

Overview of FY2018 Medium-term Management Plan, Innovation in *Monozukuri* and R&D

Hitachi Metals IR Day 2016

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Hitachi Metals, Ltd.

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Background and Purpose for Project Commencement
2. *Monozukuri* Innovation Project
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**Change to be a competitive business;
Challenge ourselves to meet new targets**

**Achieving our goal of becoming
the world's leading high-performance materials company**

Key Policies of the FY2018 Medium-term Management Plan

- 1. Accelerate the creation and execution of growth strategies.**
- 2. Achieve a robust business structure and highly efficient business management.**
- 3. Strive to establish a business base that is sustainable over the long-term.**

1-2. FY2018 Medium-term Management Plan: Main Numerical Goals for Management

	FY2015 business performance (US\$1 = ¥120)	FY2018 Plan (Target) (US\$1 = ¥115)	% Change vs. 2015	(¥billions)
Revenues	1,017.6	1,120.0	110%	
Adjusted operating income	[7.5%] 76.1	[10.7%] 120.0	+43.9	
IFRS operating income	100.0	112.0	+12.0	
EBIT	99.1	112.0	+12.9	
Income before income taxes	96.2	107.5	+11.3	
Net income* ¹	69.1	75.0	+5.9	
Total assets	1,033.3	1,250.0	+216.7	
Shareholders' equity	495.9	645.0	+149.1	
Interest-bearing debt	220.4	246.0	+25.6	
D/E ratio (times)	0.44	0.38	-0.06	
ROA	6.5%	6.4%	-0.1%	
ROE	14.4%	12.2%	-2.2%	
Percentage of revenues from overseas markets	56%	58%	+2%	
Overseas production as % of total	44%	45%	+1%	
No. of employees	29,157	29,400	243	

*¹ Net income attributable to owners of the parent company

Achieving our goal of becoming the world's leading high-performance materials company

FY2018 Medium-term Management Plan: Basic Strategy

Invest in growth strategy

Expand organic growth

Restructure businesses

- Invest proactively in global growth
- Achieve sustainable growth by enhancing growth of existing businesses
- Strengthen the business base through continuous business restructuring

Engage in *monozukuri* and R&D to achieve organic growth and become a true development-driven company

- Build *monozukuri* skills that are among the best in the world
- Implement an R&D-led business strategy

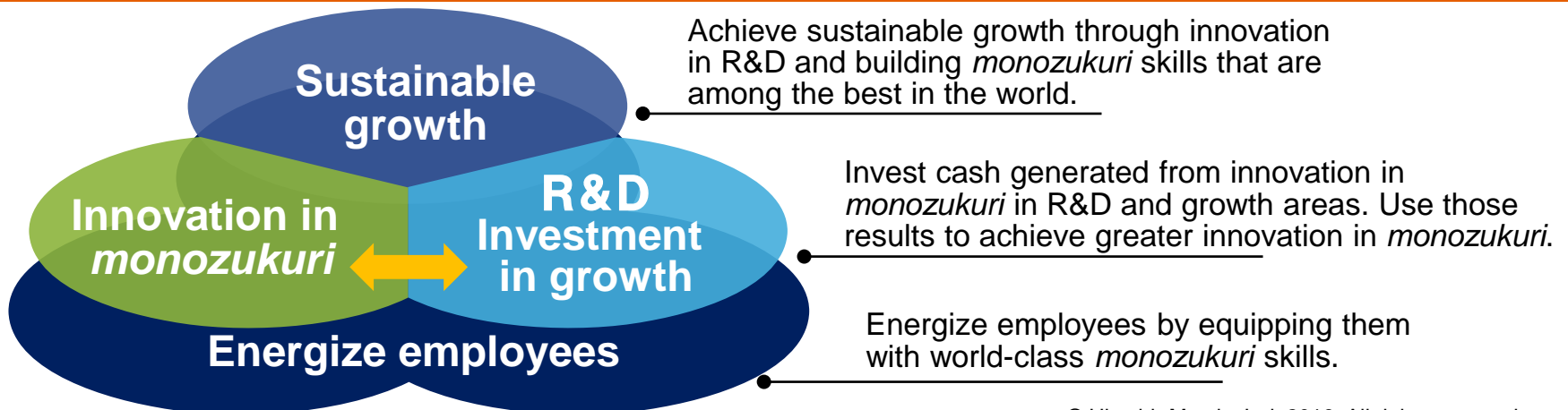
To achieve greater organic growth

Harmful effects of the company system

- Limits capital investment from a short-term perspective
- Entrenched human resources lead to technological limitations
- Lack of R&D system and themes based on a medium- to long-term perspective

