implementing IT Security Measures

- We are transitioning from a **perimeter defense**-based security system to a **zero trust security** model, and strengthening our supply chain risk management measures, etc.
- We will continue to develop appropriate IT security measures in response to changing trends, from a global perspective.



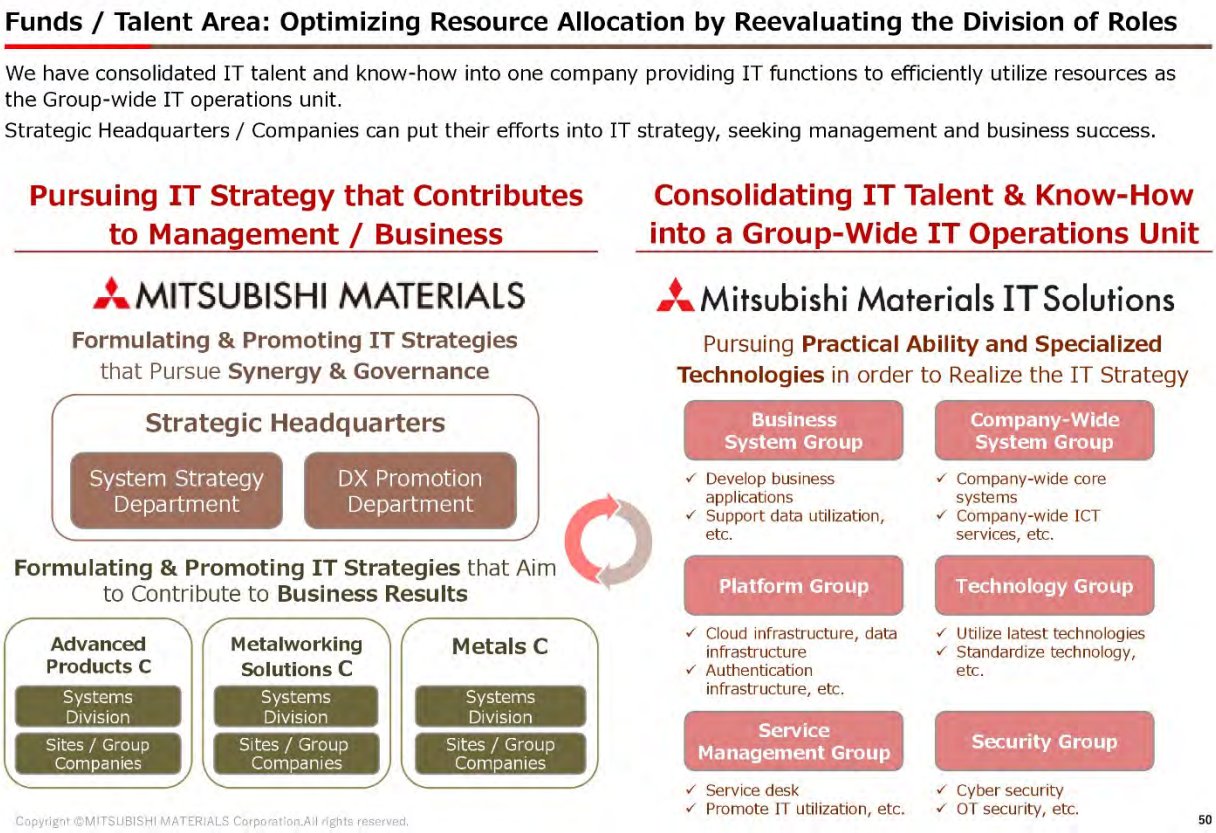
Ongoing IT Security Measures Responding to Changing Trends

An inseparable part when speaking in the area of IT is the area of security. This is a very important issue, and it is also an area where we can continue to spend money and resources indefinitely. Therefore, we would like to ensure appropriate security, and we would like to do so at an appropriate cost.

