

Hitachi Investor Day 2024

Digital Strategy

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 3. Innovation of Lumada with Generative AI
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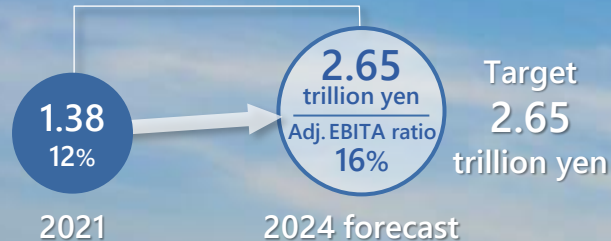
1-1. Progress of the Mid-term Management Plan 2024



Digital strategy under the Mid-term Management Plan 2024 :
Improve profitability of the Hitachi Group through the growth and high profitability of Lumada business

Lumada business of Hitachi Group

Revenues CAGR +24%

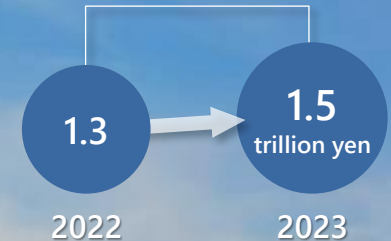


DSS sector

Revenues CAGR +8%



Backlog +15%



Focus on markets where Hitachi can maximize its IT, OT and Products advantages



Digital markets
that Hitachi focuses on

DX
market size in 2027
(2024-2027 CAGR)



490 billion dollars
(CAGR +20%)



340 billion dollars
(CAGR +13%)



260 billion dollars
(CAGR +17%)



210 billion dollars
(CAGR +13%)



180 billion dollars
(CAGR +15%)



1,080 billion dollars
(CAGR +15%)



200 billion dollars
(CAGR +17%)

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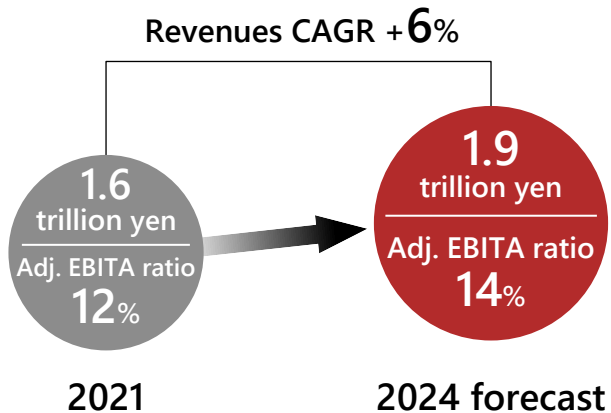
2-1. Expansion of Front Business and IT Services Business

Become Japan's No. 1 vendor with high profitability capable of completing large-scale, high-complexity projects by further enhancing our ability to execute SI and DX projects

Domestic IT market size*2 (2027)	CAGR (2024-2027)
14 trillion yen	+5%

Performance trends of front business and IT services business*1

Growth in both revenues and profitability due to the expansion of large-scale mission-critical SI and DX projects, which are Hitachi's strengths



Strengthen the execution of SI and DX projects

Strengthen project management



Optimize resource utilization of approximately 60,000 persons/month

through meticulous project management and strict phase-gate control

Strengthen talent pool and improve productivity



Utilize GlobalLogic's engineers to boost resources for domestic projects

Utilize GlobalLogic's engineers
FY2024 target :
2,000 engineers/month
(YoY over 2.5 times)



Thorough use of generative AI to improve SI productivity

Domestic generative AI projects
FY2023 Orders : 65 Inquiries : 700

*1 Financial Institutions BU, Social Infrastructure Systems BU, Hitachi Systems and Hitachi Solutions

*2 Excluding hardware (Source: Hitachi)

