



# IHI Integrated Report 2017

**IHI Corporation**



LIFTING DREAMS TO THE SKY.

CREATING OUR OWN FUTURE.

MAKING INDUSTRIES STRONGER.

Epsilon rocket: ©JAXA, International Space Station: ©JAXA / NASA

International Space Station

TOKYO SKYTREE®

Hotpress

GEEnx turbofan engine

Boeing 787

Turbocharger

Space station supply vehicle

Turbo compressor

Jib climbing crane

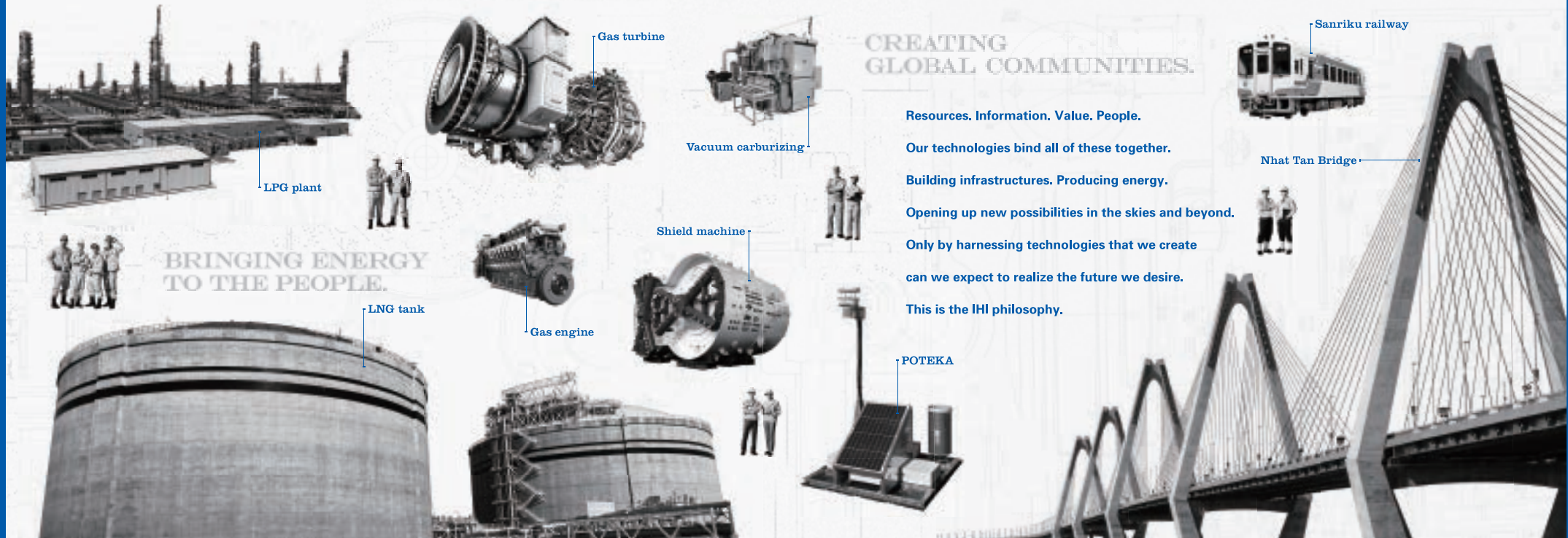
Z-PELLER®

CVD Coating equipment

Epsilon rocket

Calender

**IHI** Realize your dreams



CREATING GLOBAL COMMUNITIES.

BRINGING ENERGY TO THE PEOPLE.

Resources. Information. Value. People.

Our technologies bind all of these together.

Building infrastructures. Producing energy.

Opening up new possibilities in the skies and beyond.

Only by harnessing technologies that we create can we expect to realize the future we desire.

This is the IHI philosophy.

Sanriku railway

Gas turbine

Vacuum carburizing

Nhat Tan Bridge

LPG plant

Shield machine

LNG tank

Gas engine

POTTEKA

# INDEX

## Profile

What is IHI? P2~

IHI's Value-Creation Process P4

## Strategy - Creating Value for Businesses and Society -

Message From the CEO P6~

Boosting Profitability Through Enhancement  
of Project Execution System P11

Financial and CSR Highlights P12

Business Overview P13~

Business Strategies P15~

## Challenge - Creating Value for the Future -

A Future Based on Technologies P24~

A Future Based on Interconnections P29~

## ESG Management - The Foundation of Sustainable Growth -

Directors and Audit & Supervisory  
Board Members P33~

Corporate Governance P35~

Human Resources P39~

Supply Chain Management P41~

Environment P43~

Compliance P45

Risk Management P46

CSR Management P47~

## Financial Information

Financial Highlights P51~

Consolidated Balance Sheets P53

Consolidated Statements of Income / P54

Consolidated Statements of Comprehensive Income

Consolidated Statements of Changes in Equity P55

Consolidated Statements of Cash Flows P56

Corporate Data P57

## What is IHI?

IHI's corporate philosophy is "Contribute to the development of society through technology" and "Human resources are our single most valuable asset." Our corporate slogan, "Realize your dreams," expresses the IHI mission of leveraging technology and human resources to help humankind achieve its greatest aspirations, a role we have been fulfilling for more than 160 years.

We would deeply appreciate your support and encouragement as we strive to grow sustainably, enhance corporate value and strengthen trust among our stakeholders.

