

## Strategy for Value Creation

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# Hitachi's Value Creation Model

Hitachi creates economic, social, and environmental value and contributes to the realization of a sustainable society by tackling a variety of social issues through its Social Innovation Business.

## Global Trends

- Acceleration of digitalization
- Era of uncertainty
- Paradigm shift

Object ▶ Thing

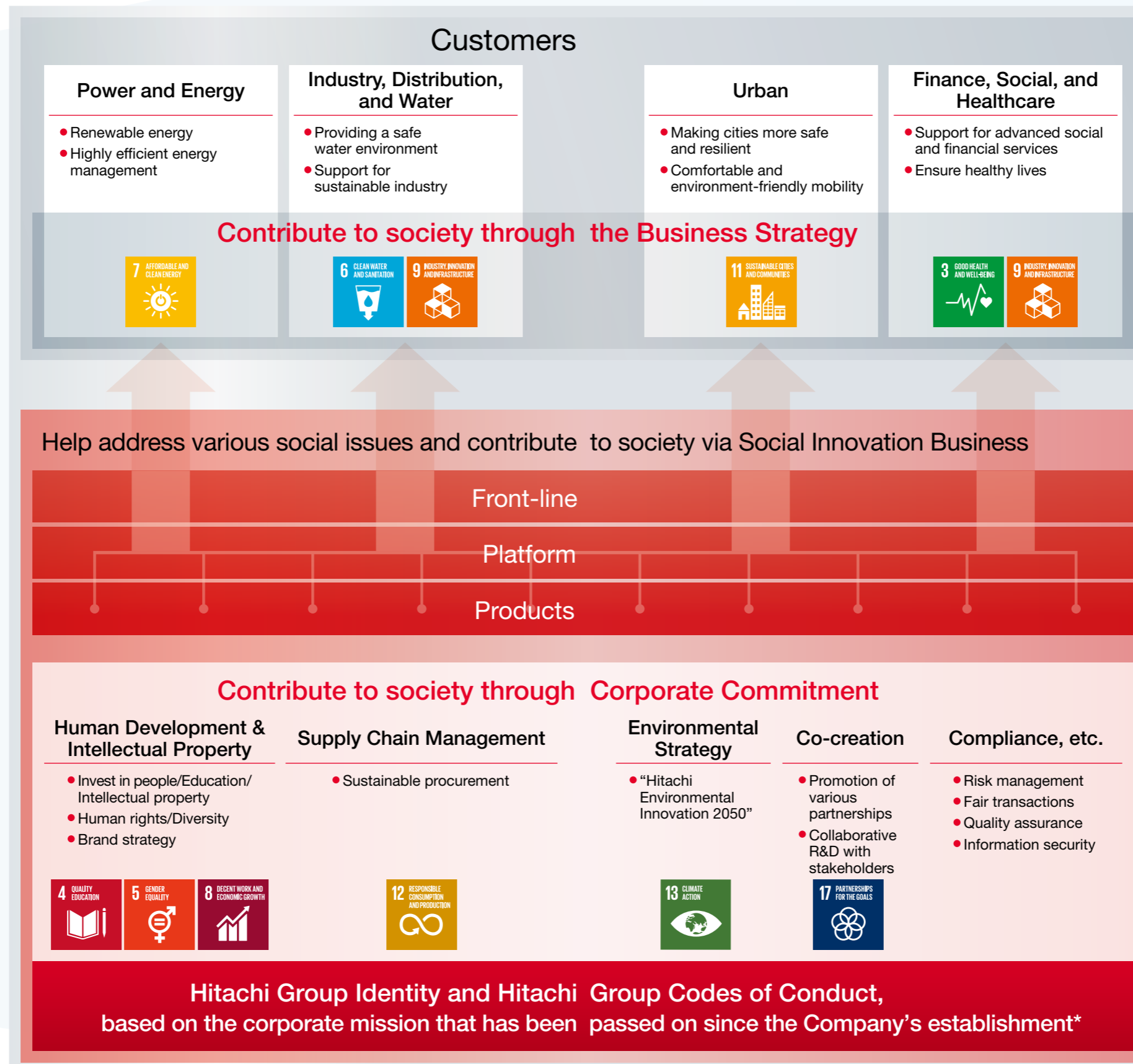
Possession ▶ Share

Closed ▶ Open

Specific optimization ▶ Total optimization

## Social Issues

- Energy and environmental issues
- Water scarcity
- Rapid urbanization
- Aging society
- Lack of infrastructure
- Security



## Realize a sustainable society and enhance the Company's value

### Economic Value (FY2017 results)

Revenue: **9,368.6 billion yen**

Adjusted operating income: **714.6 billion yen**

### Social Value

Safety and security, Zero accidents, Trusted products and services, Decent work and economic growth, Healthy and prosperous lives

### Environmental Value (FY2017 results)

Reduction in CO<sub>2</sub> emissions: **33%** (base: FY2010)

Reduction in water usage per unit: **32%** (base: FY2005)

\* The guidelines for ethical behavior and decision-making shared by all executives and employees of the Hitachi Group. (revised in April 2018) <http://www.hitachi.com/corporate/about/conduct/>



# HITACHI

Inspire the Next

A truly global company helping to realize a sustainable society

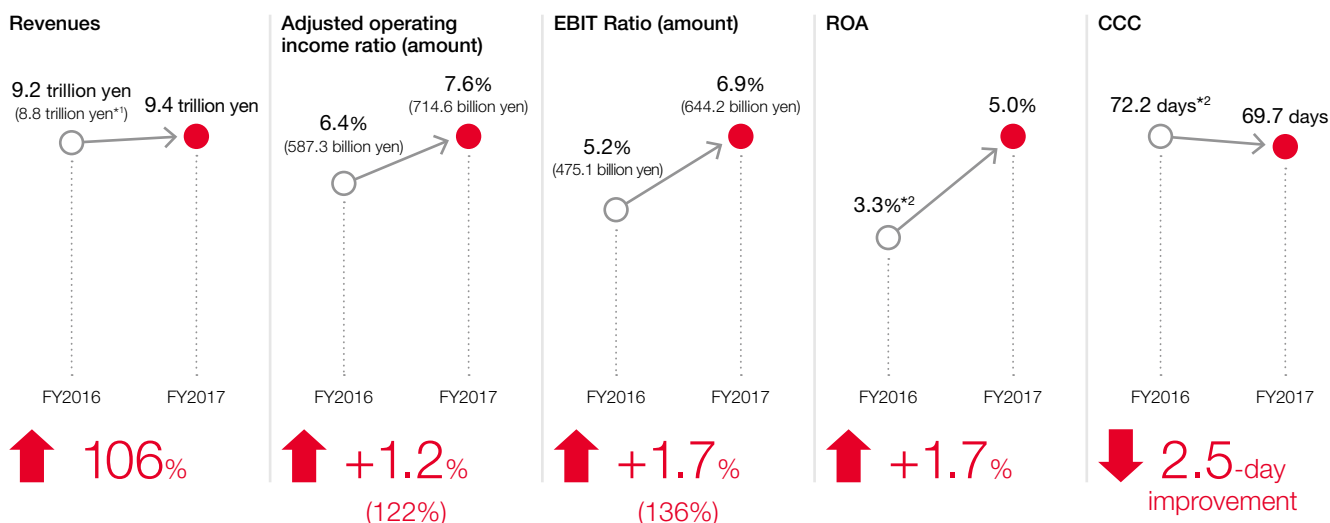
In my CEO Message in last year's Integrated Report, I made a commitment that Hitachi would accelerate future growth and I invited all stakeholders to "keep watching Hitachi as we shift into high gear to leap ahead" as "an Innovation Partner for the IoT era." Over the past year, we have made progress toward realizing our goals. We have downsized or exited unprofitable businesses while revising our business portfolio. At the same time, we have focused on globally developing the Social Innovation Business, based on digital technologies that utilize Lumada in ways that harness the strengths of Hitachi. We have also taken steps to accelerate the pace of collaborative creation in partnership with customers.