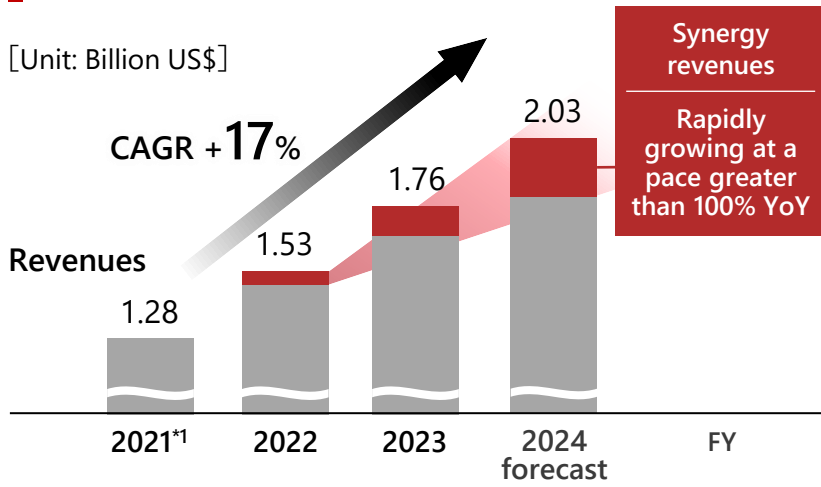
2-2. Expansion of Global Business : GlobalLogic

GlobalLogic maintains its high growth with the expansion of synergy within the Hitachi Group

Digital engineering market size*2 (2027)	CAGR (2024-2027)
250B\$	+17%

GlobalLogic performance trends

[Unit: Billion US\$]



Revenues volume and growth rate of global competitors

	Revenues (FY2023)	YoY
Company A	5B US\$	(3)%
Company B	2B US\$	+18%

*1 GlobalLogic's performance in FY2021 includes figures prior to the completion of the acquisition
*2 Size in Hitachi's focus markets (Source: Hitachi) BU: Business Unit

Efforts to create synergy

Participation in projects in the OT domain

Number of synergy projects currently underway



- Examples:
- Enterprise asset management system **Hitachi Energy**
 - Monitoring solutions of railway infrastructure **Hitachi Rail**
 - Semiconductor manufacturing data platform **Hitachi High-Tech**
 - Biopharmaceutical cultivation simulator **Water & Environment BU**

End-to-end delivery of DX services

Example: Modernization of major U.S. financial institutions
Support the modernization from on-premises to public cloud environments on an E2E basis through advisory, framework development and other activities

GlobalLogic × **Hitachi Vantara** × **Hitachi Digital Services**

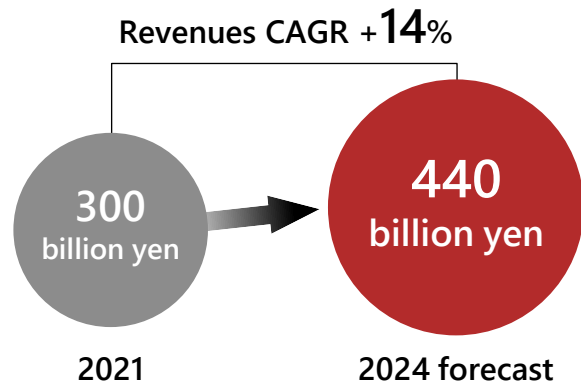
2-3. Expansion of Global Business : Cloud Managed Services

Expansion of the global cloud managed services business

Cloud managed services market size*1 (2027)
190B\$

CAGR (2024-2027)
+14%

Performance trends of cloud managed services
which delivers high-reliability and high-efficiency cloud environments



Expand HARC business

which continuously supports and improves cloud operation

Revenues growth in FY2024
(forecast) YoY +36%

- Providing services to **over 40 companies**, primarily in North America, since the commencement in 2022
- Plan to expand global service delivery centers to **5 locations***2

Customer cases

- **Major HVAC and disaster prevention equipment company (North America)**

Enhance reliability of mission-critical maintenance system operations

Proactively address 90% of system errors, and automate 30% of routine operational tasks

- **Major pharmaceutical company (Europe)**

Optimize operations and security measures for systems fully migrated to the cloud

Improved cloud operations productivity by 80% and reduced cloud costs by 30%

- **ORIX Bank (Japan)**

Select Hitachi as partner to reform cloud operations

Develop an operations evaluation and improvement roadmap, formulation of scheme, rules and process for operational structure

Examples of high-growth cloud managed services

- HARC
- Cloud-type ID management (ID as a Service)
- Standardization of municipal systems, delivery of government cloud