### Corporate Philosophy

Contribute to the development of society through technology  
Human resources are our single most valuable asset

### Group Vision

The IHI Group seeks to solve the various environmental, industrial, social, and energy related problems of the 21st century, through using engineering expertise to focus on "Monozukuri" technology. In striving towards these goals, IHI is becoming a global enterprise offering the safety and security for the benefit of both the environment and humanity. "Monozukuri" Technology means the technology used to improve the competitiveness of products and services offered, by strengthening the capabilities required in development, design, supply, manufacture and construction.

# Realize your dreams

### Editorial Policy

This report presents important information on IHI's policies and strategies, and the foundations that support them, with a special focus on the Group Management Policies 2016 business plan. We use this report as a tool for communicating with stakeholders, aiming to increase our corporate value.



For more detailed information,  
please refer to these websites

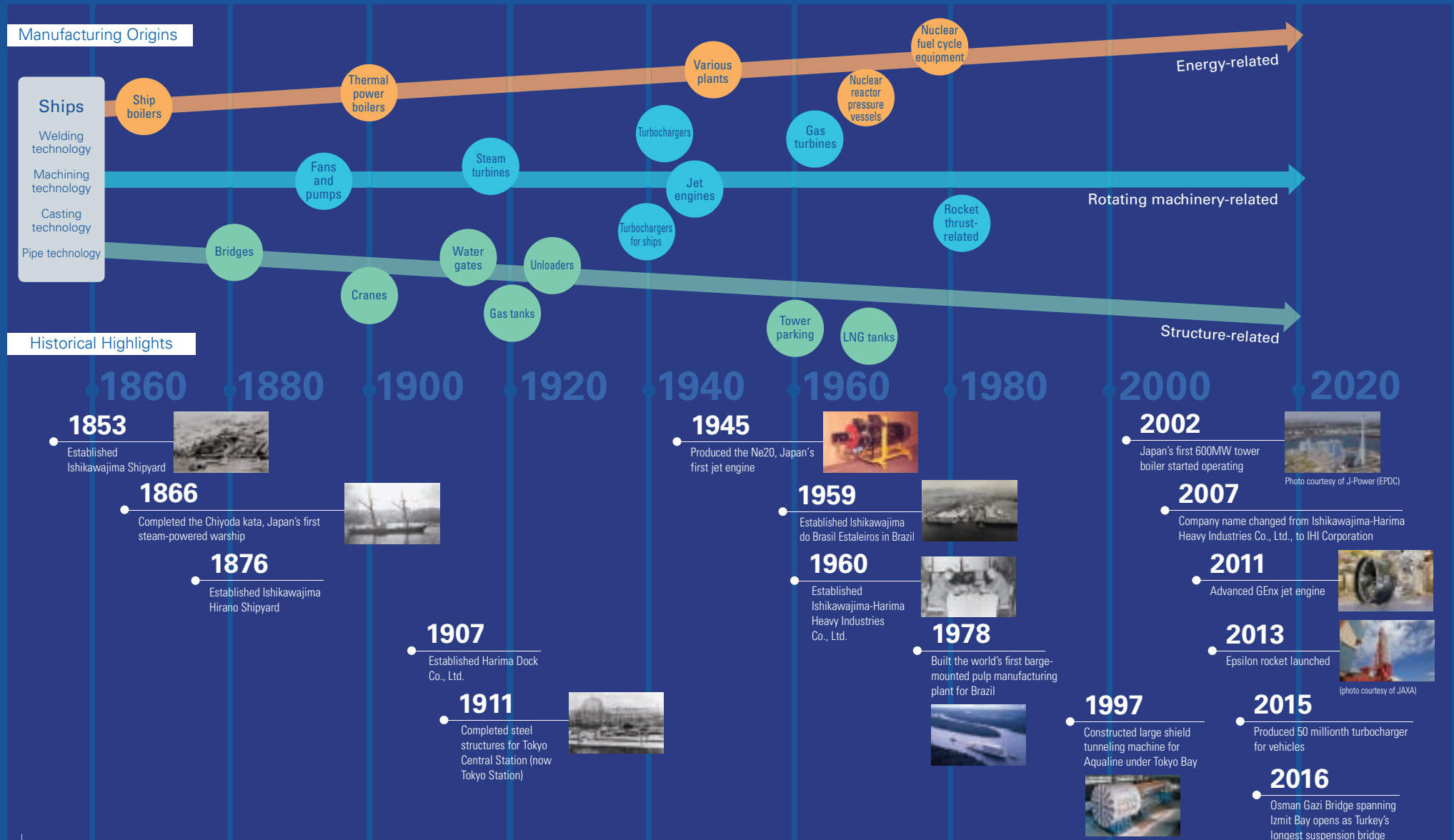
Financial: <https://www.ihico.jp/en/ir/>

CSR: <https://www.ihico.jp/csr/english/index.html>

# What is IHI?

The history of IHI is also the history of Japan's heavy industry. Our technologies originated in shipbuilding, then expanded into the manufacture of ship machinery and production machinery, and eventually broadened further to include the construction of plants for various industries and public infrastructure.

Over many decades, we have established a rich tradition based on our philosophy of "Contributing to the development of society through technology."