Deterioration in capacity to achieve sustainable growth

Innovation from a medium- to long-term perspective and from a cross-organizational perspective



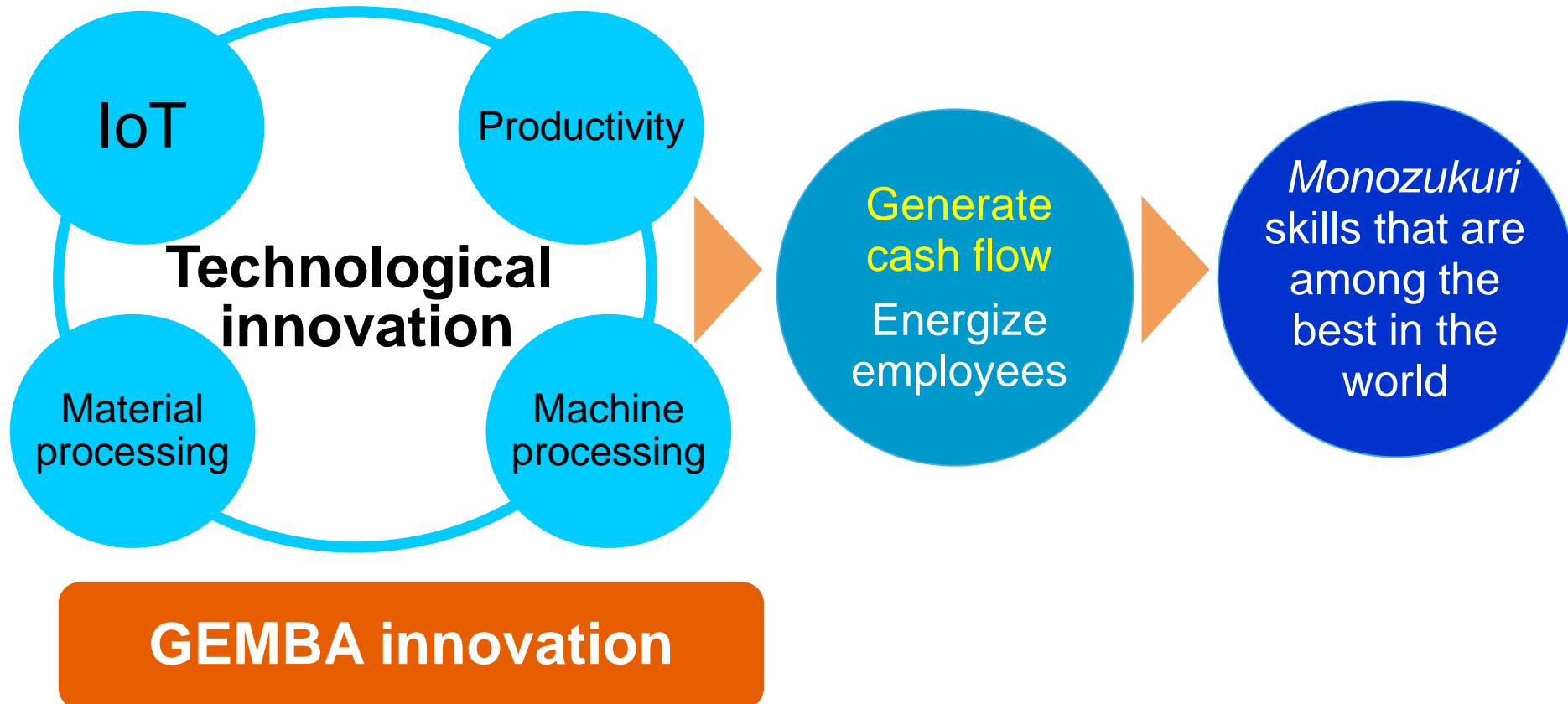
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Fusion of GEMBA (workplace) and technological innovations