Rather than using conventional perimeter defenses, which protect only the inside of our network, we would like to switch to zero-trust security and ensure secure access throughout the supply chain as well. In addition, we would like to develop our network and other aspects from a global perspective.

What I would like to especially explain in this diagram is the OT security and incident response system on the right in the diagram. Although IT security tends to be limited to traditional office security, the Company has a variety of systems deployed at manufacturing and sales bases, and we would like to make a firm commitment to security in the OT area as well, and are currently in the process of improving security at each base.

In addition, even with these various defensive measures in place, anything can happen, so we are working to establish an incident response system that can respond quickly and minimize the impact of such incidents, which we believe has been built to a certain level.



This is the last slide. This diagram shows how we will finally promote this kind of IT strategy while sharing the roles.

As I mentioned in the previous slide, there is a Group company called Mitsubishi Materials IT Solutions. This company was recently established, and we intend to develop it into a powerful Group company with the expertise and execution capabilities to implement our IT strategy.

Regarding the head office and each Company of Mitsubishi Materials, each will develop and promote IT strategies that pursue synergies and governance or IT strategies that pursue business results. Although the role of the flagship remains the same, the execution of these strategies will be concentrated in Mitsubishi Materials IT Solutions as much as possible, and we would like to utilize it as a unified, efficient, and powerful promotion system.

Currently, Mitsubishi Materials IT Solutions has about 100 employees, but we will continue to strengthen its functions and personnel to develop it into a company that supports our Group's digital operations.

That concludes my explanation.

Question & Answer

Participant [Q]: I appreciate the material very much, and the content is very rich. I think that perhaps the analysts' questions, myself included, would be rather vague.

What I am interested in in the capital market is, of course, the importance of the investment and the execution of the investment, but at the same time, I am very interested in the kind of returns that have been generated in these areas.

I am sure there will be more presentations in this series over the next few years, but it would be appreciated if you could give us some kind of progress report on the results, such as the increase in efficiency or productivity in sales, accompanied by some figures. For example, if it is related to the "S" in ESG, it would be very good if we could see results, such as productivity increased by this much in white-collar workers, etc. I would very much like to see this continue in the future. This is not so much a question as a request.

In the course of spending ¥14 billion or so over a period of several years, what kind of positive impact has been made on your core business, as shown on page 38? And I would be very interested in this part of the report. Since MEX has been in operation for quite some time, I would like to know if you have seen any positive results and if you can give us any examples of such results.

The second point, which I think follows on page 40, is that just outsourcing is no good at all, and unless the people within the Company understand the system, this kind of thing will not work at all, as shown on page 42, and also in the newspaper today, which I found very interesting regarding the in-house training system. As for this area of creating more and more specialists within the Company, this is not a KPI either, but I hope you will update us on this in the future.

What I would like to know most now is what kind of positive impact has been made on the actual business in the process of starting this kind of initiative, and can you give us any examples?

Shibata [A]: Thank you for your continued support. Thank you for your questions or comments.

Regarding the first comment about quantifying the results, we will work on that in the next session.

In terms of specific results, for example, with regard to MEX, we have quantitatively been able to see an increase in the amount of gold and silver slimes treated by new customers and same customers and an increase in the amount sent to us. Today, we are not able to bring you the figures for this part of the project, but we are seeing solid results.

However, as you are aware, the conditions for gold and silver slimes trading have become quite severe for our competitors, including global competitors, and we are in a position to offset the deterioration in trading conditions by increasing the number of customers or volume through this MEX, ultimately increasing profits. We hope you understand this.

In that sense, I would like to explain quantitatively, for example, the contribution of DX to profits and sales and the effect of increased volume due to new R&D products, in terms of whether they were achieved through R&D or DX alone, although there are some ambiguous parts. I would like to explain how we have achieved this as a result of these themes.

As you pointed out earlier, similarly with regard to white-collar productivity, for example, we are talking about improving operational efficiency, but we would like to disclose to everyone how much time we have saved in terms of the quantitative data we have internally.

