# Story of Value Creation in the IT Sector

The use of digital technologies such as 5G, AI, IoT and robots is essential for companies aiming to continuously raise their corporate value amid dramatic environmental changes and a focus on digital transformation, or the revolutionization of corporate management through digital technology, is rising even further. In Japan, where the birthrate is rapidly declining and the population is aging at an alarming rate, IT-related market is expected to be necessary for improvement in productivity and work-style reforms.



13.0% 338.0 FY2021 (Target)

EBIT (¥ billion)/EBIT ratio (%)





Note: Figures for each subsegment include intersegment transactions

## Principal Products and Services





### Vision and Targets under the 2021 Mid-term Management Plan

#### Accelerate customer innovation with advanced IT

In the IT Sector, we will meet the expectations of customers in Japan and overseas with the power of digital technology, achieve a sustainable society and aim to become a top-class global solution provider. Moving forward, we will aim to improve social value through advanced digital solutions operations in the financial and social infrastructure fields. At the same time, we will strive to create environmental value by raising environmental efficiency throughout the lifecycle of our products and services.

#### Growth Strategies under the 2021 Mid-term Management Plan

Digital transformation, which involves attempting to produce reforms in corporate management and business models, is receiving an increasing amount of attention. Under these conditions, mobile payment systems utilized in mobile phone networks, which have a global penetration rate of more than 100%, are becoming commonplace in people's lives and are becoming gigantic infrastructures that generate large amounts of data every day. In addition, new discoveries and expansion are expected in a wide range of domains within the X-Tech (crosstech) market, where FinTech, HR Tech and other digital technologies are used to develop new services in various fields and industries and transform industry structure itself. Furthermore, we anticipate growth in the information and communication technology-related market moving forward. Under these circumstances, we have steadily improved profitability and created the cash necessary for growth investment in the IT Sector by reinforcing front functions and manufacturing capabilities through reorganization of SI businesses; withdrawing from or concluding low-profit businesses such as the communication network equipment business; and reducing loss cost through thorough and enhanced project management. Moving forward, we will continue to expand the Lumada business, which acts as the core of growth, and invest one trillion yen over the three years covered by the 2021 Mid-term Management Plan to accelerate global expansion.

#### Expansion of the Lumada Business

The Lumada business will serve as a growth engine for all of Hitachi through the utilization of data and co-creation with customers and partners. The digital tools and wide-ranging industry and business expertise used to make this possible are being condensed into customer cases adjusted so they can be reused by many customers.

Lumada's customer cases have been accumulated as "workplace knowledge" of "OT  $\times$  IT  $\times$  Products," which Hitachi has refined through its customer-centered policies. By using Lumada as a starting point, we can minimize customization and develop and implement speedy solutions. Furthermore, the ability to expand Lumada into a wide range of areas, such as mobility, smart life, energy and industry, is a major factor that distinguishes Hitachi from its competitors.

We worked to expand digital solutions using Lumada during the three years covered by the 2018 Mid-term Management Plan, launching the business globally in 2016 and investing about ¥100 billion into the launch of related businesses. Currently, we have amassed more than 650 customer cases (as of the end of fiscal 2018), which are examples of co-creation with users. On the other hand, we must refine Lumada's customer cases and the solutions that embody them on an ongoing basis as the management and business issues facing our customers continue to change constantly. As we move forward, we will strive to expand the Lumada business by accumulating new customer cases and partners.

Over the three years covered by the 2021 Mid-term Management Plan, we will continue to invest ¥150 billion in the Lumada business and related projects, aiming to expand the use of Lumada in other sectors and to develop and expand the digital specialists/human capital essential to the acceleration of the Lumada business. In fiscal 2021, we will increase our number of digital specialists to 30,000.

### Acceleration of Global Expansion

Previously, in the IT Sector, we established Hitachi Vantara in 2017, followed by Hitachi Global Digital Holdings in 2018. Also, in 2018, we acquired REAN Cloud, a cloud-related service provider in the United States, and, in 2019, we started collaboration in the digital business with Virtusa, a global IT service company in the United States. We have also established a joint venture with State Bank of India, the largest state-owned commercial bank in India, and are working to develop platforms for cutting-edge next-generation digital payment services. Over the three years covered by the 2021 Mid-term Management Plan, we will invest approximately ¥830 billion into efforts aimed at further strengthening our overseas business and will target further business expansion through M&A and other initiatives.