HARC: Hitachi Application Reliability Centers

*1 Source: Hitachi *2 Under operation in Dallas, Hyderabad, and Tokyo; with preparations underway for opening in Lisbon and Ho Chi Minh

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2-4. Digitalization in the OT Domain : Energy (1)

Optimize operation and maintenance of infrastructure facilities that support electricity demand

DX market size in Energy* (2027)
210B\$

CAGR (2024-2027)
+13%



Lumada Asset Management

Hitachi Energy, GlobalLogic, Hitachi Digital Services

Electric power equipment

×

Condition monitoring, data analysis

Support asset-intensive industries through integrated management of vast facility assets and health diagnostics of critical facilities

Energy provider (Ohio, US)

Evaluate the health of substation equipment based on field data and facility information
Reduce the risk of power outages and improve the efficiency of maintenance operations

Energy provider (Illinois, US)

Analyze data from thousands of aging substation facilities and detect equipment that should be prioritized for maintenance, ensuring both investment optimization and stable operation

2-5. Digitalization in the OT Domain : Energy (2)

Accelerate the introduction of renewable energy in Japan with energy solutions that have a global track record and competitive edge

DX market size in Energy*3 (2027)
210B\$

CAGR (2024-2027)
+13%



Next-generation nationwide load dispatching system

Hitachi Energy, Social Infrastructure Systems BU, GlobalLogic*1

Wide-area operation of power networks



Supply and demand planning and control

Standardize a nationwide load dispatching system in Japan
Contribute to the improved resilience of power networks nationwide*2, reduction of social costs and encouragement of the use of renewable energy



Grid energy storage system for Matsuyama storage plant

Hitachi Energy, Hitachi Power Solutions, Social Infrastructure Systems BU

Storage batteries



Distributed power source monitoring and control

Build power storage plant to connect to power grids
Contribute to mainstreaming of renewable energy power source while stabilizing grids, through efficient control of storage batteries adapted to power supply and demand

2-6. Digitalization in the OT Domain : Mobility (1)

Sophisticate operation and maintenance,
which account for 40%*1 of railway business expenditures
Achieve sustainable railway infrastructure

DX market size in Mobility*2 (2027)
180B\$

CAGR (2024-2027)
+15%

UK Intercity Fleet: Smart Maintenance

Hitachi Rail, Hitachi Digital Services

Train cars



Condition monitoring, data analysis

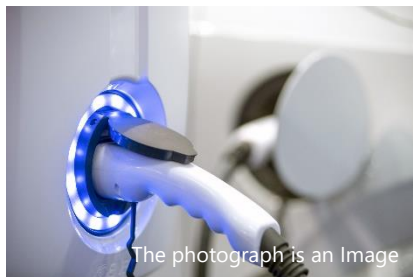
Condition-based maintenance, utilizing real-time data from over 325 train carriages,
has yielded more than 1 billion readings
Successfully reduced overhaul requirements by 50% and increased train availability
In the process of deploying this digital solution in approx. 2,000 Hitachi's fleet
across the entire UK

2-7. Digitalization in the OT Domain : Mobility (2)

Expand public EVs to promote local decarbonization

DX market size in Mobility* (2027)
180B\$

CAGR (2024-2027)
+15%



ZeroCarbon Solutions

Hitachi Rail, Hitachi ZeroCarbon, GlobalLogic, Hitachi Digital Services

EV battery



CX design, data analysis

Real-time monitoring of charging status to realize operational efficiency of EV batteries and to optimize power demand/supply
(leverage the Optimise Prime PJ for 8,000 commercial EV trial)



FirstGroup (UK)

Deliver services for 1,500 EV buses
Anticipate to save 84,675 t CO₂ equivalent per year



Posten Bring (Norway)

Deliver services for 160 EV cars and trucks
Aim to convert all vans and 80% of trucks to be fossil-free by 2030

2-8. Digitalization in the OT Domain : Industry (1)

Enhance profitability in the after-sales market
by adding value to services through CX design

DX market size in Industry* (2027)
1,080B\$

CAGR (2024-2027)
+15%

Transform after-sales business of industrial equipment

Hitachi Global Air Power, GlobalLogic, Hitachi Digital Services

Air compressor



CX design, equipment monitoring, data analysis

Real-time monitoring of compressor operating conditions
and manage the product life cycles
Transform the after-sales business process by proposing parts replacement
and new products according to the user's usage status