As for personnel, as I explained earlier, we originally started this DX and set the number of personnel to 1,000 or 2,500, based on the scale of our Group, thinking that this amount of personnel would be necessary or that it would be a considerable level, though not a perfect score, even though we have seen examples of other companies.

In contrast, as of FY March 2024, people with advanced qualifications, such as those with advanced general qualifications, have been certified as advanced, and more than 30 employees have been certified as such. Or some people have only taken the intermediate level course, but we have already secured more than 300 people at a certain level; for example, people with Python skills, or people who can use BI tools well, or people who can use data science to a certain degree. Even in this fiscal year we have secured as such.

However, while we believe that the number is a necessary and important indicator for tracking, we also believe that it is more important to have people with such skills actually use digital technology in such workplaces and achieve results. In this sense, using the DX Challenge Program, which I explained a little earlier, we would like to further utilize the DX Challenge System, etc., and firmly link it to the point where people who understand and have the ability to use the system can use it, so that we can explain our achievements in some form to everyone from the next time onward.

Participant [M]: Thank you very much.

Participant [Q]: The first point is about your first explanation, the so-called new business and research and development. How do you judge future possibilities in the middle of development? Do you have any KPI or some kind of yardstick in such areas? Or do you have some kind of time frame management? I would like to know what you are thinking about in this area.

Secondly, although it may not have been mentioned much in today's discussion, I think stable production is also important when it comes to manufacturing in general. At your company's briefings, you sometimes talk about problems. How are you tackling this kind of issue?

Shibata [A]: Thank you for your question.

It is very difficult to determine the potential of a new business or R&D project and to decide whether to stop or continue the project. Some R&D projects are long-lasting and long-term; therefore, within such a time frame, or in the case of new businesses, we start small and proceed with a stage gate, while considering the repetition of good results by producing a wide variety of products and learning from failures.

If Mr. Nagatomo and Mr. Isobe could provide some additional information on this area, please.

Nagatomo [A]: To add to the above, we set a stage gate for new businesses or R&D that is quite similar to a new business. In the initial stages, new businesses are often quite risky ideas, but we have a certain amount of time for verification to increase the probability of the idea in the initial hypothesis stage, and then we increase the probability of the idea through repeated verification, leaving those with high probability and selecting those with good potential.

Since we want as many ideas as possible, we will handle as many as possible, while keeping development costs low when the probability is still low and when the probability gradually increases. A concrete business comes into view; we will make it into a business while investing a reasonable amount of money to step on the gas pedal. The stage gate is designed in such a manner. In this way, we are trying to start small and launch businesses firmly, and we have a stage gate for such operations.

Isobe [A]: It is very difficult to identify R&D at an early stage, but we have gates for R&D as well. Also, at each gate, we make an assessment of the state of R&D and how it should be continued. Since the judgment changes with time, we listen to the opinions of many people in order to make such judgments. However, I think it is important not to put things to sleep just because we have given up or stopped at a certain point, but to continue with our work, even if only gradually.

Shibata [A]: I have already answered the first question, but I would like to supplement briefly on the last point.

There are some themes that we have been working on but will be put in storage. Some of them are kept within the Company as knowledge in the form of technical reports. Currently, in the DX of R&D, after digitizing such past accumulation and considering the possibility of simplifying what has existed in the past and the extent to which such

data can be used for new themes, we are building an in-house R&D information system. We are working on this from an awareness of these issues.

The second point, regarding stable production, is, of course, being addressed. For example, in the Achievable Project, we are trying to strengthen production management by determining what the correct situation is, what the normal situation is, and whether the normal we currently think we have is really correct, or whether we can improve it further while firmly defining and refining methods to maintain it.

In the past, for example, in IR, it is true that we have not said much about such things. In the past, IR was to tell you that there had been problems and financial impact and to introduce the fact that such problems were avoided this fiscal year, for example, and that the stable operation resulted in this result, which I remember saying when I was CFO.

Particularly, I think that in our introductions focusing on business results, we often introduced the fact that there were or weren't any troubles because it had a large financial impact.