# IHI's Value-Creation Process

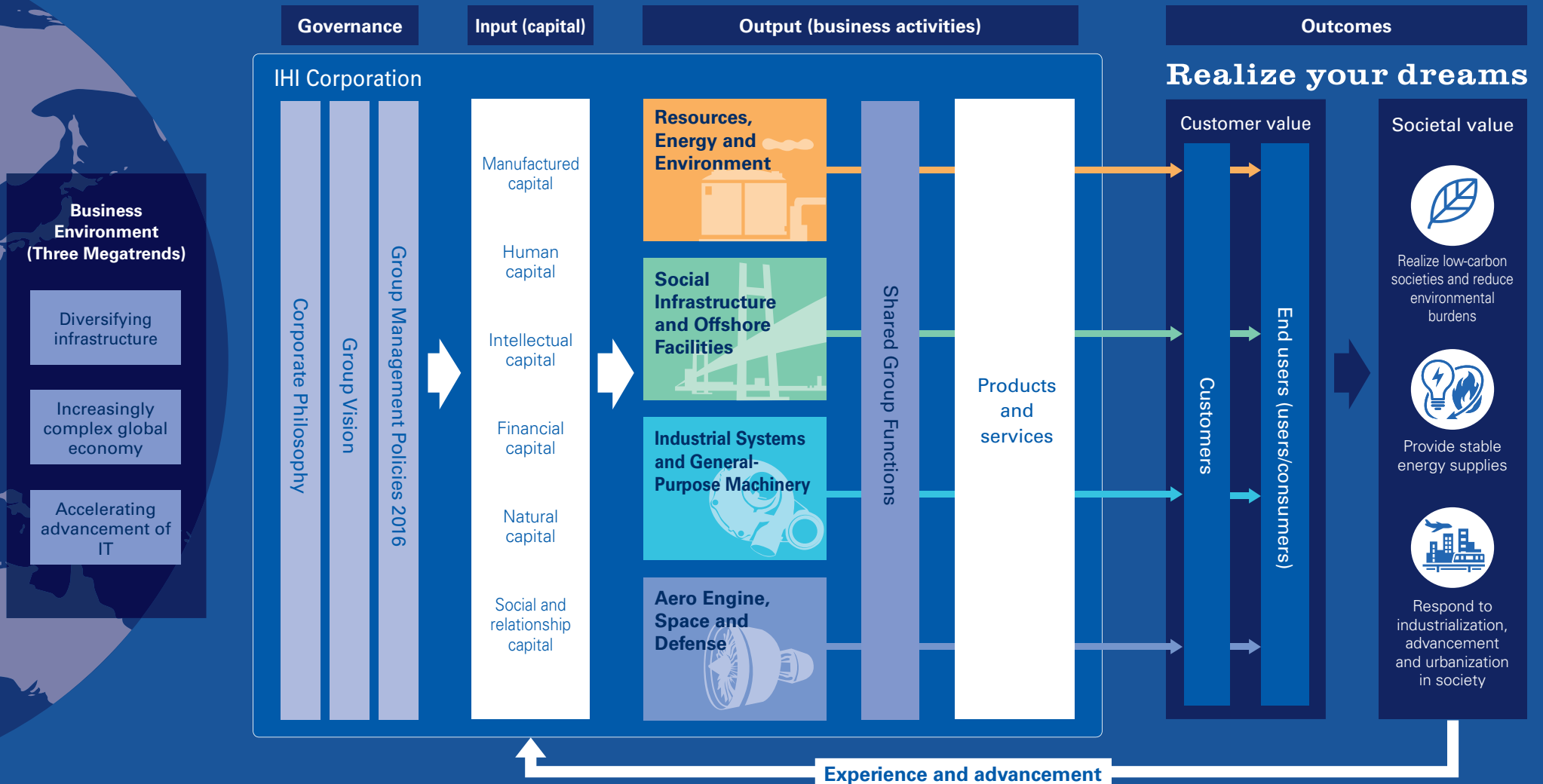
This report is a reflection of the IHI value-creation process shown in the following chart.

IHI's Group Vision, which is based on the company's corporate philosophy, is the long-term roadmap for IHI's path into the future.

In our value-creation process, we utilize six forms of capital (input) to implement the business strategies in our Group Management Policies 2016 targeting our four global business areas, ultimately to deliver outstanding products and services (output).

As the result, IHI will continue to create value (outcomes) for customers and society based on its corporate slogan "Realizing your dreams."

We will work tirelessly to achieve sustainable long-term growth by transforming our experience and value offerings into enhanced capital assets.



# Strategy

- Creating Value for Businesses and Society -

Message From the CEO **P6~**

Boosting Profitability Through  
Enhancement of Project Execution  
System **P11**

Financial and CSR Highlights **P12**

Business Overview **P13~**

Business Strategies **P15~**

- Resources, Energy and Environment
- Social Infrastructure and Offshore Facilities
- Industrial Systems and General-Purpose Machinery
- Aero Engine, Space and Defense

## Recovering and reforming the company to create new value

We began our 3 year corporate strategy “IHI Group Management Policies 2016” last year to enhance and strengthen our earnings foundations.

In 2017, the middle year of this corporate strategy, we are focusing on 2 measures, “Recovering Trust” and “Structural Reform” for acceleration.

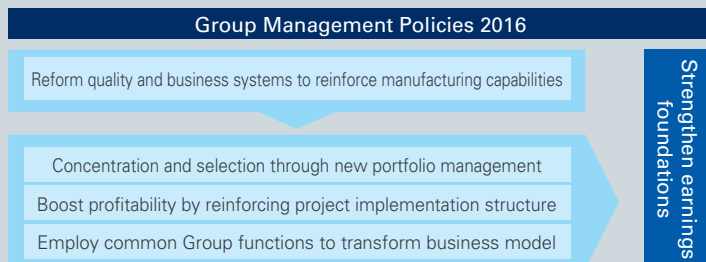
IHI Group will satisfy Stakeholders through new value creation by utilizing our dual strengths of technology and human resources.