Our performance in fiscal 2017 set new records in profit terms, with adjusted operating income, EBIT, and net

income attributable to Hitachi, Ltd. stockholders all posting new highs. We made further progress in globalizing the business, with the ratio of revenues from overseas operations increasing to 50%. In addition, we achieved several of the 2018 Mid-term Management Plan targets for KPIs such as return on assets and cash conversion cycle (CCC) a full year ahead of target. These achievements demonstrate our efforts to satisfy market expectations.

However, we cannot be satisfied with these figures if we want Hitachi to be globally competitive. Having positioned fiscal 2018 as a year of evolution towards becoming a truly global enterprise, we are working to improve profitability and strengthen our business foundation so that we can establish a strong presence as an innovation partner for the IoT era.

## Results (FY2016, FY2017)



\*1 Figures including YoY growth are adjusted to reflect continuing operations (for FY2016, revenues exclude Hitachi Transport System, Hitachi Capital, and Hitachi Koki (now Koki Holdings)).

\*2 Manufacturing, Services and Others

## Addressing emerging trends head on

Many people are aware of the changes that are currently transforming our world. For example, while accelerated digitalization brings greater convenience and affluence to our lives, threats relating to cyberattacks and information security are gradually increasing. Progressive globalization in fields such as economics and politics is causing the emergence of geopolitical risk and greater uncertainty in both these areas. In addition, we face multiple social challenges due to issues ranging from global environmental destruction and climate change to demographic aging in advanced economies and the rapid urbanization of developing countries. The global community faces a significant new challenge as these issues become increasingly complex and more deeply ingrained.

Against this backdrop of global transformation, the United Nations developed the Sustainable Development

Goals (SDGs) and the Japanese government has advocated the Society 5.0 concept. Acknowledging the future development of humanity will entail major change on a global scale. Hitachi views these trends as an opportunity to take the next leap forward through sincere efforts to achieve such goals. The reason we want to be a part of creating the affluent and sustainable society as envisioned in the SDGs and Society 5.0 concept, is that it aligns with the mission Hitachi has pursued since its foundation to “contribute to society through the development of superior, original technology and products.” At a time of growing uncertainty, we believe Hitachi’s origins in terms of contributing to society are imbued with greater significance, and this reaffirms our commitment to work closely with customers and other partners in utilizing technology to address societal issues.

## Harnessing Hitachi’s strengths in the Social Innovation Business

True to Hitachi’s origins and taking advantage of our best strengths and characteristics, the Social Innovation Business can expand our operations while helping to realize a sustainable society. One of Hitachi’s main strengths is the MONOZUKURI (manufacturing expertise) we have cultivated in a wide variety of fields through more than a century spent on continually developing such capabilities. Besides the breadth of our product range, this is seen in Hitachi’s abundant Operational Technology (OT) knowledge regarding the operation and maintenance of various products in different operational settings. The demands of today’s customers are becoming more complex and advanced: beyond simply purchasing a product, they are interested in, for example, globally developing the know-how their skilled engineers in Japan possess or boosting productivity at manufacturing sites engaged in high-mix, low-volume production. To develop the high value-added solutions for addressing such management issues, we need a deep understanding

—as a partner—of what happens across a range of sites and the related issues. It is in such situations where I believe Hitachi’s OT capabilities can play an extremely valuable role.

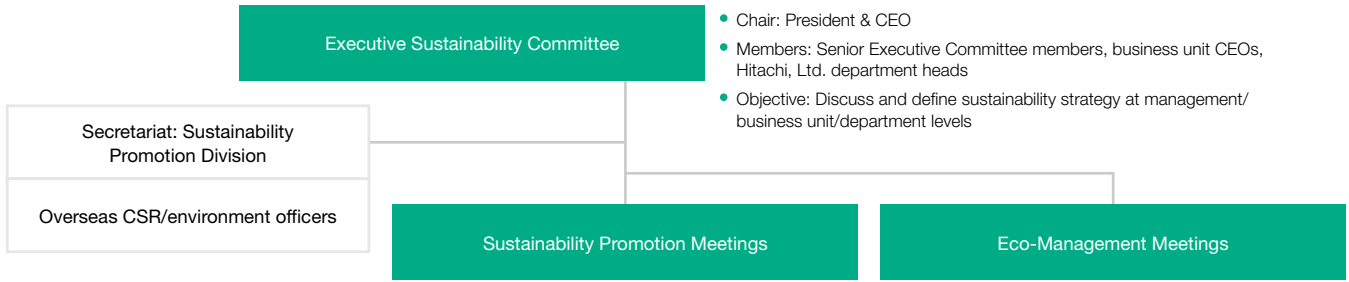
With more than 50 years’ involvement in the field, Hitachi also has extensive IT and front line knowledge. Applying the IT-related knowledge we have developed over this period we are creating optimized solutions using AI and other digital technologies to analyze all kinds of data. This is what we call “Lumada.” As new possibilities emerge with digital technology, our presence in OT, IT, and products, puts Hitachi in a superior position to utilize these digital capabilities to address a variety of real-world issues. In this way, Hitachi can be an innovation partner for the IoT era for customers. By utilizing the strengths of Hitachi, our aim is to avoid the threat of product commoditization by expanding into both solution- and service-based businesses to generate higher margins and steady earnings.

## Advancing sustainability management

In April 2017, in a move to ensure our business reflects global trends, we created the Executive Sustainability Committee to debate and make decisions on sustainability management for the Hitachi Group. I chair this committee, and its members include senior executives and Business Unit heads. By addressing the issues affecting global society as summarized in the SDGs, the Social Innovation

Business that Hitachi is promoting aims to realize a sustainable society and improve people’s quality of life. In line with this rationale, the Committee has lively discussions on creating and expanding opportunities for the Social Innovation Business within global markets, and on identifying related operational risks and mitigation measures.