On the other hand, I think you are right in pointing out that the key to the solid functioning of R&D and digitization that support such business activities, as I am introducing here, is the stable operation of the plant.

In a process-type smelter such as the Naoshima Smelter & Refinery, it is a prerequisite that operations continue 24 hours a day, 365 days a year, and the most important issue is how to reduce repair costs and human costs while transforming the smelter into a highly profitable structure.

In addition, for bases with discrete production processes, such as those with improved cutting processes, individual themes include improving efficiency in each process, reducing the number of procedures, eliminating waiting time, and reducing lead time by establishing an optimal production method for the entire production process, all of which are being promoted as themes in the area of manufacturing or DX.

As questioned earlier, as to whether or not we are making efforts to ensure stable operations, we are doing so. There may be some areas that I have not fully explained, but I understand that this is the foundation of the manufacturing industry, and it is our supreme mission. By "our," I mean Shibata and the rest of the organization.

Participant [M]: I understand very well. Thank you very much.

Participant [Q]: The first point is on page 45, second from the top, where it mentions that IT costs in FY March 2031 will be less than 1% of sales after making an investment of ¥10 billion. Going forward, how much money will be invested in this DX and IT strategy each fiscal year, and what are your thoughts on whether this is an investment or a cost; and if it is an investment, how much return do you expect from it, and what are your thoughts on such economic trends?

Second, in your explanation of the various initiatives, I think there was a point raised that perhaps an explanation of the numerical results would be appreciated. For example, taking the market intelligence of the processing companies on page 38 as an example, could you please explain what KPIs and results you are considering in the end?

Shibata [A]: Thank you for your question.

First of all, regarding whether DX is included in investor cost, those items that are under overall consideration in the initial stage of DX, or those items that are only under consideration and did not move on to the next system construction, are treated as cost.

However, including DX, we understand that basically, only the studies that will lead to the final results remain, so we understand, or rather sort out, that many of them are investments. The same is true for IT. Of course, there are some items that are being done as PoC and are treated as expenses.

Next, regarding the specific breakdown of the ¥10 billion and keeping IT costs at below 1% of net sales, may I ask, first of all, Mr. Itano?

Itano [A]: My name is Itano. Thank you for your question.

Basically, the ¥10 billion figure for IT until FY March 2031 indicates investment. But when we consider the investment on an expense basis, as it eventually goes to amortization and depreciation, we have decided to set the ceiling at 1% of net sales.

The reason why we came up with this 1% is because I, myself, changed jobs three years ago, and up until then, I had been looking at various companies, and even now, I am looking at the IT industry and so on. In this context, while the most commonly used IT cost index in the manufacturing industry is the ratio of IT investment to sales, in case of our Company in particular, we were in the very pre-DX stage, with a very small IT investment of 0.5%; not that we were doing nothing, but in a sense, we were ahead of the trend of in-house production that is currently underway in the world.

The problem, however, is the content. That is where DX began, and now, in the new major IT strategy, we have included modernization. Thus, if we increase the content of the system, or if we shift in-house production from on-premise to the cloud, the cost will increase by that amount.

So, when we look at this, 1% as a ceiling is roughly the standard for the manufacturing industry, and this is based on the process type and the product type and, of course, the product type is higher, so in reality, I think it should be larger.

Another point is that we have a complete in-house company system, and approximately 65% of the ¥10 billion is within the Company, directly supporting the business. The other 35% is common areas, including security, which naturally includes various common infrastructures.

Another complicated issue is that we are going to start running ERP in the accounting area in April, which is another modernization. As for the money for this, it is on the DX side, and the contents are complicated, but in the big picture, the IT cost-to-sales ratio is 1%, and we are now considering various measures to be implemented by 2030 as investments to maintain our so-called competitiveness at a minimum.

Shibata [A]: The IT department is, as just explained, and for DX, on page 35, we show how much we will invest within a rough three- or five-year timespan.