**Tsugio Mitsuoka**

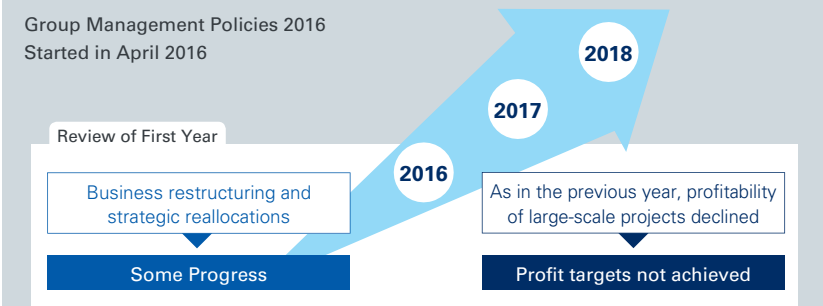
IHI Corporation  
President  
and Chief Executive Officer

### Overview of Group Management Policies 2016



Targets (FY2018)	
Operating margin	7%
ROIC	10%
Debt-to-equity ratio	0.7x or less

### Group Management Policies 2016 Started in April 2016



## FY2016 Review Efforts to Strengthen earnings foundations

In April 2016, IHI introduced a new medium-term business plan, “Group Management Policies 2016,” which included launching initiatives to “Strengthen earnings foundations”.

Under this strategy, we achieved improved results in our business area of Industrial System, General Purpose Machinery, Aero Engine, Space and Defense by accelerating “Business Restructuring” and “Concentration and Selection within Businesses” in 2016. Since we recognized issues with large-scale projects in Resources, Energy and Environment, and Social Infrastructure and Offshore Facilities are causing

a failure to meet Stakeholders’ expectations, we will place a top priority on strengthening our project management and risk management capabilities to regain trust in 2017.

### “Recovering trust and drive reforms through effective communication”

In FY2017, we will launch initiatives to make all of our Business Areas profitable and simultaneously accelerate efforts to achieve targets under the plans outlined in Group Management Policies 2016.

These efforts are summarized in our new slogan, “Recovering trust and drive reforms through effective communication.” “Recovering trust” is about winning

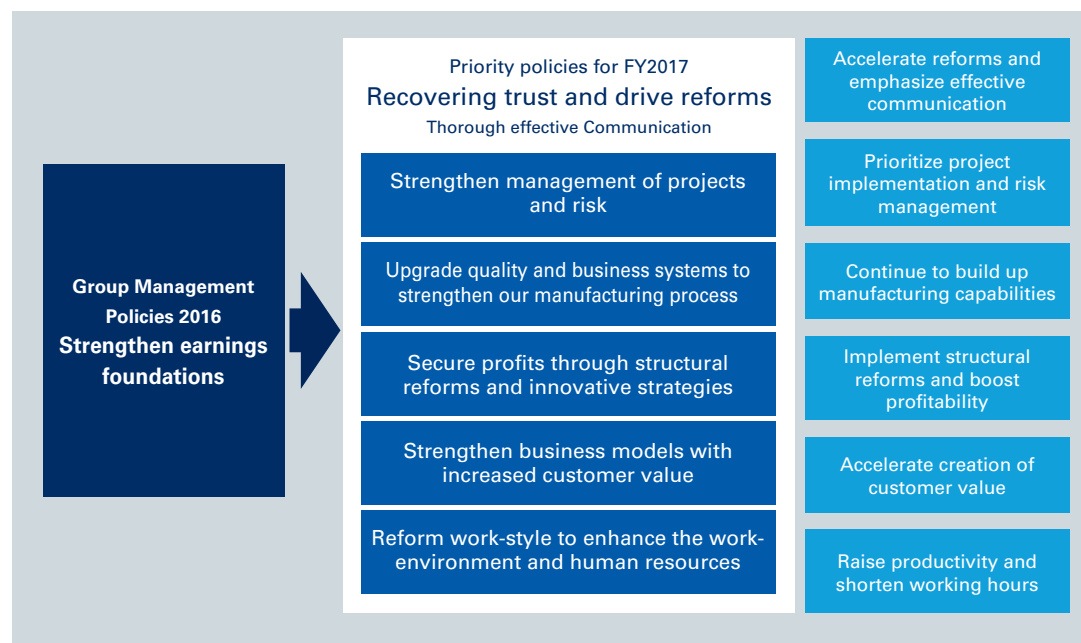
back our stakeholders’ confidence, which we aim to do by stemming the declining profitability of large projects and thereby stabilizing our profit base. “Drive reforms” is our determination to achieve performance targets by accelerating IHI’s Business restructuring.

Among the five key priority policies for FY2017, the most critical is strengthening management of projects and risk management. Since FY2016, we have steadily enhanced how we review new business proposals and investments, and have adopted these initiatives to manage new projects more effectively. Moreover, to curtail the declining project profitability, we aim to better ascertain the specific frontline needs and issues of all projects by using more thorough methods of communication across all related processes. Such

Achievements of Group Management Policies 2016

	FY2016 (Results)	FY2017 (Outlook)	FY2018 (Targets)
Net Sales	¥1,486.3 billion	¥1,550.0 billion	-
Operating Income (Operating Margin)	¥47.3 billion 3.2%	¥65.0 billion 4.2%	- 7%
Ordinary Income	¥22.0 billion	¥57.0 billion	-
Profit Attributable to Owners of the Parent Company	¥5.2 billion	¥23.0 billion	-
ROIC <sup>1</sup>	5.0%	6.5%	10%
D/E Ratio <sup>2</sup>	1.10	-	0.7x or less
Dividends	-	¥6 per share <sup>3</sup> (¥3 interim, ¥3 year-end) (forecast)	-
Exchange Rate	¥108.27/US\$	¥105/US\$	¥115/US\$

1: ROIC (Return On Invested Capital) = (Operating income + Interest and dividend income) after tax / (Owners’ equity + Interest-bearing debt)  
 2: D/E ratio = Interest-bearing debt / Total net assets  
 3: Although a reverse stock split of common shares in the ratio of 1 for 10 was implemented effective October 1, 2017, this figure is calculated without regard to the split.