## Sustainability Strategy Promotion Structure

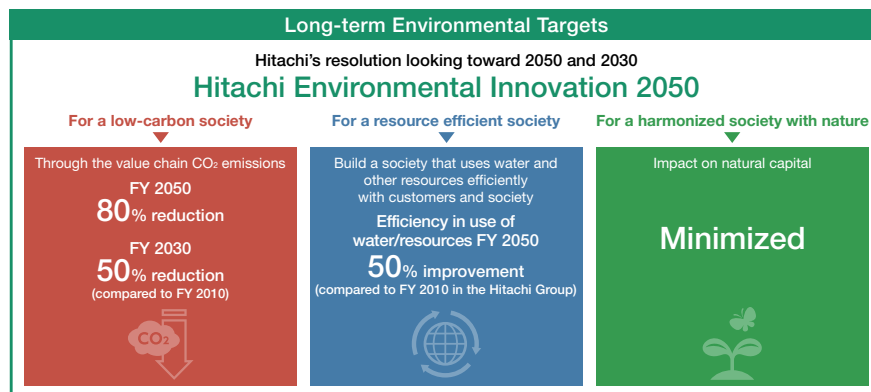


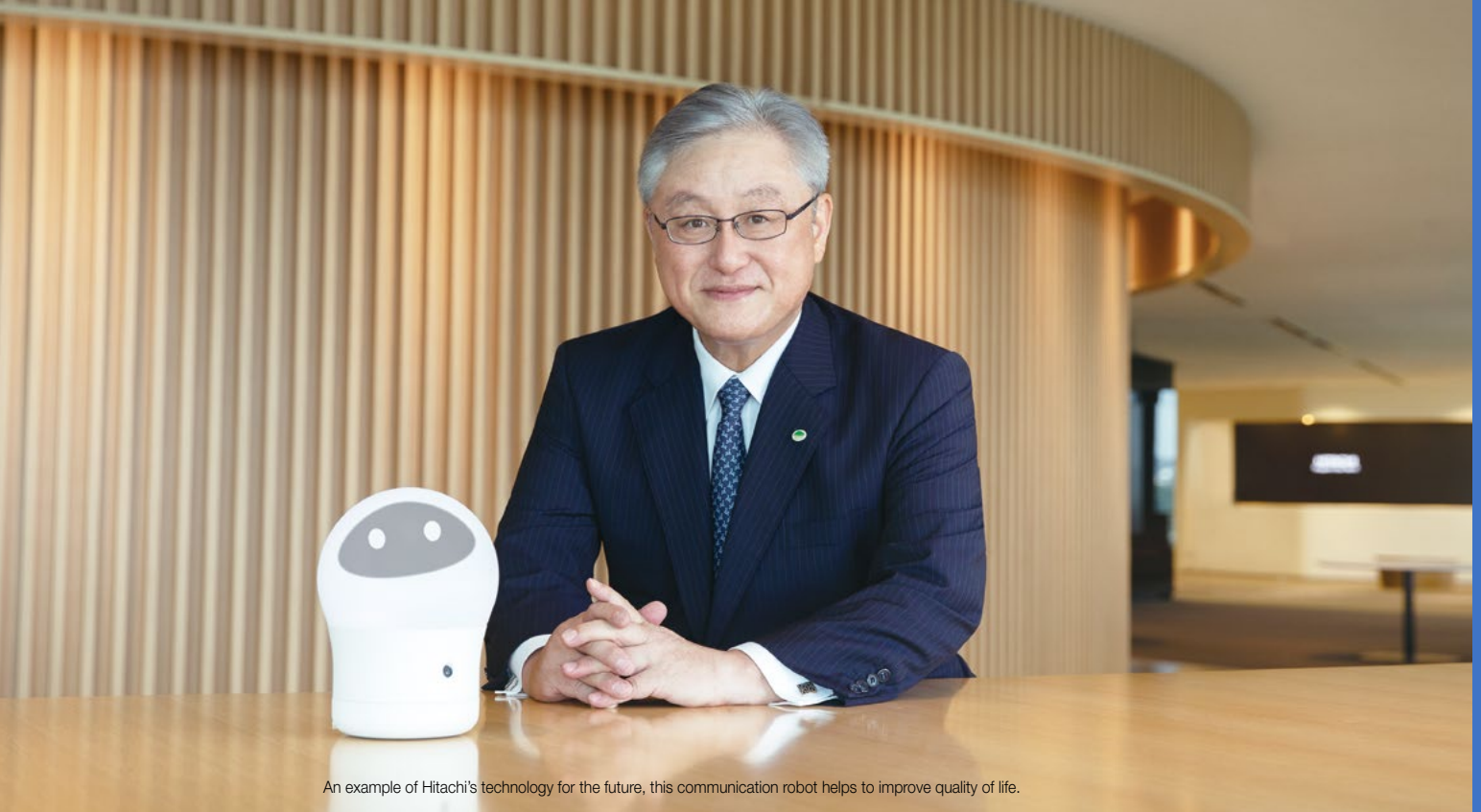
In April 2018, as core sustainability themes, the committee identified five goals from the 17 SDGs where Hitachi could make a major contribution through business activities, along with a further six goals where we could contribute based on all our activities as an enterprise. Hitachi's involvement in a wide range of business fields means we can make a substantial contribution to achieving the SDGs, and we are accelerating specific initiatives to achieve targets in the 11 areas we have identified.

For example, one of the goals where we plan to contribute through our business activities as an enterprise relates to climate change. With the Paris Agreement now in force, many countries and regions are working to realize a

low-carbon society. In Hitachi Environmental Innovation 2050, adopted in 2016, we have set quantitative goals for medium-term CO<sub>2</sub> emissions-reduction as part of long-term environmental targets. The Executive Sustainability Committee is examining deeply the issue of how to achieve these targets from the perspective of the CO<sub>2</sub> emissions caused by our own business activities, as well as those due to the products that we deliver.

In this way, through SDG-focused sustainability management practices across Hitachi, we hope to contribute on a global scale to realizing a more affluent society and improving quality of life for all.





An example of Hitachi's technology for the future, this communication robot helps to improve quality of life.

## Developing stronger competitiveness

Since it was established, Hitachi has focused on developing human capital based on a recognition that people are a major source of competitiveness. This has included setting up internal educational institutions to help employees acquire skills. Today, as Hitachi seeks to evolve into a truly global enterprise, we are focusing through our HR management on promoting diversity. People with detailed knowledge of the industrial structures and commercial customs used in different countries and markets are essential to the global development of our operations. To foster innovation, we also see the need to have a diverse range of talented people with differing values and perspectives working toward common goals.

Personally, I am determined that Hitachi makes tangible progress promoting diversity. In line with this, in November 2017 we set and publicly disclosed numerical targets for the ratios for both female and non-Japanese Executive Officers and Corporate Officers and the number of female managers in Hitachi, Ltd. One of the initiatives to achieve these targets with which I am personally involved is the Global Women's Summit, a series of events that bring together around 100 female employees from around the Hitachi Group worldwide for each event. These events aim to deepen awareness of leadership and career planning among female employees, while boosting motivation via

global networking opportunities. Since 2016, we have held events of this kind in various regions around the world. My discussions with female employees from countries around the world through these events spur my efforts to promote the globalization of Hitachi's business and cultivate greater diversity within our workforce.