The photograph is an Image

Accelerate the use of recycled materials and contribute to a circular economy

DX market size in Industry* (2027)
1,080B\$

CAGR (2024-2027)
+15%

Develop the marketplace for recycled materials

Hitachi High-Tech, Social Infrastructure Systems BU, GlobalLogic

Measuring and analysis equipment



AI, Materials Informatics

Epoch-making mechanism for matching recycled material buyers and sellers that considers quality risks such as the incorporation of impurities and the fluctuation of quantity

Conduct field verification with SEKISUI CHEMICAL confirmed the effectiveness of the system



The photograph is an Image

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Seize new opportunities for growth utilizing generative AI



Improve the productivity of customer operations

- System development and renovation by customers
- Office workers' and front-line workers' operations

Hitachi's initiatives

- Accumulation of AI technology by GlobalLogic
- Use of generative AI in the mission-critical domain
- Application of generative AI in the OT domain



Provide reliable data management and platform

- as-a-Service, generative AI platform and hybrid cloud storage
- Green, resilient data center

Hitachi's initiatives

- Growth of data management business leveraging generative AI as an opportunity
- Seize business opportunities in data centers



Accelerate the delivery of value to customers by leveraging GlobalLogic's advanced technology across the Hitachi Group

GlobalLogic strengths

- Lead industry in AI-related offerings for more than 10 years

- Delivery achievements in AI projects → **500+** projects
- Number of engineers specializing in AI → **9,700+** engineers

- Range of intelligence engineering offerings to meet customers at their level of AI maturity

 AI platform & Data engineering	 LLM training & Adoption	 Content engineering & ML Ops
 SDLC transformation	 Hyper personalization	 Knowledge management

- Technology development to accelerate service delivery to customers

Platform of Platforms

GlobalLogic has built the One Hitachi architecture that integrates GlobalLogic, Hitachi, and partner solutions with hyper-scaler generative AI to enable enterprise customers to deploy generative AI at scale



CEO of Digital Engineering Business Unit
President & CEO of GlobalLogic
Nitesh Banga



3-3. Use of Generative AI in the Mission-critical Domain

Expand co-creation with customers by utilizing generative AI in large-scale system development and business transformation

Increase productivity in system development

Examples of projects



New system development and system maintenance

Applications in developmental tasks from the requirements definition to testing

Migration

Applications for the efficiency in the visualization of current specifications and the cross-checks between current and new systems

Productivity improvement by **30% or more**^{*1}

Improve efficiency of customers' operations

Examples of projects



Automation of response to inquiry

Achieve high response accuracy through follow-up queries from generative AI

Sophistication of sales and marketing

Streamline and increase the sophistication of the selection and preparation of themes for customer proposal

Operations streamlined by **50% or more**^{*2}

Examples of co-creation with customers in financial sector^{*3}



Tokio Marine & Nichido Fire Insurance Co., Ltd.

*1 An indicator of financial business' target for development operations in FY2024. The new system development project includes programming and unit test processes while the migration project includes the visualization of current specifications and cross-checks between current and new systems

*2 Result of initial joint verification with customers based on specific use cases

*3 Customers which co-create with Hitachi as one of the partners in generative AI projects (listed in an alphabetical order)

3-4. Application of Generative AI in the OT Domain

Support front-line worker operations with generative AI by leveraging domain knowledge and on-site expertise in the OT domain

Social issues

Difficulty in transferring technology and knowledge

Number of front-line workers decreases by **200 thousand people** every year*¹

Economic loss resulting from unplanned line stoppage

Productivity decreases by **5% - 20%***²



Energy

Simulate the large-scale construction process

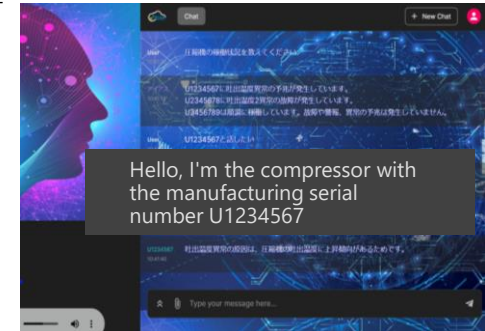
In the plant replicated in a metaverse space, generative AI extracts things and operational information. This facilitates communication about work processes between the multiple people involved and saves workers from backtracking