Improved cash flow generation and energized employees

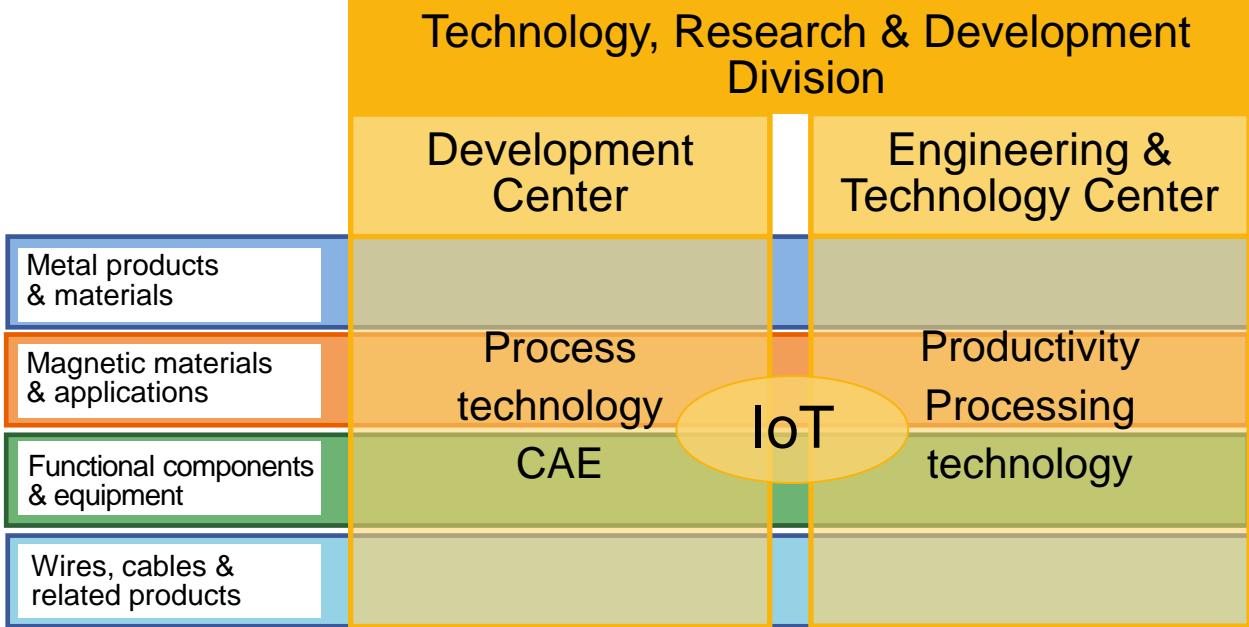
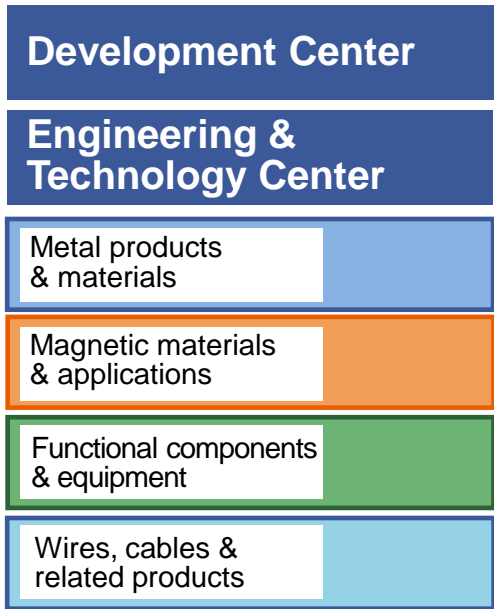


2-2. Project Structure

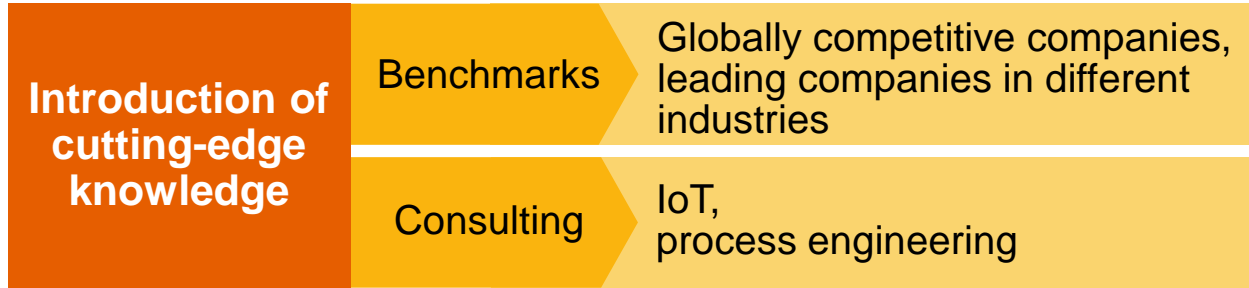
[Before project]