We are also undertaking leadership development programs aimed at identifying and cultivating a diverse team of next-generation business leaders for the Hitachi Group. Besides senior executives, our independent outside directors are also actively involved in this HR development process aimed at building layers of leadership potential throughout the company.

R&D is another important source of competitiveness for Hitachi.

The mission to develop "superior, original technology" has made research and development a major focus of our activities from Hitachi's earliest days. In 2018, we celebrated the centenary of the establishment of the R&D Division. As we work to develop the Social Innovation Business globally, our R&D activities are focused on creating world-class technologies to support the business and on fostering innovation based on a collaborative creation approach with customers worldwide. We are looking to accelerate our collaborative creation efforts with customers by establishing Global Center for Social Innovation (CSI) facilities in North America, Europe, China, and the Asia-Pacific region. Our R&D operations are also actively involved in the development of new and upgraded Lumada-based digital solutions to drive the future growth of Hitachi.

Developing better products is another aspect of creating world-class technologies. In 2017, the ultra-high-speed elevators that we installed in a high-rise building in Guangzhou, China achieved the fastest speed ever

### Sustainability Strategy Promotion Structure

	End-FY2017 (actual)	FY2020 (target)
Executive and Corporate Officers Female	<b>2.5%</b>	<b>10%</b>
Non-Japanese	<b>6.4%</b>	<b>10%</b>
Number of female managers	<b>577</b>	<b>800</b>

recorded for an elevator. This product makes use of fluid analysis technology that we originally developed for rolling stock used on high-speed railways, the common aim being to transport passengers in comfort at world-beating speeds by minimizing noise and vibration. This example also illustrates how intra-Group synergies can help us hone a technical edge as part of developing and supplying products with an outstanding global reputation.

Elsewhere, we are actively partnering with universities, research institutions, and start-ups from around the world.

Guided by our vision to address social issues as part of supporting the realization of the Society 5.0 concept, we are accelerating open innovation activities with institutions such as the University of Tokyo, Kyoto University, and Hokkaido University.

At the same time, as part of our global approach to sustainability management, we must revisit a range of corporate activities from the perspective of trying to realize a sustainable society. To this end, in April 2018 we revised

the Hitachi Group Codes of Conduct to make it clear that all officers and employees of Hitachi Group companies bear the responsibility as global citizens to conduct business with higher aspirations. Guided by this principle, we are formulating and implementing rules and undertaking internal education programs across a range of corporate activities, including product safety and quality assurance programs; the construction of responsible supply chains that pay attention to human rights and environmental concerns; and our comprehensive compliance programs.

In fiscal 2018, we welcomed two new independent outside directors to the Board of Directors. Mr. Katsumi Ihara recorded various achievements in his former career at Sony. Mr. Joe Harlan has previously worked at senior levels for Dow Chemical, and has experience working in Japan as well. Utilizing the diverse wealth of experience and knowledge of our directors, we will look to entrench the growth of Hitachi by reflecting their helpful advice into our management.

## Achieving global growth through a focus on digital solutions

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Through recent discussions with customers and government representatives, I have sensed a positive response toward realizing our 2018 Mid-term Management Plan goal of being an innovation partner for the IoT era. To instill confidence in this notion, we are focusing in the first instance on training more front-line personnel and data scientists to help strengthen the Social Innovation Business globally. To expand our digital solutions business, we are training people to work in expert roles relating to interaction and negotiation with customers such as consulting, front-end or systems engineering, contract negotiation, and project finance. At the same time, we are investing to train and develop a global pool of data scientists. Specifically, we have set up training programs and established the Professional Community for researchers and practitioners from various fields. Our target is to increase the number of data scientists working in the Hitachi Group to 3,000 by fiscal 2021.

In April 2018, we also set up a new internal structure to facilitate the global supply of solutions developed for national markets. Executive Vice President and Executive Officer Keiichi Shiotsuka, who leads the Systems & Services Business, was appointed Head of the Social Innovation Business that utilizes Hitachi's digital technology. Hicham Abdessamad was appointed the CEO of Hitachi Global Digital Holdings Corporation, the holding company for Hitachi Vantara Corporation and Hitachi Consulting Corporation. Under this new structure, we will formulate and implement a strategy to strengthen our Lumada digital solutions by applying the cutting-edge technologies

being developed primarily for the Americas, along with our existing digital solutions-related expertise to drive the global expansion of the Social Innovation Business. The adoption of this structure should also help to accelerate Hitachi's global expansion by entrenching the shift from a product-centric business model to a new style of operations based on integrating digital technology solutions with services.

Lumada is the foundation of our rapidly expanding digital solutions business. Many customers have utilized it since we first introduced Lumada-based services in 2016. Revenues generated by Lumada operations exceeded 1 trillion yen for the first time in fiscal 2017 as it has grown steadily to become a central pillar of Hitachi's operations. One example of this is the Maintenance & Repair Service that we now offer industrial equipment manufacturers and other customers as a total support solution. This service began life as a collaborative creation with an overseas corporate customer, in which we developed a system to automatically propose optimized repair schedules for equipment based on the analysis of varied data. Going forward, we plan to develop this Lumada solution on a global basis.

In September 2018, we established the Lumada Center Southeast Asia in Thailand as part of strengthening our global set-up. In line with the Thai government's Thailand 4.0 vision that aims to establish the foundations for an advanced economy while promoting further economic growth, this center will be a base for the development of digital solutions based on collaborative creation with

customers across the Asia Pacific region. Going forward, Hitachi will accelerate the development of digital solutions using Lumada within ASEAN, with this center supporting our collaborative creation projects with customers and other partners.

Reflecting on the success of such initiatives, we are steadily expanding Hitachi's presence in digital solutions through collaborative creation with customers. I am confident this will be a major driver of the future growth of Hitachi's business.

## Reinforcing our business foundation to become a truly global enterprise

The 2018 Mid-term Management Plan contains clear commitments to improving profitability and strengthening cash flow generation. In fiscal 2017, we continued downsizing or exiting unprofitable businesses with an adjusted operating margin of less than 5%. Alongside this, we revised Hitachi's business portfolio by selling part of our equity stake in Hitachi Kokusai Electric Inc. and removing remaining operations from the scope of consolidation. In addition, we sold Hitachi's interests in ALAXALA Networks Corporation and the forged steel roll business.

In fiscal 2018, we are working to establish a more efficient business foundation by continuing to restructure operations, through reforms to indirect business processes, and by reducing the number of companies within the Hitachi Group. We are also promoting digital transformation from enhanced operational transparency, based on the collation or integration of management information.