#### Collaborative Creation of Value within the IT Sector

Lumada plays a core role in our efforts to provide social, environmental and economic value and to achieve social innovation. On the other hand, Hitachi cannot achieve objectives related to the SDGs and Society 5.0 on its own. We believe that these objectives can only be achieved through co-creation with a wide range of customers and partners.

For example, since 2017, we have been supporting the digitization of subsidy payment operations and other financial services offered by the state-owned Vietnam Post. In fiscal 2018, we expanded the scope of this digitization to include social security subsidy and pension payment operations and are currently promoting further expansion on a nationwide scale. Through this co-creation, Hitachi will combine its technologies with Vietnam Post's services to improve the quality of people's lives. We aim to help improve convenience for 6 million subsidy recipients starting in 2020.

Together with our customers and partners, we will form a Lumadacentered ecosystem that enables expertise, resources and skills to be shared while further accelerating social innovation.

# Story of Value Creation in the Energy Sector

The world's energy demand continues to expand against a backdrop of population growth and economic development, as well as social innovation such as the recent expansion in the scale of data centers and the spread of electric vehicles. On the other hand, serious power shortages in developing countries remain a problem and one billion or more people are forced to live without electricity. Furthermore, movements to reduce  $CO_2$  emissions and decarbonize are picking up speed throughout the world in the midst of response to global climate change. Hitachi will respond to these issues with energy solutions that leverage the strengths of "OT × IT × Products" in business fields such as renewable energy and power grids.



## Principal Products and Services FY2018 Revenues ¥456.6 billion" Energy BU 62% Nuclear Power grid (14%) Energy BU 38% Substation, breakers, transformer Nuclear power plant (ABWR) Remotely operated vehicle Services (24%) Fuel transport and storage Control system maintenance casks services Renewable Energy Solutions (16%) Mega solar Others (8%)

\*1 Includes the control systems business, which is posted in IT Sector

- \*2 Developed as operations of International Research Institute for Nuclear Decommissioning. This development was conducted using business expense subsidies provided by the Agency for Natural Resources and Energy in connection with decommissioning efforts and water pollution countermeasures.
  \*3 FY2018 fource except one-time expenses.
- 3 FY2018 figures except one-time expension

# Vision and Targets under the 2021 Mid-term Management Plan

## Providing energy solutions that contribute to a stable energy supply and efficient facility management

The energy business forms the core of the Social Innovation Business and contributes to the achievement of the SDGs. In the Energy Sector, we will provide energy solutions that make use of the strengths of "OT  $\times$  IT  $\times$  Products," such as nuclear power generation systems, renewable power generation systems, power grid systems for receiving and transforming, transmitting and distributing electricity, predictive diagnostics for equipment and remote monitoring services. Providing these solutions will enable us to contribute to a stable energy supply for customers, efficient facility management and the cutting of CO<sub>2</sub> emissions, as we work toward a low carbon or decarbonized society.



The Chugoku Electric Power Company, Inc.'s Shimane Nuclear Power Station Unit 3, under construction



Ultra-high voltage gas insulated switchgear (UHV GIS)

### Growth Strategies under the 2021 Mid-term Management Plan

Previously, in the Energy Sector, we have been converting our business portfolio in response to changes in the market environment surrounding energy while promoting the launch of high-value-added service businesses and the enhancement of the solution business. In the future, the power transmission and distribution market is expected to expand significantly both in Japan and globally against a backdrop of the spread of renewable energy and the expansion of distributed power supply. In response to these projections, we plan to acquire ABB's power grid business during the first half of 2020. Digital technology is indispensable for the achievement of advanced energy management, and power grids are an area in which Hitachi can fully utilize its digital technology. Hitachi's energy business had been primarily concentrated in Japan. However, we will accelerate global business expansion by utilizing the expertise and resources of the power grid business of ABB which has the largest share of the global power grid market. At the same time, we will also focus on strengthening and expanding our solution and service businesses using Lumada. In addition, Hitachi will continue to engage in initiatives aimed at providing a stable energy source through its nuclear energy business while using its advanced technological capabilities and abundant knowledge to contribute to the decommissioning of the Fukushima Daiichi Nuclear Power Plant. Furthermore, we will use these same attributes to promote construction that is compliant with new regulatory standards and aims to support the early resumption of operations at domestic nuclear power plants.