Industry

Talkative products for industrial use

The machine talks with workers about the causes of failures and malfunctions and the actions to address them. It helps shorten the time to restoration by correctly extracting operational knowledge



*1 Calculated by Hitachi based on publicly available information for Japan

*2 Calculated by Hitachi based on publicly available information for the manufacturing industry

3-5. Growth of Data Management Business Leveraging Generative AI Opportunities

Accelerate growth with generative AI platform that maximizes value by properly managing company-specific data and open data

Hybrid cloud market size* (2027)	CAGR (2024-2027)
120B\$	+12%



Service



Data management

LLM service ...

Hitachi iQ

Innovative AI solution portfolio jointly developed by NVIDIA and Hitachi Vantara



Hybrid cloud storage

On premise

Hitachi Enterprise Storage

Company-specific data

Data volume CAGR (2024-2027) +18% *

Cloud

Hitachi Software-Defined Storage

Open data

Data volume CAGR (2024-2027) +38% *



Data center

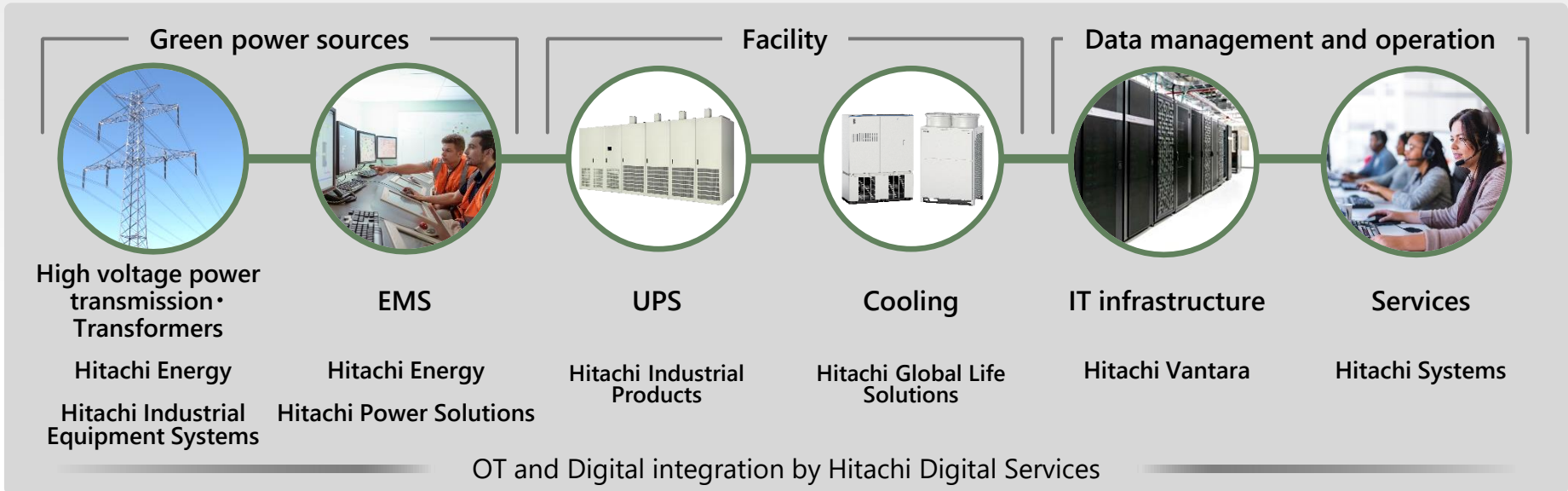
* Source: Hitachi LLM: Large Language Models

3-6. Seize Business Opportunities in Data Centers

Capture the growing data center demand through total integration of OT and Digital