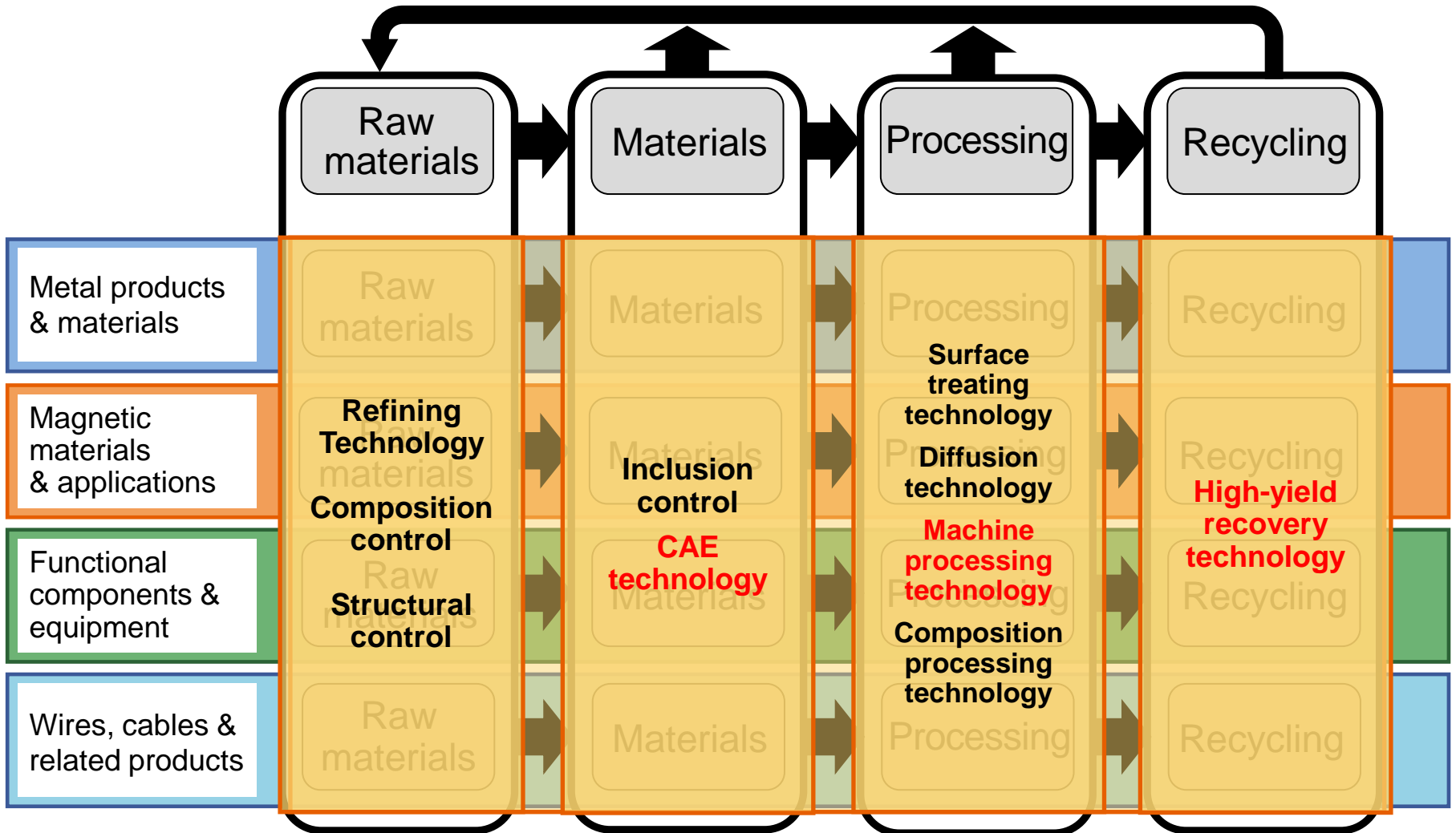
Corporate *Monozukuri* Innovation Project Lead: CTO & General Manager of the Technology, Research & Development Division



- Limitations of cross-organizational corporate functions
- Action taken by each Company
- Lack of external knowledge



Innovation in manufacturing technology via cross-organizational technology throughout the entire material flow