# Enhancement and Expansion of the Solution and Service Businesses Using Lumada

In the energy solution business, we received orders for a management platform for high-temperature parts for gas turbines used in privately owned industrial power generation equipment in 2019. This platform uses Lumada to improve the efficiency of inspection and maintenance work while raising the maintenance capabilities of operators. Following the acquisition of ABB's power grid business, we will aim to develop solutions on a global scale by utilizing its customer base, engineering, technologies and systems.

#### Service business

In 2017, we concluded contracts in the service business with customers. Through these agreements, we will provide solutions that combine power generation systems with integrated energy and equipment management services to provide total solutions for energy conservation issues. Moving forward, we will combine Lumada with our on-site capabilities and digital technologies to develop a variety of service solutions that improve the efficiency of inspection planning upgrade and accelerate maintenance and provide predictive diagnostics aimed at preventing failure, as well as remote monitoring.

In the renewable energy business, Hitachi will strengthen its partnership with Germany-based wind turbine manufacturer Enercon, combining its services and Enercon's wind turbines to develop wind power solution business, which will stabilize operation and reduce maintenance costs.

#### Power grid business

In the power grid business, we will promote the expansion of businesses in industrial fields, including the expanding data centers and electrification of factories and the provision of solutions related to electric vehicles. In the HVDC (High Voltage Direct Current) transmission business, we will conduct active development related to the offshore wind power market and interregional and international DC power transmission. In addition, we will work on the development and deployment of new solutions that fuse DC transmission and digital technologies.

## Further Demonstration of Our Competitive Advantage

Taking advantage of its "OT  $\times$  IT  $\times$  Products" strengths, Hitachi will provide solutions, including power generation and power grid systems, to all customers involved in energy production, distribution and consumption. Furthermore, following the acquisition of ABB's power grid business, which has the largest share in the global market, we will accelerate new innovation by combining its products and software with Lumada.

#### Collaborative Creation of Value within the Energy Sector

#### Promotion of open innovation

Hitachi is promoting industry-academia collaboration in pursuit of new value creation in the Energy Sector. Targeting the realization of Society 5.0, we are working to create a new vision and produce new innovation at the "Hitachi the University of Tokyo Laboratory", which we established with the University of Tokyo in 2015. In the Energy Sector, we are building a platform with the goal of simulating long-term energy supply and demand. These simulations will allow different renewable energy implementation methods to be evaluated and verified, enabling authorities to determine which method is most effective in terms of achieving the goals of the Paris Agreement.

Hitachi will contribute to social, environmental and economic values by expanding its provision of energy solutions that utilize Lumada, including grid and renewable energy solutions, energy management solutions and energy conservation and decarbonization solutions. Furthermore, we will aim to contribute to the management of 25% of the world's substations and the supply of stable energy to about 1.8 billion people.

# Story of Value Creation in the Industry Sector

In the world of industry, the speed and complexity of market changes caused by factors such as climate change and resource shortages are increasing along with the working-age population decreases and global competition intensifies. Under these circumstances, the creation of new services and innovations using advanced digital technologies, such as AI, IoT and big data analysis technologies, is in demand in a variety of different fields. As a result of this demand, the global IoT market is expected to experience a high rate of growth.



#### Vision and Targets under the 2021 Mid-term Management Plan

## "Increasing the efficiency of customers' production and processing systems," "providing safe and secure water environments" and "reducing CO<sub>2</sub> emissions"

In the Industry Sector, we aim to become the best solution partner for customers in the industrial field by utilizing our strengths in "Products  $\times$  OT  $\times$  IT." Furthermore, we will create social and environmental value by "increasing the efficiency of customers' production and processing systems" through the provision of solutions that contribute to productivity and quality improvements in the manufacturing and distribution fields; "providing safe and secure water environments" to 70 million people per day worldwide using water and sewage infrastructure and seawater desalination technology; and "reducing CO<sub>2</sub> emissions" through energy-saving products.