We are also maintaining a clear focus on future growth by prioritizing investment in growth areas to drive the expansion of the business and targeting increased returns from asset allocation. Specific policies included sales of shares in publicly listed subsidiaries and measures to improve CCC. These steps helped us make incremental balance-sheet improvements. Going forward, we will focus on further strengthening cash generation, optimizing asset management, and selectively focusing investments in growth sectors. We are analyzing all our businesses closely based on their potential for expansion in global markets and return on assets. While focusing our investments on markets with growth potential and higher-margin businesses, we will seek to reallocate assets generating poor returns or reduce Hitachi's exposure to such businesses. Our aim is to accelerate our investments in the Social Innovation Business, having secured a stronger balance sheet and greater investment freedom.

## Hitachi Group forms 300,000-strong united team


It is no simple matter for Hitachi to become a truly global enterprise or to achieve a double-digit adjusted operating margin. However, we are making steady progress towards these goals and trying to speed up the actions needed to realize these ambitions.

More than anything, what gives me hope for the future is the changes being made by employees of Hitachi to support growth. My conviction is employee awareness within Hitachi and the attitude towards business processes have both changed significantly over the past few years. Since my appointment as CEO, we have undertaken a variety of policies. For example, introducing the Business Unit system has made employees more aware of the performance of their division and its cash-generation capabilities, which in turn has translated into improved divisional performance and greater individual pride in these achievements. We also have recruited many new employees, especially overseas, who are attracted to Hitachi by virtue both of our philosophy of contributing to society and by the prospects of our Social Innovation Business, which combines growth with efforts to create a sustainable society. These many new colleagues point to our success in communicating Hitachi's corporate

philosophy and culture to the world. I continue to hold town hall meetings so that I can communicate my thoughts about Hitachi's direction and goals directly to our employees around the world. I believe we can become even more powerful as a unified team working towards common goals if we can harness the diversity of over 300,000 individuals.

Looking ahead, I am confident we will continue to grow steadily and help realize a sustainable society based on multiple partnerships. Please keep watching Hitachi as we move in this direction.

September 2018



Toshiaki Higashihara  
President & CEO  
Hitachi, Ltd.



# Progress of the 2018 Mid-term Management Plan

In fiscal 2017, Hitachi posted record earnings\* in terms of adjusted operating income, EBIT, and net income attributable to Hitachi, Ltd. stockholders.

In fiscal 2018, through global expansion and other initiatives, Hitachi is targeting adjusted operating income and EBIT ratios of over 8%, respectively, and net income attributable to Hitachi, Ltd. stockholders of more than ¥400 billion.

\* Since introduction of consolidated accounting in fiscal year ended March 1987

## Overview of 2018 Mid-term Management Plan Initiatives

Designating fiscal 2017, the second year of the 2018 Mid-term Management Plan, as the year to “change gears toward growth,” Hitachi targeted global expansion through M&A while strengthening the Lumada business by increasing collaborative creation with customers. Business restructuring also continued through efforts to improve the earnings of unprofitable operations, including downsizing and withdrawal. In addition, over the two-year period ended March 31, 2018, Hitachi reorganized businesses generating revenues of around ¥1.5 trillion, focusing mainly on publicly listed subsidiaries. These efforts led to significant year-on-year improvements in earnings in fiscal 2017, of ¥127.3 billion for adjusted operating income, ¥169.0 billion for EBIT, and ¥131.7 billion for net income attributable to Hitachi, Ltd. stockholders. Other profitability and cash generation metrics improved, also, with the operating cash-flow margin rising to 7.8% and ROA increasing to 5.0%.

Fiscal 2018 is the final year of the plan. Positioned as the year of achieving the plan targets and becoming a globally integrated enterprise, it features measures to achieve specific targets and create further growth.



### • Continued business restructuring

#### ① Structural reforms

- Improvement (YoY) of ¥38.0 billion in adjusted operating income via downsizing and withdrawal from unprofitable businesses
- Withdrawal from large-scale industrial EPC\* business
- Gains from restructuring in FY2017: ¥15.0 billion (YoY)

#### ② Selection and concentration of businesses

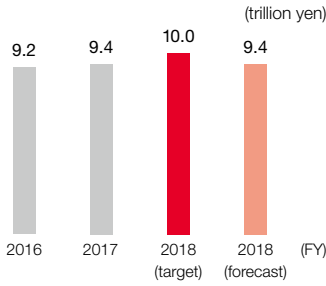
- Reorganization of businesses generating revenues of approx. ¥1.5 trillion over FY2016-2017

FY2016	FY2017
Logistics service (Hitachi Transport System)	Semiconductor manufacturing equipment, etc. (Hitachi Kokusai Electric)
Financial service (Hitachi Capital)	Passenger transportation service (Hitachi Dentetsu)
Electric tools (Hitachi Koki (now Koki Holdings Co., Ltd.))	Network devices (ALAXALA Networks)
Others (LCD Panel manufacturing equipment, etc.)	Forged steel roll business

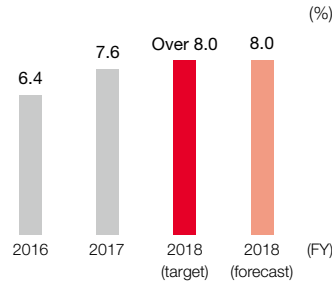
\* EPC: Engineering, Procurement and Construction

# Making Steady Progress

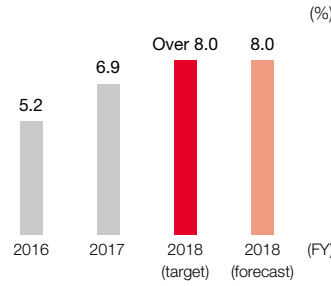
Revenues\*1



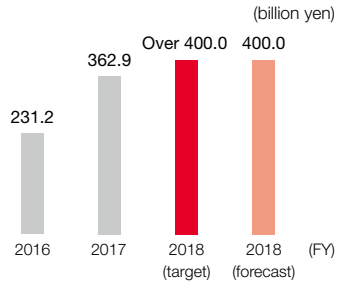
Adjusted Operating Income Ratio



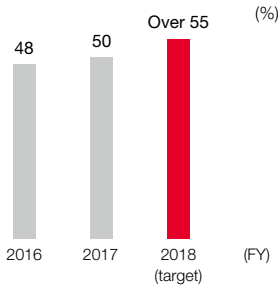
EBIT Ratio



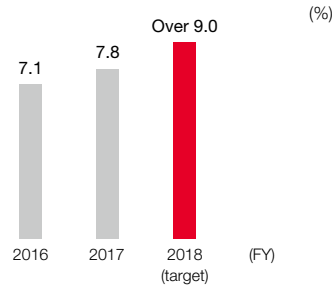
Net Income Attributable to Hitachi, Ltd. Stockholders



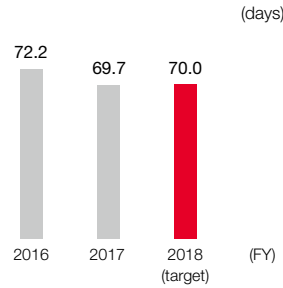
Global Business Expansion (Overseas Revenue Ratio)



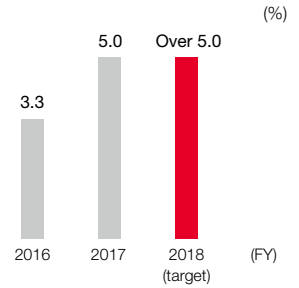
Stronger Cash-generating (Operating Cash-Flow Margin)\*2



CCC (Cash Conversion Cycle)



Asset Profitability Improvement (ROA)\*2 \*3



	2016	2017	2018 (forecast)	(FY)
Average FX Rate				
	JPY/USD	108	111	105
	JPY/EUR	119	130	130

\*1 Rounded to the nearest hundred billion.