Construction investments*1 2022 32 billion dollars → 2030 49 billion dollars

Power consumption*2 2022 460 TWh → 2026 1,000 TWh



Build a generative AI ecosystem leveraging the strengths of global partners



Advanced AI software
GPU technologies

IT × OT × Products
Domain knowledge

Generative AI
Cloud technologies and services

Examples of initiatives with each partner

Collaborative development of AI solutions

- “Hitachi iQ” with advanced GPU and next-generation storage
- Apply AI solutions to the OT domain such as energy and railways
- Advanced hybrid cloud solutions
- Establish Center of Excellence (CoE)

Talent development

- Develop highly-skilled engineers with deep knowledge of generative AI and cloud computing
- Significant improvement in internal productivity

Invest 300 billion yen in generative AI, evolving Lumada to its next phase



Infrastructure development

supporting the delivery of generative AI services

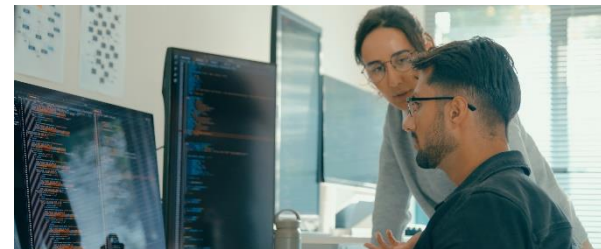
- **Develop a common platform for generative AI**
 - Enhance Hitachi iQ and hybrid cloud services
 - Incorporate Hitachi's unique domain knowledge into large language models (LLMs)
- **Develop generative AI data center**



Services and engineering enhancement

facilitating customers' intellectual operations and improving on-site productivity

- **Generative AI lifecycle service**
 - Optimize the process from the data center to the operation of generative AI by strengthening HARC and provide it on as-a-Service
- **Expand insourcing to GlobalLogic**



Expansion of generative AI talents

leading the evolution of Lumada

- **Upskilling engineers through training programs**
 - Train 50 thousand generative AI specialists and make all Hitachi employees ready for generative AI
- **Acquire talents through M&A**
- **Investment and partnership with startups**

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Achieve the Mid-term Management Plan 2024
by maintaining high growth in SI/DX business and GlobalLogic
Innovate Lumada with generative AI to enter into a new phase of growth

Lumada business of Hitachi Group	2022	2023	2024
Revenues ratio	26%	27%	29%
Adj. EBITA ratio	14%	15%	16%

DSS sector			
Revenues ratio	2.4 trillion yen	2.6 trillion yen	2.7 trillion yen
Adj. EBITA ratio	12.3%	12.8%	13.5%
Core FCF	3-year cumulative 0.6 trillion yen		