# Message From the CEO

**Strategy**  
- Creating Value for Businesses and Society -

**Challenge**  
- Creating Value for the Future -

**ESG Management**  
- The Foundation of Sustainable Growth -

communication also will be deployed for all ongoing projects, including in upstream design and sales, as well as manufacturing and construction. The emphasis will be to swiftly and accurately identify critical issues and risks and then implement effective countermeasures to ensure that projects proceed smoothly. By consistently adopting this approach when devising countermeasures and implementing initiatives, we are confident that we will be able to fulfill the performance goals set for FY2017.

In addition, we are aware that our business sites are constantly changing. New issues or problems can arise at any given moment, requiring a swift and effective response. To maintain high profitability, we will implement structural reforms focused on making IHI leaner and more flexible. Even with critical issues occurring within individual Strategic Business Units (SBUs)\*, effective communication across all SBUs will lead to swifter resolution and reduce the risk of recurrence. Global-optimization and group-optimization

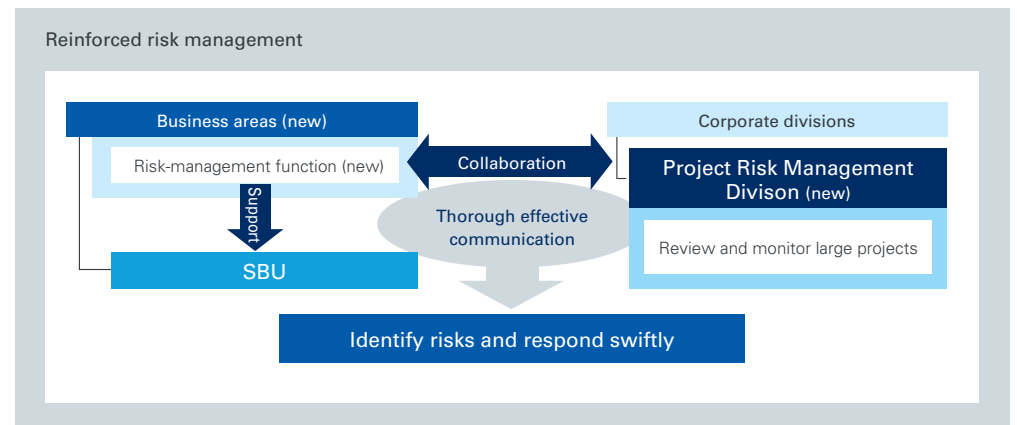
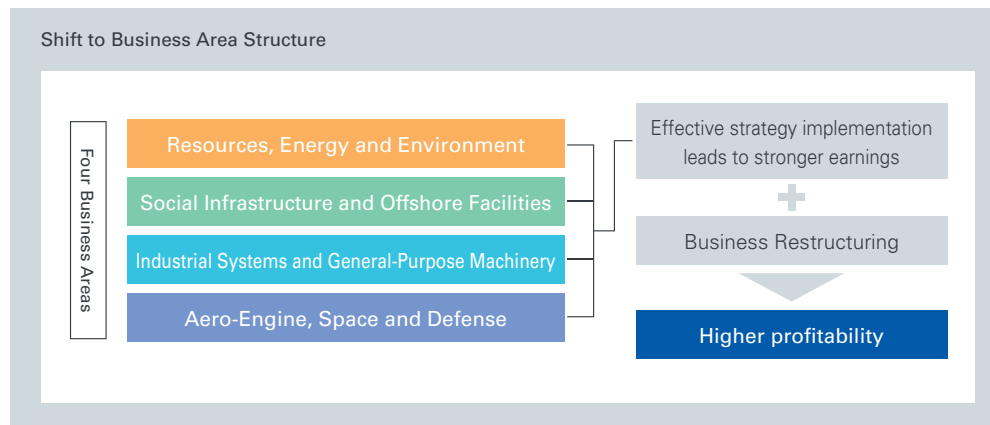
initiatives will enable us to effectively overcome even unpredictable challenges that lay ahead. In the area of human resources, we have made working-style reform a priority and are achieving steady progress to provide a system where all employees can maximize their abilities and perform an increased role. We are confident that these initiatives will prove vital to IHI's medium-to-long-term growth.

\* Business units in operating in respective Business areas

## Shift to Business Area Structure system

With the goal of achieving the business targets of our Group Management Policies 2016, and to ensure sustainable growth over the medium to long term, from this fiscal year we have shifted to a Business Area Structure system with highly experienced personnel in charge of each business. Operations have been reorganized, shifting from a single business headquarters with eight operational

"sectors" to a structure based on four Business areas, namely, Resources, Energy and Environment; Social Infrastructure and Offshore Facilities; Industrial Systems and General-Purpose Machinery; and Aero Engine, Space and Defense. To achieve both global and group optimization and flexibly respond to change, strategies are now planned and executed at the Business Area level, which is above the individual-business level. Management supervision and cross-



# Message From the CEO

Business Area support will enable each SBU to more effectively execute strategies and achieve profit targets. Furthermore, fully embracing the major challenge of managing risk more thoroughly, each Business Area now has its own risk-management function, and provides related support to our design and manufacturing departments. In addition, a new common-function Project Risk Management Department set up within our headquarters will help to identify risks and respond swiftly by liaising between headquarter divisions and each Business Area.