Specifically, we are, of course, internally managing how much we invest in each theme, and we are, of course, tracking the effects, or so-called ROI, by converting them into KPIs while also properly grasping the results.

However, just as in the discussion of new businesses, new products, and R&D mentioned earlier, there is a gray area as to whether the DX investment is contributing to all of the figures or not, or if we take DX alone out of the equation, there are some areas that have not yet been clear-cut. Nevertheless, we are constantly tracking to see how we are doing in relation to the desired effect.

As mentioned earlier, there will naturally be some infrastructure items for which the return on investment is not commensurate with the investment. For ERP, it is impossible to cover the investment by reducing the number of employees. This is similar to updating aging equipment. In that sense, as Mr. Itano mentioned earlier, the total P/L impact of about 1% is appropriate, and I hope you understand that we are also dealing with the maintenance of infrastructure that does not directly generate returns.

Specifically, in terms of how we track results, for example, in the case of the Metalworking Solutions Company, which you pointed out earlier, we track the number of new customers acquired, sales of new products, and so on, by creating KPIs.

For a more detailed explanation, Mr. Hayama, may I ask you to explain?

Hayama [A]: In terms of Metalworking Solutions, as well as Advanced Products, it has only been a year or two since we started strengthening our customer contact points, so rather than the actual increase in the number of customers, we have set a rough KPI on how well the CRM or SFA system is being used.

Since we are now starting to become more proficient in the use of the system, we would like to proceed in a way that will lead to business effects, such as specific sales, new customers, and market share.

The effect on investment is still largely prospective, but DX as a whole is now projecting about ¥60 billion by FY March 2031, starting in FY March 2021. However, regardless of whether we can use all ¥60 billion, we are considering an investment of ¥60 billion, and naturally, we expect a return on that investment to be higher than that.

However, as Mr. Shibata mentioned earlier, some themes do not directly lead to business results. For example, we are putting a lot of effort into data infrastructure, data collection, and visualization. However, it will be some time before we can see the effects of these efforts in concrete figures, as we have yet to see how they will contribute to the business.

Participant [Q]: Thank you very much.

I did not fully understand, but first of all, in terms of IT investment, as shown on page 45, your annual investment will be on a scale of ¥10 billion, which will eventually be reflected in depreciation and amortization expenses, and that as a percentage of sales it will be about 1% of the ceiling. The DX investment is also separate, and as shown on page 35, it will be about ¥18 billion over the three years from FY March 2023 to FY March 2025, which is also at a pace of just under ¥10 billion per year, so the overall investment will be just under ¥20 billion, is that correct?

Shibata [A]: No, for IT, the investment amount is for the period up to FY March 2031.

Participant [Q]: So, you mean ¥10 billion over the next seven years or so?

Shibata [A]: Yes. So, for the current Medium-term Management Strategy period, the total amount of DX and IT will be added together, and the average amount will be about ¥10 billion, for example.

Participant [M]: I understand. Thank you very much.

Participant [Q]: I am a little confused about the promotion structure, and I was wondering if you could help me clarify it again. You have stated that you will train a fairly aggressive number of professionals in the DX-related, intermediate, and advanced levels. On the other hand, you have created a diagram of the organizational promotion structure on page 36, and in the business-related DX area, the leftmost part allocates such areas to each Company, while the remaining part, which may be the corporate divisions, will look at these areas individually.

On the other hand, this organization of Mitsubishi Materials IT Solutions is also shown in IT at the end of the presentation. Basically, the corporate entity is responsible for managing costs, investments, and human resource allocation, as you have explained, as well as progress and KPI management, both visible and invisible, but is it also responsible for the results?

What is the responsibility of each Company itself, and how do they reap the benefits? For example, when forecasting the performance of each division in terms of personnel, investment, and costs, can we consider profit margins, for example, with a different allocation in mind in the future? There are positive and negative sides to this, but please clarify once again how this area should be allocated or how it should be promoted.