#### Growth Strategies under the 2021 Mid-term Management Plan

As the world changes and customer needs diversify and become more high-level, we face various issues that arise between the workplace, management and the supply chain. In the Industry Sector, we recognize these issues as "boundaries." By connecting cyber spaces and real spaces using digital technology, we will solve "boundary" issues and provide total

### **Principal Products and Services**



\*1 The impact of a large-scale overseas Engineering, Procurement, Construction (EPC) project of the Industry & Distribution BU has been excluded. Figures for Hitachi Plant Services and Hitachi Plant Mechanics, which were transferred in FY2019 from the Industry & Distribution BU to the Water & Environment BU and Hitachi Industrial Products, respectively, were revised retroactively. Figures for each subsegment include intersegment transactions. Figures for each BU include the control systems business, which is posted in the IT Sector.

\*2 Air conditioning and water treatment facilities for factories, social infrastructure, etc.

seamless solutions that achieve overall optimization. The keys to achieving these goals are the Industry Sector, which is a business entity that simultaneously possesses products, OT and IT; the use of Lumada and robotic SI, which drives digital innovation; and the construction of value chains that range from management to workplace and from procurement to manufacturing while spanning across fields such as logistics, sales, services and maintenance. With these keys in place, we will aim to become the best solution partner for customers in the field of industry.



Vision of the Industry Sector

\*3 Supply Chain Management (SCM)

\*4 4M: huMan, Machine, Material and Method

## Collaborative Creation of Value within the Industry Sector

**Total Seamless Solutions that Solve "Boundary" Issues** In the Industry Sector, we will provide total seamless solutions while focusing on four next-generation solutions (manufacturing, logistics, maintenance and utility) and connected products, thereby helping to improve the overall value of our customers' businesses.

One Lumada solution contributing to the achievement of these goals is the digital twin solution, which was launched in November 2018. The solution facilitates AI analysis and simulation by using an advanced data model to link manufacturing workplace OT and IT data in cyber space, supporting the optimization of the entire production process.

Data Modeling of Business Operations and 4M and the Optimization of Production Processes through Digital Twin



Conceptual diagram of the digital twin solution

One example of the application of Lumada at manufacturing workplace is our collaboration with the AMADA Group, a major metalworking machinery manufacturer. After delivering servo motors used in pressing machines, we constructed a tooling IoT production line by applying robotics in 2017. We also contributed to the improvement of productivity and operational efficiency in 2019, when we built Assembly Navigation System with the goal of upgrading manufacturing workplaces.



Assembly Navigation System at the AMADA Group's Fujinomiya Works

Furthermore, because of the importance of connected products in the Industry Sector, in 2017, we worked to increase our global strength in terms of connected products by acquiring Sullair, an air compressor manufacturer in the United States.

# Strengthening of OT Area through the Acquisition of the Robotic SI Business

In the Industry Sector, we believe that the manufacturing industry will evolve from "manufacturing through people and machines" to "manufacturing through people and robots" before progressing to "manufacturing that connects management with the workplace." Under these circumstances, we have decided that OT areas related to the Robotic SI business, which accumulates field data, will become increasingly important in addition to rising needs for advanced and optimized manufacturing conducted using robots. In accordance with this judgment, we reached acquisition agreements in 2019 with JR Automation, a United States-based robotic SI business operator, and Japan-based KEC.

The industrial world is facing a growing need for automation due to labor shortages and rising labor costs, and the robotic SI market is expected to grow rapidly as a result. In the Industry Sector, we will work to expand the Robotic SI business on a global scale by mutually utilizing the resources of JR Automation, KEC and Hitachi Industrial Equipment Systems and the research and development capabilities of Hitachi.

In the Industry Sector, we will globally develop Lumada solutions that utilize digital technology based on 4M data obtained workplace from customers by acquiring technology, expertise and customer bases from these two companies in the robotic SI market. This will enable us to contribute to the improvement of our customers' management and to help raise the overall values of their businesses through seamless collaboration between workplace and management.



KEC's Robotic SI business

In Pursuit of Further Growth in the Industry Sector In the Industry Sector, we will strengthen and expand total seamless solutions that leverage the strengths of "Products × OT × IT" and accelerate and enhance global expansion in pursuit of further growth. Furthermore, we will aim to become a business entity that provides high added value by expanding recurring business<sup>-5</sup> and improving capital efficiency.