Target level

Achieve globally top-level profitability by combining IT x OT x Products

Lumada business of Hitachi Group

Revenues ratio : 40%
Adj. EBITA ratio : 20%

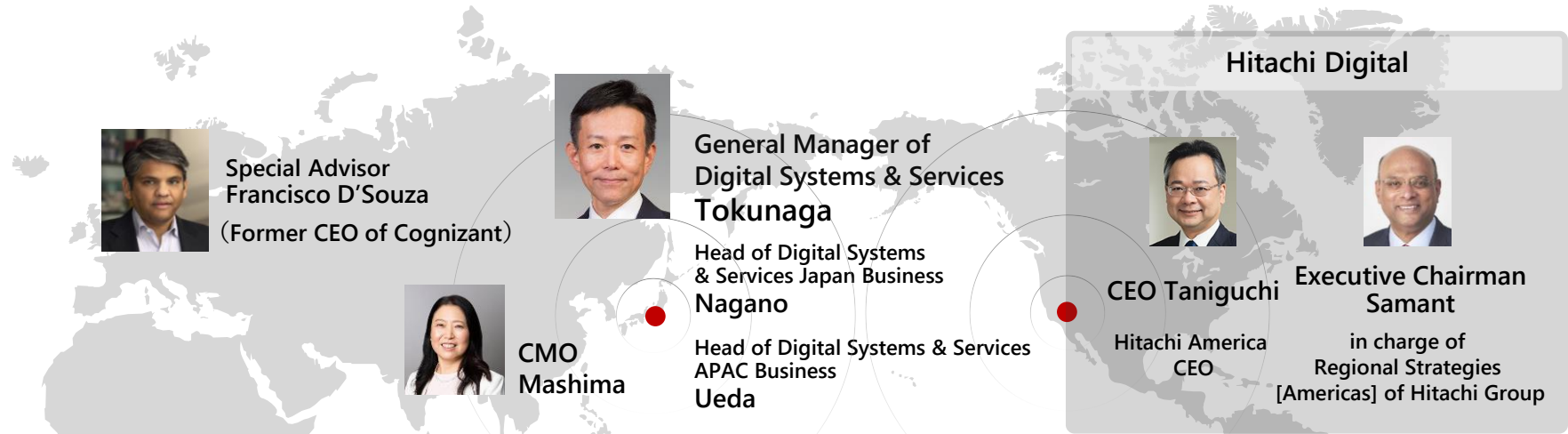
DSS sector

Adj. EBITA ratio : 15~17%



Hitachi Social Innovation is
POWERING GOOD





Business units and major group companies

Financial Institutions BU



CEO Ueda

Social Infrastructure Systems BU



CEO Nagano

Hitachi Systems



President Shibahara

Hitachi Solutions



President Yamamoto

Cloud Services Platform BU



CEO Hosoya

Hitachi Vantara



CEO Rohra

Hitachi Digital Services



CEO Lvin

Digital Engineering BU/ GlobalLogic



CEO Banga

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- exchange rate fluctuations of the yen against other currencies in which Hitachi makes significant sales or in which Hitachi’s assets and liabilities are denominated;
- uncertainty as to Hitachi’s ability to access, or access on favorable terms, liquidity or long-term financing;
- uncertainty as to general market price levels for equity securities, declines in which may require Hitachi to write down equity securities that it holds;
- fluctuations in the price of raw materials including, without limitation, petroleum and other materials, such as copper, steel, aluminum, synthetic resins, rare metals and rare-earth minerals, or shortages of materials, parts and components;
- credit conditions of Hitachi’s customers and suppliers;
- general socioeconomic and political conditions and the regulatory and trade environment of countries where Hitachi conducts business, particularly Japan, Asia, the United States and Europe, including, without limitation, direct or indirect restrictions by other nations on imports and differences in commercial and business customs including, without limitation, contract terms and conditions and labor relations;
- uncertainty as to Hitachi’s ability to respond to tightening of regulations to prevent climate change
- uncertainty as to Hitachi’s ability to maintain the integrity of its information systems, as well as Hitachi’s ability to protect its confidential information or that of its customers;
- uncertainty as to Hitachi’s ability to attract and retain skilled personnel;
- uncertainty as to Hitachi’s ability to continue to develop and market products that incorporate new technologies on a timely and cost-effective basis and to achieve market acceptance for such products;
- exacerbation of social and economic impacts of the spread of COVID-19;
- the possibility of disruption of Hitachi’s operations by natural disasters such as earthquakes and tsunamis, the spread of infectious diseases, and geopolitical and social instability such as terrorism and conflict;
- estimates, fluctuations in cost and cancellation of long-term projects for which Hitachi uses the percentage-of-completion method to recognize revenue from sales;
- increased commoditization of and intensifying price competition for products;
- fluctuations in demand of products, etc. and industry capacity;
- uncertainty as to Hitachi’s ability to implement measures to reduce the potential negative impact of fluctuations in demand of products, etc., exchange rates and/or price of raw materials or shortages of materials, parts and components;
- uncertainty as to the success of cost structure overhaul;
- uncertainty as to Hitachi’s ability to achieve the anticipated benefits of its strategy to strengthen its Social Innovation Business;
- uncertainty as to the success of acquisitions of other companies, joint ventures and strategic alliances and the possibility of incurring related expenses;
- uncertainty as to the success of restructuring efforts to improve management efficiency by divesting or otherwise exiting underperforming businesses and to strengthen competitiveness;
- the potential for significant losses on Hitachi’s investments in equity-method associates and joint ventures;
- uncertainty as to the outcome of litigation, regulatory investigations and other legal proceedings of which the Company, its subsidiaries or its equity-method associates and joint ventures have become or may become parties;
- the possibility of incurring expenses resulting from any defects in products or services of Hitachi;
- uncertainty as to Hitachi’s access to, or ability to protect, certain intellectual property; and
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* This document has been translated from the Japanese original for reference purposes only. In the event of any discrepancy between this translated document and the Japanese original, the original shall prevail.