2-4. Cases of Technological Innovation

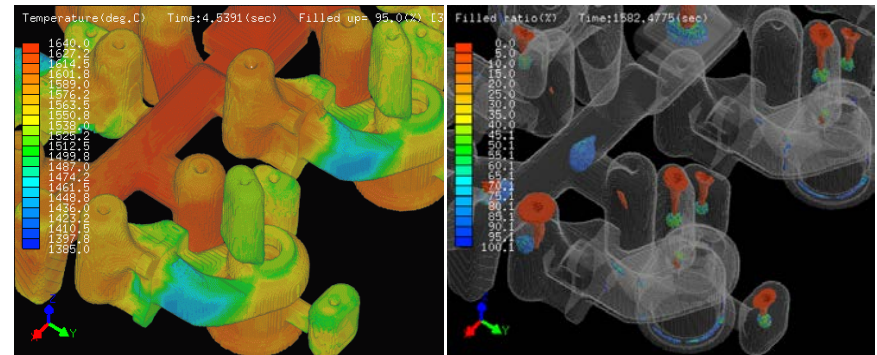
Use of CAE	<p>[Metal Products and Materials, Functional Components and Equipment]</p> <ul style="list-style-type: none">• Improve loss costs through analysis of casting conditions and launch new product quickly• Utilize the knowledge and human resources of the Hitachi Group
Machine processing technology	<p>[Functional Components and Equipment, Metal Products and Materials, etc.]</p> <ul style="list-style-type: none">• Introduce the latest techniques: Improved productivity Increase machining speed (shorten non-cutting time)• Achieve high-precision processing by analyzing vibration and considering how to counteract it.
High-yield recovery technology	<p>[Metal Products and Materials, Magnetic Materials and Applications, Functional Components and Equipment]</p> <ul style="list-style-type: none">• High-yield recovery: Recycle expensive materials Reduce raw materials cost and mitigated the risk of fluctuations in supply• Achieve synergies between Companies

[Machine processing]



High-precision processing

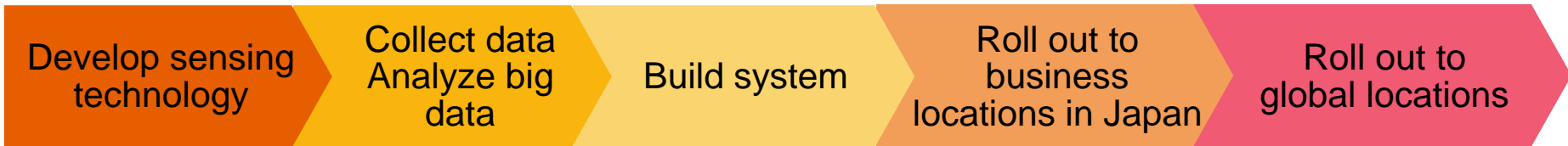
[CAE]



Temperature upon completion of filling

Internal defect risk

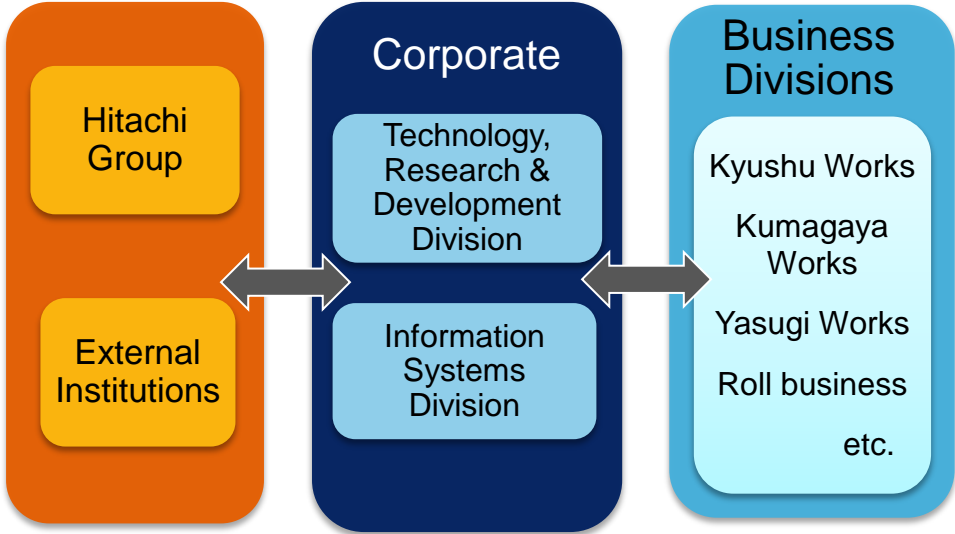
Build innovative *monozukuri* through IoT