## Promoting “Business Restructuring”

Business Restructuring is being implemented to enable each business to respond more effectively to change and to boost profitability. For example, after-sales services market for civilian aero-engines are performing well. However, the increased volume of new engines shipped is proving to be a burden due to



higher costs in the initial stage of mass production, so profits in this sector are expected to begin to plateau this year. Manufacturing lines have been added to meet increasing demands and initiatives are being swiftly implemented to reduce the cost of mass-producing these new engines. Going forward, we will continue to consider needs to restructure our production bases and invest in the development of new technologies for materials and manufacturing.

In our vehicular turbocharger business, we plan to centralize production at our bases in Thailand and Europe, and build a global network to serve the fast-growing markets of China and North America. To support Business Restructuring in all Business Areas, allocation of key personnel and equipment resources will be optimized throughout the group.

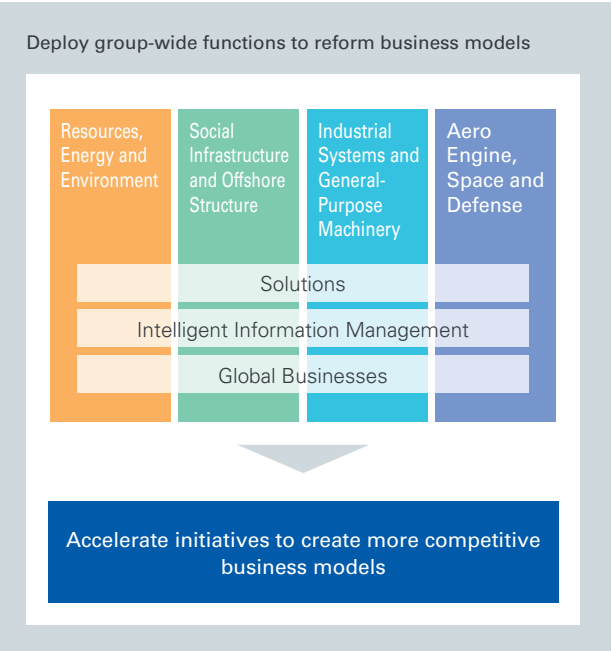
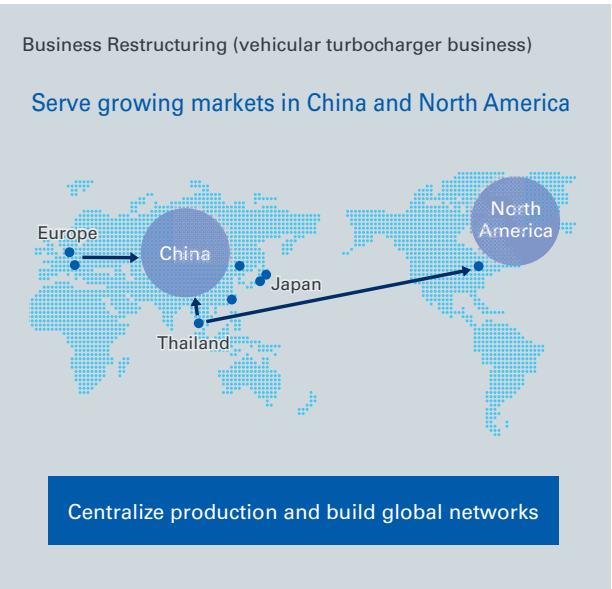
## Global Contribution

To continue advancing as a global company, IHI provides diverse products and services suited to local needs and preferences in markets worldwide. As highlighted by Sustainable Development Goals (SDGs) and the Paris Agreement, there are many global issues requiring immediate solutions. The IHI Group needs to marshal its various strengths to tackle these issues. Given the diversity of IHI’s businesses, technologies, human resources and global networks, the company’s products and services are used widely across global markets. Sometimes this can encourage expectation for IHI to contribute to local economies by developing

**Strategy**  
- Creating Value for Businesses and Society -

**Challenge**  
- Creating Value for the Future -

**ESG Management**  
- The Foundation of Sustainable Growth -



# Message From the CEO

**Strategy**  
- Creating Value for Businesses and Society -

**Challenge**  
- Creating Value for the Future -

**ESG Management**  
- The Foundation of Sustainable Growth -

large-scale infrastructure, even in ways that exceed our regular business scope.

For example, when I toured Myanmar in May 2017, a cabinet minister requested IHI to utilize our numerous resources to make specific proposals to support Myanmar's national development plan.

This is one of many ways in which stakeholders expect IHI to help stimulate cities, countries and regions.

To meet these expectations, we aim to create innovative business models not chained to past perceptions, and to communicate effectively with customers to flexibly and swiftly respond to their needs.

In this way, we expect to provide customers with greater value.

## Sustainable Growth through "People" and "Technology"

As stated in the company's corporate philosophy, IHI's greatest strengths are its people and technologies. In our corporate slogan "Realize Your Dreams", "Your" refers to both customers and all IHI Group employees. In other words, our ultimate mission is to unite and work together with people across the world to help realize their dreams as well as our own. Through close cooperation with customers and stakeholders, we aim to create high quality and value that brings users great joy. At the same time, this aspiration is crucial to IHI's development and creation of innovative new business models.