\*2 Figures for Manufacturing, Services and Others.

\*3 Return on assets (ROA) = Net income / Total Assets (Average between the end of current fiscal year and the end of previous fiscal year) x 100.

## Global Business Expansion

Overall global revenues in FY2017 YoY: **113%**

**YoY: 113%**  
 FY2016 Revenues\* **0.85** trillion yen  
 FY2017 Revenues **0.96** trillion yen

**YoY: 114%**  
 FY2016 Revenues\* **0.91** trillion yen  
 FY2017 Revenues **1.04** trillion yen

**YoY: 108%**  
 FY2016 Revenues\* **1.09** trillion yen  
 FY2017 Revenues **1.18** trillion yen



- Railway
- Construction machinery
- High functional materials & components



- Elevators/Escalators
- Automotive products
- Construction machinery
- High functional materials & components



- Railway
- Industrial equipment/solutions
- IT products
- Construction machinery
- High functional materials & components



**YoY: 114%**  
 FY2016 Revenues\* **0.91** trillion yen  
 FY2017 Revenues **1.04** trillion yen

- Elevators/Escalators
- Automotive products
- Construction machinery

Regions except for those listed above (including Japan):

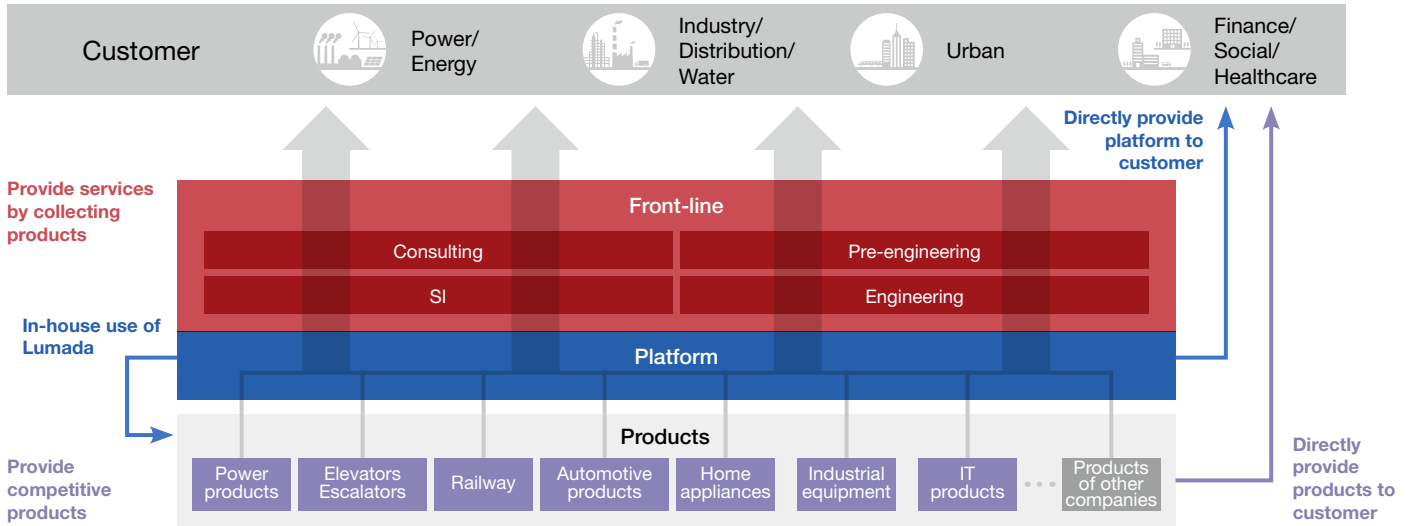
FY2016 Revenues\* **5.04** trillion yen  
 FY2017 Revenues **5.15** trillion yen

\* Figures reflecting adjustments based on currently existing businesses. (Revenues of Hitachi Transport System, Hitachi Capital, and Hitachi Koki were excluded from the actual result in FY2016)

# Toward Future Global Growth Using Digital Technology

The targeted model for Hitachi's future growth involves Front and Platform business divisions selecting products and supplying services in line with the changing needs of customers.

Product business divisions will focus on supplying globally competitive products.



## Policies for Growth

### Investments in Focused Business Fields

Our investments across all global regions (North America, Asia, China, and Europe) are targeted towards four business fields with the aim of expanding global operations, expanding digital service businesses, and responding to a sustainable society.

### Investment Direction

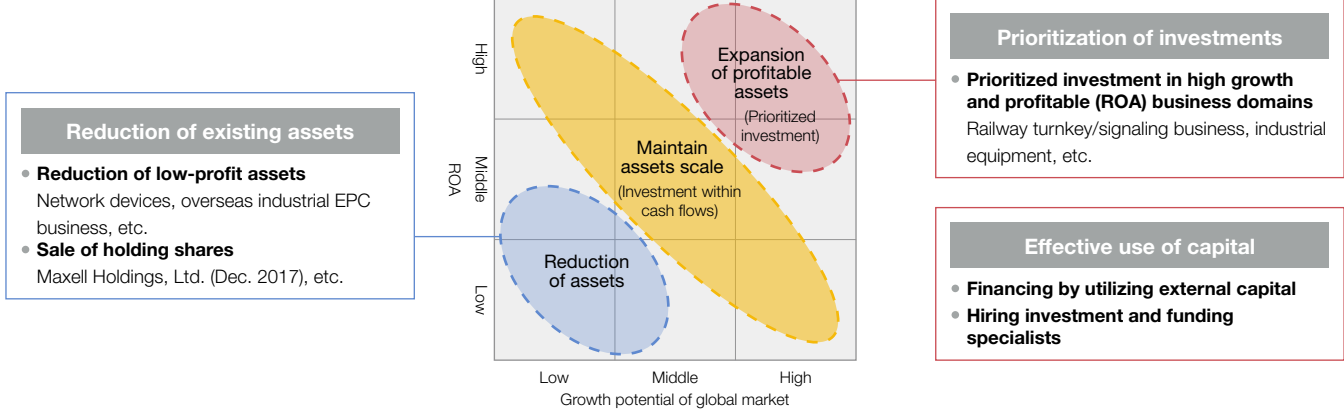
- **Expand global business:** Enhancement of regional sales channel, etc.
- **Expand digital service business:** Financial payment system, e-Government, etc.
- **Respond to sustainable society:** Carbon free (e.g. renewable energy, energy management, electric vehicles), etc.