\*5 Cycling business that exists after sale service market and continual replace demand such as replacement parts.

# Story of Value Creation in the Mobility Sector

Global population is growing and urbanization is advancing rapidly, so that the proportion of people living in urban areas is expected to rise to 68% by 2050, from around 55% today. In addition, the negative impact from climate change is causing environmental, economic and social damages. Against this backdrop, in the mobility realm, the demand for clean and highly efficient mobility solutions such as one for faster and more environmentally friendly intercity transportation and alleviation of dependency on car use within city centers, and smart solution to manage the people flow in high-rise buildings.



#### Our Ideal under the 2021 Mid-term Management Plan

## Providing People with Safe, Secure and Comfortable Transportation Services

In the Mobility Sector, we deliver social value by providing people with safe, secure and comfortable transportation services, and products and services for urban spaces such as buildings. At the same time, we create environmental value by realizing transportation services that have a low environmental impact and contribute to, for example, reducing  $CO_2$  emissions.

#### Growth Strategies under the 2021 Mid-term Management Plan

In the Building Systems Business Unit, we expand technologically advanced and competitive products and services, which include the world's fastest elevator (according to our research as of September 2019) with the speed of 1,260 meters per minute, and Lumada solutions leveraging Hitachi Group's robust resources on digital technologies such as Internet of Things (IoT) and artificial intelligence.

Meanwhile, in the Railway Systems Business Unit, we realize the differentiation from other competitors by providing total solutions spanning the manufacture of rolling stock to operational control, IC ticketing and seat reservation system, and solutions utilizing IoT and digital technologies for operation optimization, driverless operation and digital ticketing.

### Building Systems Business Unit

The market for elevators and escalators (E&E) is expected to continue expanding steadily. Particularly high rates of growth are expected in the Asian market, especially in India, which has the world's second largest market scale. In the largest market, China, the expected growth area has been shifted from new installation to maintenance and modernization of E&E. In Japan, the demand for E&E modernization is expanding and the expectation for new solutions leveraging digital technologies for workers and tenants in buildings is increasing.

Against this backdrop, the Building Systems Business Unit has achieved growth globally based on its sophisticated products and technologies, which are exemplified by the top share (Hitachi research) of order received in fiscal 2018 by unit in China, the world's largest market for new installation of E&E, accounting for more than 50% of the total. Going forward, we plan to combine manufacturing and sales of E&E with building services to realize business growth and increased profitability. To this end, we are stepping up investment centering on digitalization. Specifically, we are accelerating investment in a global control center that functions as a basement for providing leading-edge building services, such as a sophisticated remote monitoring service which utilizes digital technologies and a solution which realizes efficient and comfortable movement by using sensors in buildings and analyzing the flow of people.

In addition, in Asia and Middle East, where demand for new installation of E&E is surging, we are deploying our sales and service bases, and expanding our business through maximizing the capacity utilization of factories in China and utilizing sophisticated maintenance and modernization technologies which we have developed in Japan.



### Railway Systems Business Unit

Demand in the railway market is expected to expand throughout the world thanks to economic development. Growth, mainly for rolling stock, signaling system and control system, is expected in Europe, Middle East, Africa and Americas.

In fiscal 2018, the Railway Systems Business Unit set records for rolling stock deliveries and orders, revenue and adjusted operating income ratio, highlighting our efforts to build a firm global business platform. In the future, we intend to move forward with rolling stock, signaling system and turnkey business as core businesses. We will also concentrate investment in digital technologies and IoT to enhance our competitiveness further. We are encouraging our Dynamic Headway, which optimizes operations based on demand, autonomous operation, and digital ticketing utilizing location information and other data to realize automatic payments via smartphones. In addition to further reinforcing services and solutions such as these, we will augment the value for customers and provide safe, secure and comfortable transportation services.

In January 2019, we acquired Ansaldo STS (now Hitachi Rail STS), an Italian leader in railway signaling systems, converting the company to a wholly owned subsidiary and delisting it. In addition to further enhancing our strength in the signaling and turnkey businesses, we expect this move to generate synergies through organizational optimization and increased production efficiency, allowing us to further expand our global operations.