Improve the customer experience

Traceability	<ul style="list-style-type: none"> • Improve risk management • Strengthen the customer base
Improve quality (analyze data)	<ul style="list-style-type: none"> • Reduce loss cost • Eliminate mega recalls • Improve risk management
Diagnose symptoms	<ul style="list-style-type: none"> • Ascertain anomalous conditions quickly • Roll into the business model

IoT Promotion Structure



Roll out company-wide activities

- Be thorough in the basics of *monozukuri*
(Sort out; set in order; fixed location, quantity, and item)
- Improve efficiency and safety
- Launch new products and new businesses quickly

- Improve cash flow by reducing work-in-process
- Energize employees by creating a workplace that is one of the best in the world

Strengthen *monozukuri* more by reinvesting cash.

Achieve *monozukuri* skills that are among the best in the world

Business
areas to
concentrate
on

Areas experiencing volume growth
Areas with high material costs

Roll-out to
locations

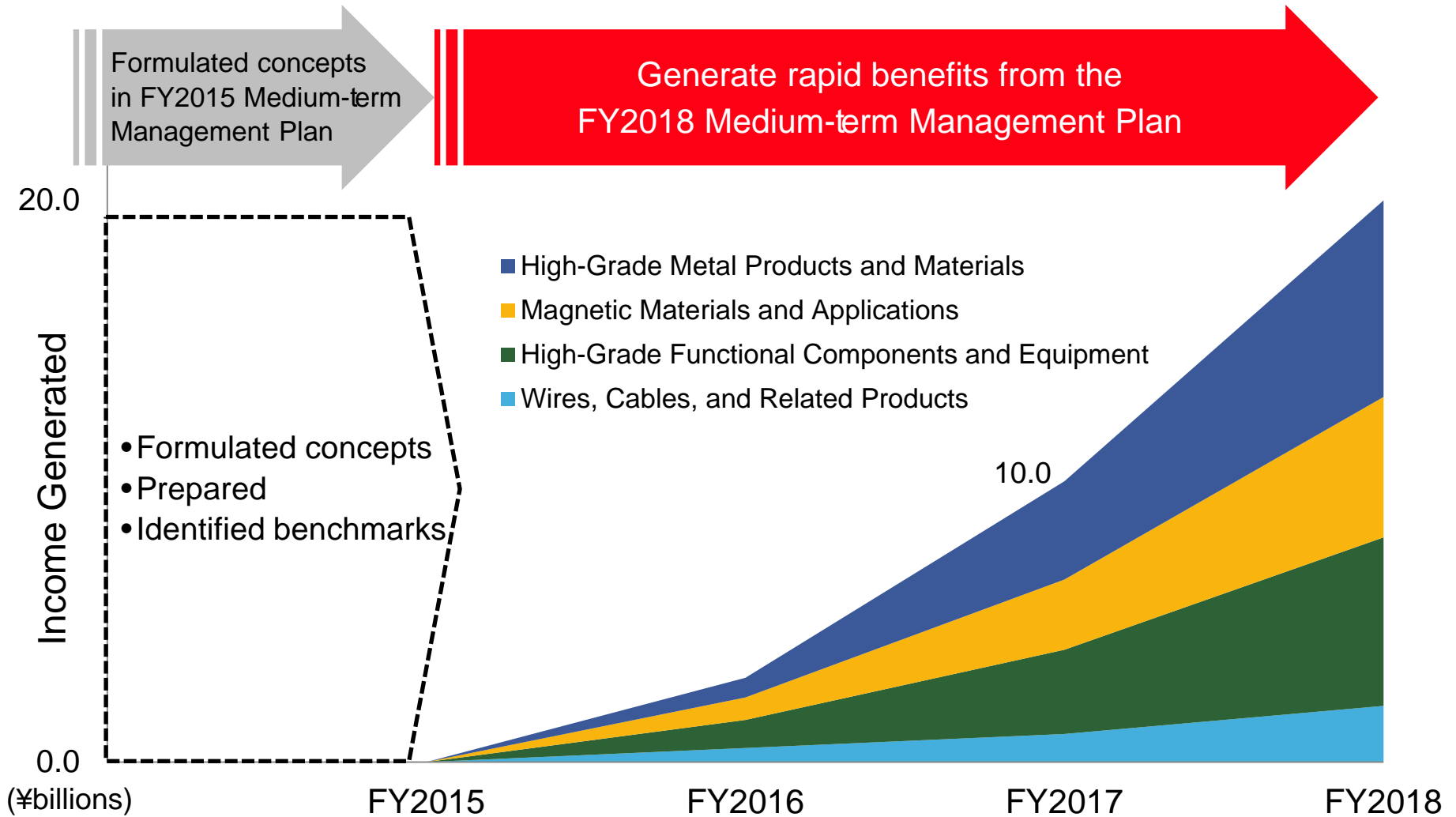
Start with the (five) main plants



Innovation

Expand to global locations

2-8. Benefits from Targeted Reductions and Schedule



Generate ¥20 billion in additional profits (¥10 billion in FY2017)

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Basic Policy

Strive to be a true development-driven company

Promote new business creation tasks / Establish a Corporate Research Lab

Medium- to Long-term Research Themes Focused on Threats and Opportunities (Examples)

Company	Current Products	Development Themes Based on Envisioned Threats
Metal Products and Materials	Molds and materials	Additive manufacturing (3-D printing)
	Aircraft and energy (ultra heat-resistant steel)	Composite materials
Magnetic Materials and Applications	Rare-earth magnets	New magnets
Functional Materials and Equipment	Castings (NM)	Composite materials and multiple materials
Wires, Cables, and Related Products	Copper wire	Aluminum and composite conductors

R&D Expenses

¥57 billion (Cumulative for FY2015 Medium-Term Plan)

⇒ **¥70 billion** (Cumulative for FY2018 Medium-Term Plan)

Promote new business creation tasks

- Medium- to long-term research focused on threats and opportunities
- Research expenses for 15 themes: ¥12 billion (FY2016-FY2018)
2025: Total anticipated revenues: ¥180 billion
Total anticipated income: ¥20-25 billion