Looking ahead, we also aspire to meet expectations and contribute to global development by shaping the dreams of future customers and stakeholders. The year 2053 will mark our 200<sup>th</sup> anniversary. Taking a long-term perspective, we have to continue to contemplate what sort of company we need to be, and this is a part of our promise to continue moving forward and to offer new value.

This Integrated Report, an important tool for communicating with stakeholders, introduces the background and processes leading to IHI's contributions to global society. Direct feedback from readers is invaluable, so please feel free to let us know your opinions on this report.

## Realize your dreams

IHI designs and delivers progressive engineering solutions for people and the planet.

Our heritage is built upon a culture of striving for the highest standards in every facet of our business, and a commitment to contribute to global development through technology.

We work alongside customers, stakeholders and fellow employees to deliver outcomes that positively affect the world and its inhabitants.

Not only does this lead us to achieve greater outcomes, it also makes good commercial sense. Fundamentally speaking, IHI uses forward thinking to find lasting solutions to some of the world's most challenging problems.

IHI Group. Realize your dreams.



## Targeting steady project execution



Executive Officer  
General Manager of Project Risk Management Division

### Mitsutoyo Yoshida

#### New Project Risk Management Division

IHI recorded significant losses in its large-scale projects from FY2014 to FY2016, which came as a disappointment to stakeholders. To avoid repeating such undesirable outcomes, IHI strengthened its risk management system by establishing the Project Risk Management Division in April 2017. This division analyzes the potential risks of large-scale projects and investments to help ensure consistent and profitable implementation.

It was established by consolidating functions for pre-bid assessments and ongoing-project monitoring, which had been separated. The consolidation has made it possible to strengthen ongoing project monitoring with awareness of risks identified during pre-bid assessments, and then reflecting lessons learned during such monitoring when conducting other pre-bid assessments. The result derives a more robust risk-management system.

Moreover, by analyzing factors behind deteriorating profitability, we have strengthened our awareness that myriad issues can occur in projects where IHI has limited experience. Such issues can involve a variety of areas beyond just technical aspects, such as customers, countries, legal

systems, contracts and more. In response, we intend to draw on the knowledge of diverse experts in a more multifaceted pre-bid assessment system to ensure so that potential risks throughout project lifecycles can be broadly discovered and effectively responded to.

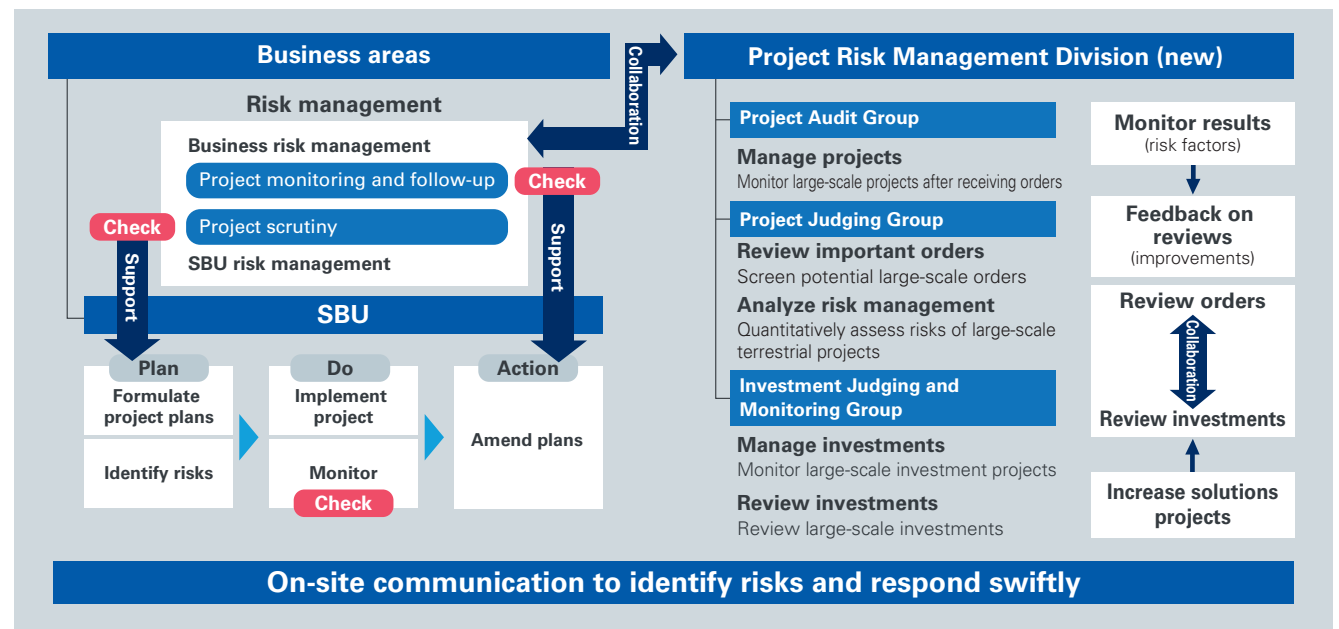
#### Communication is crucial

The new pre-bid assessment system will be deployed in FY2017. At the same time, in ongoing projects, we aim to thoroughly identify risks and rapidly establish suitable countermeasures to minimize any possible impact. For the early detection of risks, information from project frontlines must be obtained promptly and then shares with everyone involved in the project. For this purpose, the Project Risk Management Division will operate in step with the Risk Management Group in each business area to maintain close contact with key project members and other persons in

charge. By raising the sensitivity of our monitoring, we believe that we will be able to discover risks when they are still manageable and thereby minimize any impact on profit.