Value Co-Creation in the Mobility Sector

In the Building Systems Business Unit, we are working on enhancing our products and services through the analysis of the data gathered from elevators, escalators and building equipment, increasing added value of maintenance services such as sophisticated remote monitoring and control, providing data to building owners and managers, and creating new businesses leveraging Lumada.

By positioning the global control center as a core competence and deploying new solutions leveraging Lumada to the customer base we have built in E&E business, we aim to develop our business further and realize the expansion of building service business other than E&E and differentiation from manufacturers specializing in E&E.

In the Railway Systems Business Unit, for Denmark's Copenhagen Metro we are working on the maximization of transportation capability, congestion alleviation and cost reduction through detecting demand based on the number of people waiting at station platforms and realizing autonomous and flexible operation. With core products such as this, we aim to expand business in the urban transport market in Europe, where business volume is the highest in the world. Demand is also expected to flourish in Americas. There, we aim to secure growth opportunities by utilizing existing manufacturing bases and leveraging our market presence in services and maintenance.

In the Mobility Sector, through social innovation businesses such as these, we will provide people around the world with products and services that are safe, secure, comfortable and environmentally friendly.

# Story of Value Creation in the Smart Life Sector

While global economic development continues, societal issues such as global warming, traffic jams and accidents, aging and nursing care have become more prominent. Progress is being made on the development of technologies aimed at resolving these issues, including electrification, autonomous driving, AI, robotics and personalized medicine. This progress is giving rise to a variety of business opportunities. We are confident that IoT solutions related to daily life will be integrated within smart cities and will comprehensively support the lives of people living in urban areas. In fact, the global smart city market is expected to reach \$2 trillion or more in 2025.



Adjusted operating income (¥ billion)/ Adjusted operating income ratio (%) ore than 60% More than 10%

More than 210.0



### Vision and Targets under the 2021 Mid-term Management Plan

# Accomplishing business structural reform in support of our next stage of growth through digital technology

We have promoted business structural reforms in the Smart Life Sector over the past several years, including the deconsolidation of the airconditioning systems business and the sale of the car navigation and automotive battery businesses. During the period covered by the 2021 Mid-term Management Plan, we will accomplish business structural reform by improving profitability through business replacement and operational restructuring. At the same time, we will establish a business model for Lumada and develop our digital service business, leading us into our next stage of growth.

## Growth Strategies under the 2021 Mid-term Management Plan

# Significant Improvement in Profitability through Business Replacement and Operational Restructuring

#### Automotive Systems business

Chief Executive Officer Koch assumed his position at Hitachi Automotive Systems, Ltd., during fiscal 2018, ushering in structural reforms. He promoted the classification of core and non-core

# Principal Products and Services



\* The healthcare and related business includes revenues of healthcare-related businesses of Hitachi High-Technologies Corporation ("Hitachi High-Tech")

businesses, establishing the powertrain, chassis and safety systems businesses as core businesses. Meanwhile, the energy station, car navigation, automotive lithium-ion battery and cargo handling materials businesses were sold as non-core businesses.

In terms of core business products, we will form strategic alliances and conduct M&A with the goal of achieving one of the world's top three market shares and improve profitability by pursuing economies of scale in both procurement and manufacturing. As a first step toward these goals, we decided to acquire Chassis Brakes International in June 2019 in an effort to strengthen the competitiveness of the chassis and safety systems businesses. We will expand the safety systems business, which integrates electric steering and suspensions, while giving due consideration to the market environment, where the shift to electric brakes is under way.

Competition in product development utilizing electrification and automation technologies is intensifying both in the automotive system business and throughout the industry. For this reason, rising research and development costs are proving to be a primary cause of reduced profitability. As a corporate organization, the Research & Development Group of Hitachi acts as a common foundation for research and development, reducing investment overlap between businesses and improving efficiency.

In addition, we are promoting the use of Lumada customer cases with the goal of streamlining operations such as marketing, design, procurement, production and quality improvement using digital technologies.

We will achieve our target adjusted operating income ratio of more than 10%

by boosting business efficiency through scale expansion, raising research and development efficiency and improving operations through the use of Lumada.