Metal materials

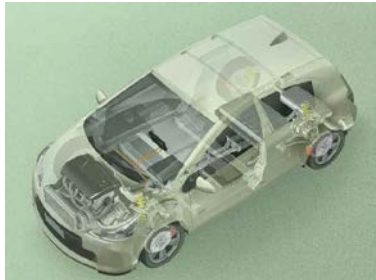
Composite materials

Plastic materials

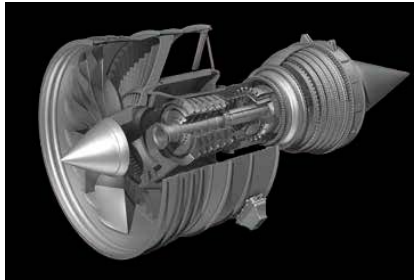
High-performance materials

To markets in growth areas

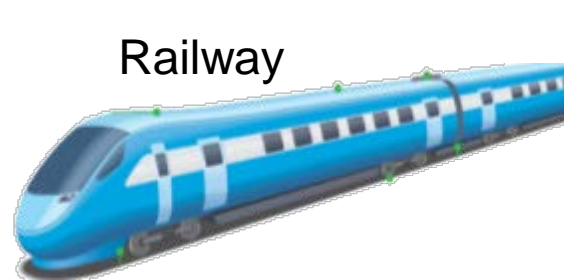
Automotive



Aircraft



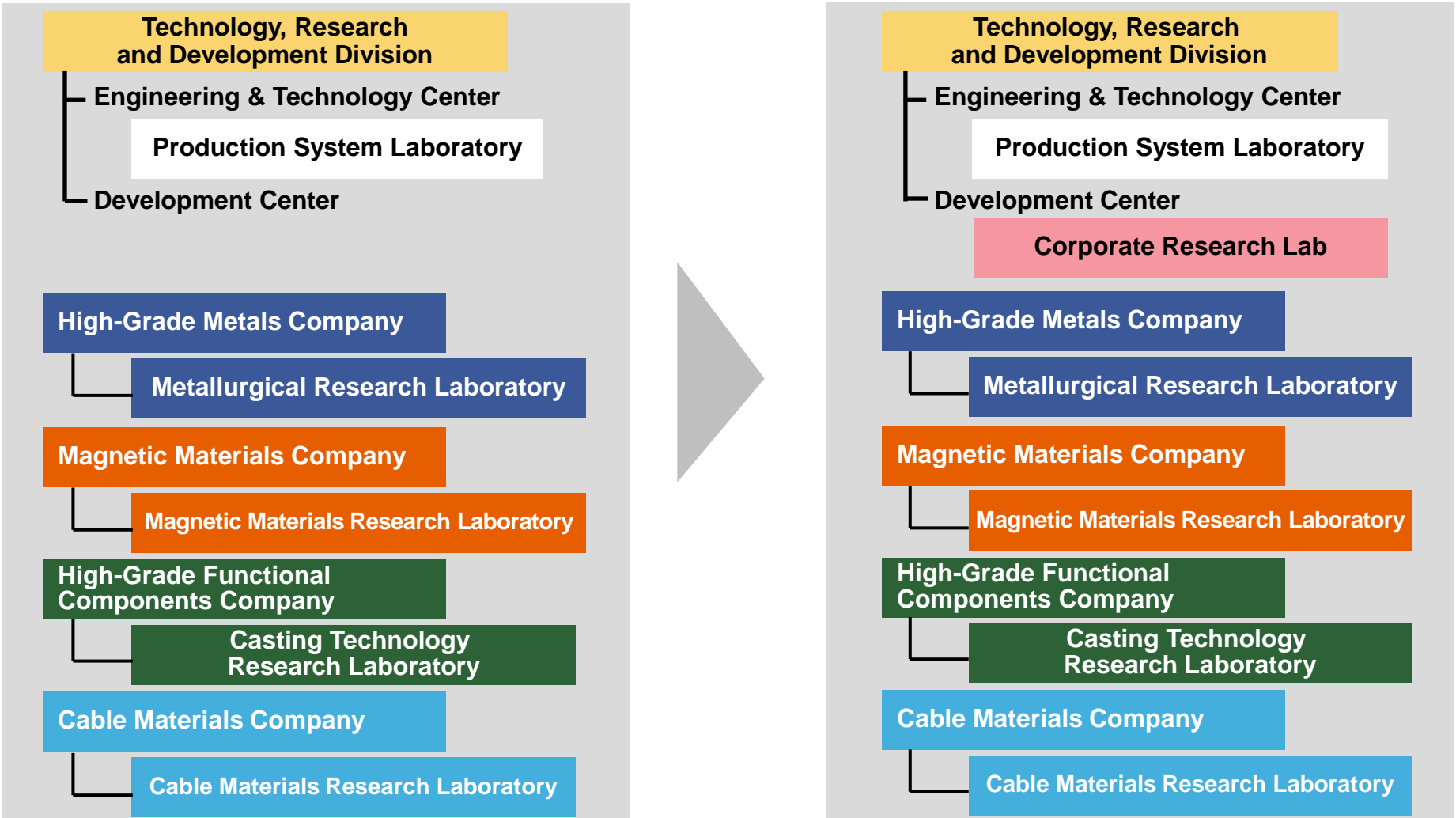
Railway



Energy



Establish a Corporate Research Lab (April 2017)



The Corporate Research Lab will work together with each of the internal laboratories and external institutions on individual themes

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Monozukuri innovation: Fusion of GEMBA (workplace) and technological innovations



Generate cash and energize employees

Achieve *monozukuri* skills that are among the best in the world

Achieve innovation in R&D from a medium- to long-term perspective and cross-organizational perspective



Become a true development-driven company

Achieve sustainable growth through innovation in *monozukuri* and R&D

This document contains forward-looking statements—such as results forecasts and management plans—that are not historical facts. All such forward-looking statements are based upon all available information and upon assumptions and projections that were deemed reasonable at the time the Company prepared this document. Changes to the underlying assumptions or circumstances could cause the actual results to differ substantially. The factors causing such differences include, but are not limited to, the following:

- Changes in economic conditions and regulations in the main markets where the Company operates, particularly Japan, the United States, Asia and Europe
- Sudden changes in technological trends
- Changes in competitive advantage and the capabilities of the Company and its subsidiaries and affiliates to develop and commercialize new products and businesses
- Fluctuations in the status of product markets, exchange rates and international commodity markets
- Changes in financing environment
- The capability of the Company and its subsidiaries and affiliates to cope with fluctuations in product supply and demand, the status of product markets, exchange rates and international commodity markets
- Protection of the Company's intellectual property, and securing of licenses to use the intellectual property of other parties
- Changes in the status of alliances with other parties for product development, etc.
- Fluctuations in Japanese stock markets



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