	Power/ Energy	Industry/ Distribution/ Water	Urban	Finance/ Social/ Healthcare
Investment fields	<ul style="list-style-type: none"> <li>• Renewable energy</li> <li>• Distributed power solution</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturing solutions</li> <li>• Industrial equipment (North America/Asia)</li> </ul>	<p><b>Railway</b></p> <ul style="list-style-type: none"> <li>• Turnkey/signaling system</li> </ul> <p><b>Elevators/Escalators</b></p> <ul style="list-style-type: none"> <li>• New installations/maintenance (China/other countries &amp; regions of Asia)</li> </ul> <p><b>Automotive</b></p> <ul style="list-style-type: none"> <li>• Electric power trains, autonomous driving products</li> <li>• Mobility as a Service</li> </ul>	<p><b>Japan and global</b></p> <ul style="list-style-type: none"> <li>• Financial payment system (Asia)</li> <li>• e-Government (Asia)</li> </ul>

### Improvement of Asset Profitability

Led by the Investment Strategy Division established in April 2017, Hitachi is working to generate higher profits from assets by prioritizing investment in markets with growth potential and businesses that can generate higher ROA, and by downsizing or substituting existing assets through reduction of exposure to low-margin assets or the sale of equity holdings. In addition, Hitachi is working to make more effective use of capital, including financing efforts that utilize external capital.

**Direction of Assets Holdings**



**Growing the Social Innovation Business Using Digital Technology**

Hitachi's aim is to realize better quality of lives for people through the global supply of advanced social infrastructure using digital technology. In fiscal 2017, we laid the foundation to expand businesses that utilize digital technologies such as Lumada. Specific measures included construction of a global support set-up, front-line HR foundation, and the development of Lumada software to enable rapid, simple systems deployment. In fiscal 2018, we plan to accelerate the global supply of solutions through Hitachi Global Digital Holdings Corporation, which was established in April 2018.

⌚ Please see "Expanding the Supply of Lumada Digital Solutions" (p. 18) for more details.

**Human Resources for Growth**

Hitachi is investing to strengthen human resources to realize growth through digital technology on a global scale. These efforts are underpinned by the appointment of three talented global executives to head up the relevant business units and group companies, along with our Chief Commercial Officers to provide specialized management expertise in North America, Europe, and Asia. In addition, we have recruited around 30 top-level managers from global firms in the IoT sector to manage operations in each field. We are also looking to strengthen Hitachi's capacity to create innovations through the recruitment of a diverse array of talent. As of April 1, 2018, the ratios of women and non-Japanese in executive and corporate officers within Hitachi, Ltd. were 2.5% and 6.4%, respectively. By fiscal 2020, we aim to increase each of these figures to 10%.

⌚ Please see "Message from the Chief Human Resources Officer" (p. 31) for more details.

**R&D and New Business Creation**

As part of originating world-leading products and services, Hitachi is focused on the development of innovative technologies and the creation of new businesses. Specific areas of focus where we are increasing our investments in technical development include blockchain, autonomous driving, smart manufacturing, AI, and robotics. In March 2018, as part of a program aimed at creating disruptive technologies based on an open innovation approach, we invested in funds managed by the venture capital firm Geodesic Capital.

⌚ Please see "Message from the Chief Technology Officer" (p. 35) for more details.

**Accelerate Management Speed, Improve Operational Efficiency**

As part of measures aimed further at improving profitability by strengthening the business foundation and reforming business processes, we are promoting measures for (1) increased efficiency of indirect operations, (2) reduced number of subsidiaries, and (3) digital transformation through increased visibility of management data. Through such measures, we aim to reduce costs by more than ¥100 billion by fiscal 2021.

Management issues	Improvement themes	Reform projects		
<div style="border: 1px solid green; padding: 5px; display: inline-block;">Increase speed</div>  <div style="border: 1px solid red; padding: 5px; display: inline-block;">Increase operational efficiency</div>	<ul style="list-style-type: none"> <li>• Simplify organizational structures</li> <li>• Reorganize system and rules</li> <li>• Reorganize work processes</li> <li>• Enhancement of compliance</li> <li>• Centralize management information</li> </ul>	Increased efficiency of indirect operations	Reduced number of subsidiaries	Increased visibility of management data
		●	●	●
		●		●
		●	●	
				●

# Expanding the Supply of Lumada Digital Solutions



To help realize a sustainable society, Hitachi is promoting global upscaling of the Social Innovation Business by increasing the supply of solutions that utilize digital technology based on collaborative creation with customers.

## 1. Digital Solution Supply Initiatives to Date

Hitachi's stated aim in the 2018 Mid-term Management Plan is to be "an Innovation Partner for the IoT Era" by embracing the digital revolution that is transforming society and industry. Since April 2016, Hitachi's operations have been divided along organizational lines into the three levels of "Front," "Platform," and "Product."

The rationale behind this move is to adopt a customer-centric business model to identify new markets for applications, rather than the conventional focus on supplying products. The aim of "Front" operations is to identify customer issues and to put in place a "Platform" that makes full use of OT and IT in a bid to efficiently provide relevant solutions, while the aim of "Product" operations is to supply highly competitive products.

In May 2016, Hitachi began supplying Lumada-based digital solutions to help address management issues linked to customer value chains.

Condensing the OT and IT expertise that Hitachi has accumulated over many years into a rich array of solutions, Lumada is a way of supplying customers with digital technology-derived innovations in a speedy and efficient manner. In practical terms, Hitachi is amassing Lumada customer cases through collaborative creation with customers as well as internal development of Lumada solutions within the Hitachi Group.

In both instances, a digital solution is created using Lumada to support the analysis of multiple types of variable data using AI or other big data analytical methods.

Based on existing customer cases, Hitachi is accelerating global upscaling of the supply of Lumada digital solutions by seeking to develop solution cores with generalized applicability to the needs of various customers.

In fiscal 2015, to expand collaborative creation through assignment of researchers to centers based close to customers while reinforcing innovative capabilities aimed at creating original technologies to satisfy market requirements, Hitachi established the Global Center for Social Innovation (CSI) as part of reforms to the Group's global R&D structure. The CSI focuses on collaborative creation in which researchers, designers and other Hitachi personnel work with customers on the development of digital solutions. Currently, there are CSI facilities in five key regions, with bases in Tokyo, North America, China, Europe, and Asia-Pacific (APAC). The collaborative creation process at these bases with customers, business partners, and other stakeholders is called "NEXPERIENCE." It involves finding multifaceted ways to visualize knowledge to facilitate smooth solution development, the utilization of IT tools, and a systematized co-creation methodology.