Shibata [A]: Thank you for your question.

First of all, regarding the development of digital human resources shown on page 42, this does not mean that the number of digital human resources will be added each year to the current workforce, but rather that those who are currently working in our factories and production facilities, including those in the head office area, will be certified as digital human resources through this type of education and qualification.

Therefore, it is unlikely that the cost will increase here. As a whole, the DX management department, which is on the Company-wide site, takes the initiative in setting the number of people required and training them and is currently carrying out this flow.

Currently, we are further reassessing that, for example, if we have secured the staffing, as I mentioned that we are likely to exceed our target of 30 or 300 in FY March 2024, are we giving those people a place where they can actually use their skills? Or how many intermediate-level people we would like to have when we think about it from each business unit? On that basis, after confirming at the head office whether the allocation of people who are currently at the intermediate level or have advanced qualifications is correct, I believe we will enter a stage where we will be discussing with each Company in the future, including necessary rotations and reinforcements.

Regarding page 36, DX management headquarters, one of the things we wanted to show here is that we are promoting DX as a unified company, and one of the things we also wanted to show is that it is virtual. Although there are some areas in which people are moved to the head office or to other companies, the basic idea is to organize each theme as a project by organizing it virtually, and to have the necessary personnel where they are needed, and to have the necessary personnel basically at the Company or at the base. This is about business DX.

Participant [M]: I understand. Thank you very much. Will you be looking at costs, results, etc., by department, or will you be looking at this area?

Hayama [A]: Regarding DX themes, all themes are now managed by the DX management department as a project, which includes the project's progress. Our basic principle is that the beneficiary pays the cost, so when digital measures or systems are completed, the cost is borne by each business. Of course, the project will also enjoy the benefits, so we are proceeding based on the idea that the beneficiaries should bear the costs.

Participant [Q]: In that sense, for example, we can call it target management through this, or we can say that each Company, which is the beneficiary of these plans, will monitor the results while proactively incorporating cost reductions, sales progress, and so on, and we can look at it from the external perspective based on these plans. Is that correct?

Shibata [A]: That is correct. Of course, there are some areas where the KPIs may not be set properly or where common indicators, for example, the Metalworking Solutions Company and the Advanced Products Company, which I mentioned earlier, have created similar systems focusing on customer contact points. Therefore, the head office may make comments or even give instructions on how we should look at such areas using the same indicators.

However, each Company, as the beneficiary, basically determines the indicators to be tracked, and tracks them in order to maximize its own profit and effectiveness.

Participant [M]: I understand very well. Thank you very much.

Participant [Q]: Thank you very much for today. I would like to ask you two questions as well.

The first question is on page 11. I understand the aims of the vision and key policies of the Medium-term Management Strategy FY2031 regarding the creation of new products, new technologies, and new businesses. However, looking back on the past, I am not so sure that the new products, technologies, and new businesses have led to a certain degree of profitability and increased corporate value, or that they have not been visible to the outside.

I would like to know the background behind why this was not apparent. Please give us your results and assessment of the challenges you have faced so far, and whether the bottlenecks were in manufacturing or whether they were different from manufacturing, for example, in marketing, etc.

The second point is on page 14, and the purpose of this question is that I would like to know the figures. It is in the black square. This time, in terms of numbers, you plan to process 3,000 tons of black mass in FY March 2028 and 6,000 tons in FY March 2031, which I think is an ambitious plan.

Since LIBs for recycling has not yet come out, the market is yet to be established, and I think there is a strong sense of uncertainty as to whether you can really do this much, but I would like to know how we should imagine the chunk of earnings from the external perspective when this happens, and if you have any hints as to the numbers.

Another thing is that I believe that other nonferrous metal companies are also trying to do this kind of black mass processing business, so I would like to know where your company's strengths lie. For instance, can you use the technology you currently have in your facilities, or do you have strengths in the supply chain, since you are involved in various processes, from the upper to the lower processes? I would like to know about the contribution of profits to the scale of earnings and your company's strengths.