#### Smart Life & Eco-friendly Systems business

The Smart Life & Eco-friendly Systems business, which has a long history of developing products from consumer perspectives, is a core business aiming to improve the quality of people's lives in the Smart Life Sector. We will create solution businesses using "design thinking," which involves coming up with methods for improving our lives without being shackled by preconceptions.

In April 2019, Hitachi Consumer Marketing, Inc., which had been in charge of home appliance sales, merged with Hitachi Appliances, Inc., which had been handling design and manufacturing. This merger led to the establishment of Hitachi Global Life Solutions, Inc., which is venturing into challenging new fields.

We are already launching a lineup of new connected products, including robotic vacuum cleaners and refrigerators that can be controlled and managed using smartphones. Furthermore, we are accelerating efforts aimed at creating solution businesses, launching services such as "Doshiteru," a monitoring service for elderly individuals who live alone, and "Peloridge," a smartphone app for sharing experiences and emotions related to food.

In addition to expanding solution businesses, it is essential that we improve business efficiency. In October 2015, Hitachi's air-conditioning systems business was merged with the air-conditioning systems business of Johnson Controls in the United States, creating Johnson Controls–Hitachi Air Conditioning, an unconsolidated subsidiary of the Hitachi. By combining the sales channels, technical capabilities and research and development of these two businesses, we strengthened the global competitiveness of our air-conditioning systems business. Additionally, in the home appliances business, we will promote collaboration with strategic partners overseas under a flexible capital policy and conduct business operations with an emphasis on investment efficiency.

#### Healthcare business

Many hidden and unmet needs exist within the healthcare business field, and high rates of growth are expected to continue in the future. On the other hand, technology in the existing diagnostic imaging systems business has matured, and the business has entered a stage of competing for business scale expansion. Accordingly, selection and concentration are becoming increasingly important.

The strength of the Hitachi Group in this field lies in its measurement and analysis technologies, which originated from research and development concerning electron microscopes that was continuously conducted from 1942, when the Group's Central Research Laboratory was initially established. All of the major healthcare products that we have developed so far, including products related to X-ray and ultrasonic diagnostics, MRI, CT, mass spectrometry, DNA sequencing, bioimmune analysis and optical topography, were all created from these technologies. Our basic strategy is to create innovative healthcare solutions by combining AI with our measurement and analysis technologies. Hitachi will develop healthcare business on the basis of a measurement and analysis technology portfolio, which the Research and Development Group of Hitachi and Hitachi High-Technologies have built.

Hitachi's top priority in the healthcare business is to minimize the invasiveness (generally, invasiveness refers to stimuli that can disrupt the homeostasis of the body's internal environment) of diagnosis and treatment. In the medical treatment field, we are focusing on cancer treatment solutions using less invasive radiation. In accordance with this focus, we integrated Mitsubishi Electric Corporation's particle therapy systems business in June 2018. Moving forward, we will continue to strengthen investment related to this business, including the development of technologies that greatly reduce equipment costs, with the goal of expanding the use of particle therapy.

#### Establishment of a Lumada Business Model

Machine data is collected via the Internet from Smart Life Sector products, including connected cars, connected home appliances and healthcare equipment. Using Lumada's analytics and AI to process this big data, we can create new economic value by automating product operation, as has been done in the case of autonomous driving systems.

Once devices that support our daily lives are automated and various solutions are provided, subsequently these devices are integrated into smart cities and a new data economy is created. Under the 2021 Midterm Management Plan, we will invest approximately ¥30 billion in the Smart Life Sector, focusing on the smart city market in Asia, a region that continues to urbanize. Furthermore, we will aim to secure ¥100 billion in orders of the Lumada business.

### Collaborative Creation of Value within the Energy Sector

Focusing on the three themes of health, safety and comfort, the Smart Life Sector creates social, environmental and economic values by creating communities that are easy to live in, which helps improve the quality of people's lives. We also provide particle therapy systems, allowing people to live normally while receiving cancer treatment, and contribute to the elimination of fatal traffic accidents through autonomous driving technologies. Furthermore, we will contribute to the prevention of global warming by reducing the CO<sub>2</sub> emissions of our products through electrification and IoT technology.