	FY2016 (result)		FY2017 (result)		FY2018 (forecast)
Billions of yen		Initial target*1		Initial target*1	
Revenues of Lumada business	<b>900.0</b>	950.0	<b>1,006.0</b>	1,050.0	<b>1,070.0</b>
Lumada core business*2	<b>120.0</b>	190.0	<b>230.0</b>	290.0	<b>310.0</b>
Lumada SI business*3	<b>780.0</b>	760.0	<b>776.0</b>	760.0	<b>760.0</b>

\*1 As released on Hitachi IR Day 2017 in June 2017

\*2 Service businesses where AI and analytics are utilized to convert customer data into valuable insights to help improve management indicators or offer solutions to business-related issues

\*3 Lumada core business-driven SI operations within the IoT field (industry/social infrastructure-related)

## 2. Global Development Initiatives

To support the development of the Social Innovation Business from a global perspective, Hitachi is looking to expand the provision of digital solutions by focusing on social issues that are specific to certain markets or regions.

### North America

In North America, Hitachi is focusing mainly on the business domains of Industry, Urban (including railways), and Finance.

In the Industry domain, the July 2017 acquisition of US air compressor manufacturer Sullair not only strengthened Hitachi's industrial equipment business, but also created opportunities to expand into digital solutions tailored to sectors such as manufacturing and mobility. For example, Hitachi has developed a service platform to automatically propose optimal repair work for various types of industrial machinery, based on combining Hitachi's strong track record and related know-how in the manufacture and maintenance of industrial machinery (OT) with AI or other digital technologies (IT). Hitachi plans to use this platform to expand sales of its Maintenance & Repair Service to various industrial machinery manufacturers.

In the Urban domain, Hitachi is supplying a wide range of railway products/systems and solutions, from rolling stock to signaling systems. This includes major metro projects in cities such as Miami and Baltimore. Going forward, in addition to supplying railway systems, Hitachi is working to secure orders for turnkey projects that include local construction and engineering as part of expanding the business in North America. Supplying digital solutions utilizing Lumada is another element of regional growth plans.

In the Finance domain, Hitachi established the Financial Innovation Laboratory in 2016 in Santa Clara, California, USA to undertake R&D into FinTech solutions using blockchain and other technologies. Through its involvement in joint research with Stanford University and in the Hyperledger project hosted by the Linux Foundation, Hitachi is working to develop and test practical FinTech solutions using cutting-edge analytical tools for credit scoring, while also contributing to the blockchain community and the development of commercial applications.

### Europe

In Europe, the key focus is on the Urban domain, primarily railways.

Hitachi is working to expand operations from product/system businesses such as rolling stock and signaling systems to include railway-related digital solutions. For example, dynamic headway solutions optimize train frequency in line with passenger demand, using predictions of passenger numbers based on people flow analysis. Hitachi is developing a solution of this type for the driverless Copenhagen Metro in Denmark.

### China

In China, the key focus is also on the Urban domain.

Hitachi plans to develop its Chinese operations by focusing on data-centric building service business where it has a presence in Japan, including round-the-clock remote monitoring of elevators and other building equipment and predictive maintenance based on the use of operational data to forecast breakdown probabilities.

### Asia

In Asia, Hitachi is focusing mainly on the Industry and Social Infrastructure domain.

In the Industry domain, Hitachi established the Lumada Center Southeast Asia in Thailand in September 2018 as a base for the development of the digital solutions business within the ASEAN region.

In the Social Infrastructure domain, in a collaborative creation project with Thailand Post, Hitachi is developing and testing a digital post service to enable users to receive notifications from public-sector institutions via a PC, smartphone or other device as part of creating a new service to provide information using the postal network. Elsewhere in the region, in April 2018, Hitachi formed Hitachi MGRM Net Ltd. following the acquisition of shares in Indian IT services provider MGRM Net Ltd. The new company will lead Hitachi's efforts to support the Indian government's "Digital India" initiatives including "e-Governance" and "e-Education" based on the digitalization of government services.

### 3. Systemic Investments to Support Global Expansion

Besides combining the digital solutions expertise cultivated to date with advanced technology to develop services with applications across a wide range of sectors, Hitachi is expanding the provision of digital solutions through Hitachi Global Digital Holdings Corporation, which was established in April 2018.

Interoperability with various systems and Lumada will be an important part of the global expansion of digital solutions. To this end, including participation in the Edgecross Consortium\*<sup>1</sup>, Hitachi is actively promoting collaborative creation projects with various stakeholders ranging from other companies to universities and other academic or research institutions.

As part of developing the human capital necessary for creating digital solutions, Hitachi has instituted a training program to cultivate data scientists with the required skills. To help foster conditions needed to create original expertise, Hitachi has also established the Professional Community for top-class researchers and practitioners from every field to share relevant knowledge.

Hitachi's target through these initiatives is to increase the number of data scientists working in the Hitachi Group worldwide from around 700 at present to 3,000 by fiscal 2021 to support further expansion of the digital solutions business.

\*1 A body established on November 29, 2017 with the aim of going beyond the basic framework of companies and industries to create new value in the field of edge computing through involvement in activities to support the IoT conversion of the manufacturing industry, the "Society 5.0" \*<sup>2</sup> plan advocated by the Cabinet Office, and the "Connected Industries" \*<sup>3</sup> concept promoted by the Ministry of Economy, Trade and Industry (METI)

\*2 A series of initiatives aimed at sharing and realizing the future vision of a "super smart society" in which there is high-level merging of cyberspace with the real world, as outlined by the Cabinet Office in the 5th Science and Technology Basic Plan

\*3 A conceptual vision for Japanese industry announced by METI in March 2017

To achieve the goal of being "an Innovation Partner for the IoT Era," Hitachi is working to upgrade its service business with the aim of evolving global supply capabilities for end-to-end solutions.

#### Copenhagen Metro Project

Hitachi is working with Metroselskabet, the public-sector infrastructure owner of the metro in the Danish capital Copenhagen, to test a dynamic headway solution to adjust the frequency of trains to real-time passenger demand. The solution will combine Hitachi's digital and IoT technologies with the train control systems of Ansaldo STS, a Hitachi subsidiary operating in the railway systems business.

Passenger demand on the Copenhagen Metro varies significantly depending on the time of day and any events occurring near the network. Moreover, the opening of a new line in 2019 is expected to result in a substantial increase in passenger numbers on the existing lines. The elimination of overcrowding in trains is a major issue.

Having used rolling stock and signaling systems supplied by the Hitachi Group for many years, Metroselskabet is an important Hitachi long-term partner. The advanced service provided by Hitachi for the Copenhagen Metro includes driverless trains that run 24 hours a day.

The dynamic headway solution automatically adjusts train frequency using the results of an analysis of changes in passenger numbers, visualizing congestion data collected from sensors located in each station. By easing congestion before it occurs, this provides a more satisfying transport experience for passengers. The system also helps the metro operator to reduce costs by adjusting train frequency to real-time changes in demand, contributing to energy savings along with higher efficiency.