Shibata [A]: Thank you for your question.

First of all, it is quite painful to hear your comment that we have not been able to create new products or businesses in the past; thus, although not the results we have achieved in the past, I had introduced MOFC-HR and MSP5 as examples from the past.

Although not often mentioned, MSP5, for example, received a technical award from the Japan Copper Products Association in 2021 and is highly regarded in the industry. In addition, we have recently received an increasing number of inquiries from various customers, including those for MOFC-HR, so we think it is necessary for us to communicate more about the fact that these products are becoming one of the major pillars of our new products.

While the Copper & Copper Alloy business is working toward 2026 to increase production at the Sakai, Sanbo, and Wakamatsu Plants, we would like to sell MSP5, MSP1, MSP8, and MOFC-HR, so we hope to be able to show you in the future how much these areas will contribute and whether they have actually contributed to the business.

Also, it is true that some people say that the results of our research have not become businesses. That said, for example, most of the products handled by Mitsubishi Materials Electronic Chemicals, a Group company of the Advanced Products Company, are products that originated in our research laboratory, and some of them are being consolidated there and done there. Therefore, I think it would be better to present the results of our technological capabilities separately in a book of results or some other form of presentation. We would like to work on this area.

However, if you ask whether there are no challenges, yes, there are. As you pointed out, we still have some issues in marketing and in our contacts with our customers, such as whether we have been able to provide what our customers demand at the right time and at the right place.

In this sense, to ensure product commercialization in the R&D area and to transfer it together with mass production technology, we have reorganized the Monozukuri & R&D Strategy Department into an organization that integrates R&D and Monozukuri, which is not combined in general companies.

As Nagatomo mentioned earlier, we need to continue to improve our efforts to quickly nurture small themes and decide which ones are superior and which ones are inferior while carrying out a wide variety of production and setting gates at certain points for R&D; deciding which ones to do and which ones not to do, and bringing about results as quickly as possible. This is the answer to your first point.

The second point is about black mass. As for the black mass, we have a target of ¥10 billion and a profit margin of 10% or more as a percentage of sales, which is close to the target for the general manufacturing industry. However, as you say, it is actually quite difficult to say when they will start up, how much volume they will be able to collect at that time, and how much above the break-even point they will be able to reach this level of scale.

Ultimately, that is what we are aiming for, but it is difficult to say exactly what the profit/loss will be at the midpoint, and, indeed, we cannot say for sure at this time yet.

As for our strengths and weaknesses, it is difficult to say that we are by far the strongest, because we are a latecomer in some areas. However, we utilize solvent extraction and other methods to recover lithium, cobalt, and nickel from black mass, and I believe we have certain strengths in this area.

Of course, most smelting companies have always been capable of solvent extraction, including Sumitomo Metal Mining, JX Nippon Mining & Metals, and Dowa. However, while making use of solvent extraction in smelting, we have also continued to use it in the fields of nuclear power and rare earths. Since we have secured not only the technology but also the engineers, I believe that one of our strengths lies in our ability to make full use of these technologies.

However, that alone is not enough, so we also need to ensure that the materials are used as raw materials, or that we provide feedback to the previous stage by producing the raw materials ourselves. Therefore, I think it will be absolutely necessary for us to cooperate with other companies to create this kind of area and to add strengths that we alone do not have.

Participant [Q]: For example, I am not sure about the second point yet, but is there a possibility that your company will use something like MEX for the LIBs collection?

Shibata [A]: Of course. In terms of future recycling, it will be very important to develop such a platform in terms of collection, so I think that MEX's knowledge and expertise will naturally come into play in this area as well.

On the other hand, the source of batteries is already controlled to some extent, so I think it is more important than this platform to connect with the source of batteries.

Participant [M]: I understand very well. Thank you very much.

[END]

Document Notes

1. *Speaker speech is classified based on whether it [Q] asks a question to the Company, [A] provides an answer from the Company, or [M] neither asks nor answers a question.*