#### Meeting stakeholder expectations

It is said that the increasing maximum speeds of the Shinkansen (bullet train) are requiring increasingly reliable brakes to be developed for safe high-speed control. The situation is analogous to the situation of IHI projects. Our new division supports projects so that they can be operated with safety and consistency. This is our mission. As IHI continues to undertake challenging projects designed to advance society forward, we understand as a given that no project is without risk. With our new system, however, we are confident of that our highly coordinated ability to manage risks will ensure the steady and profitable execution of projects, and thereby meet the expectations of our stakeholders.



# Financial and CSR Highlights

## Strategy

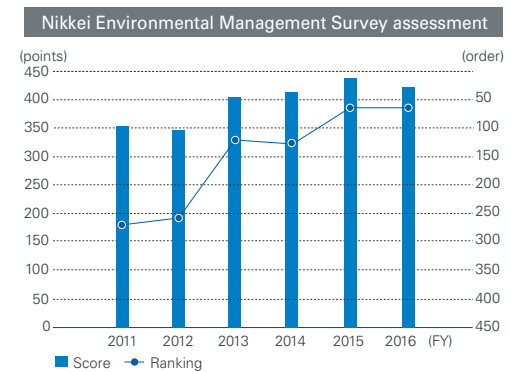
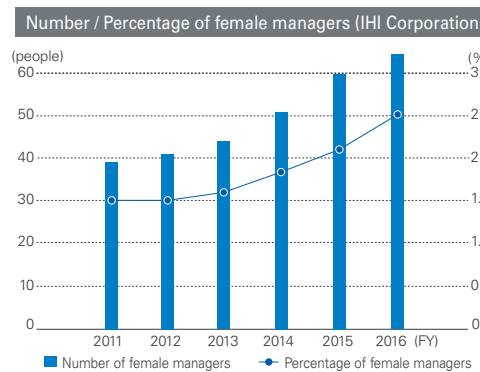
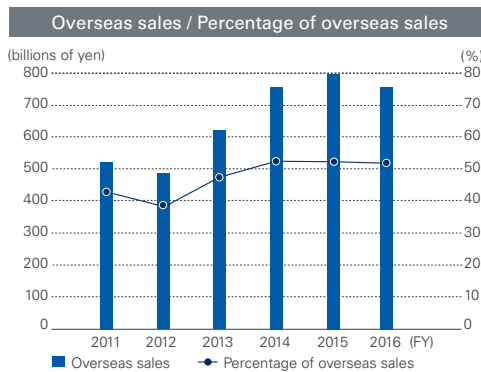
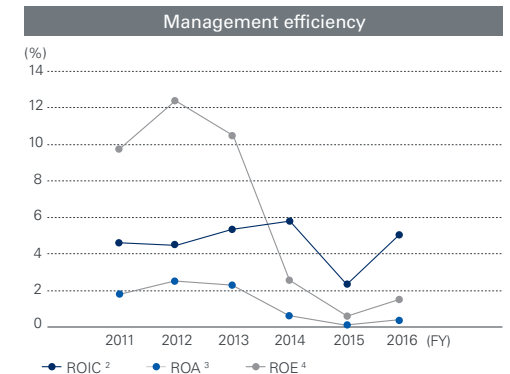
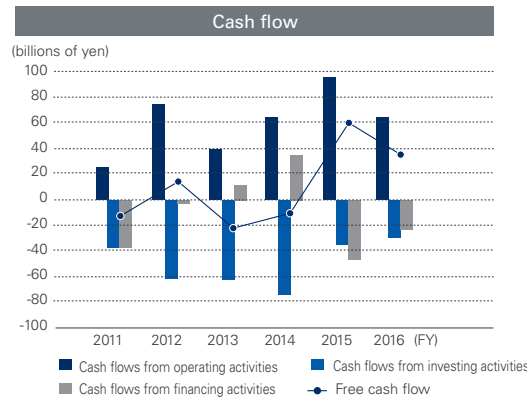
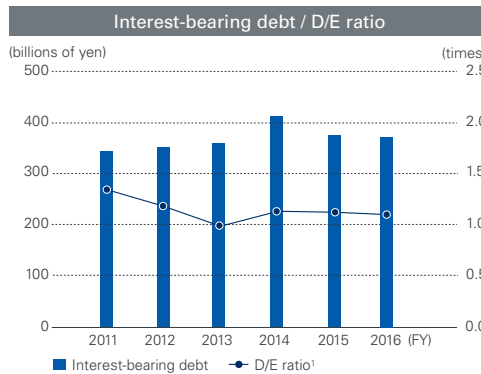
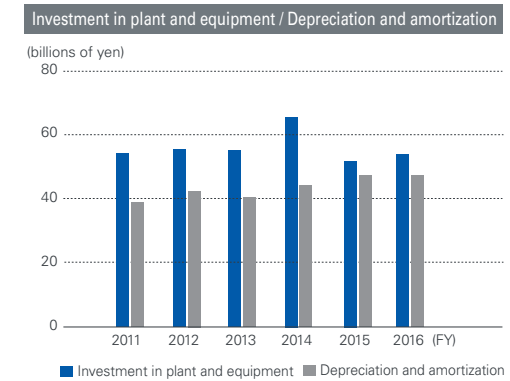
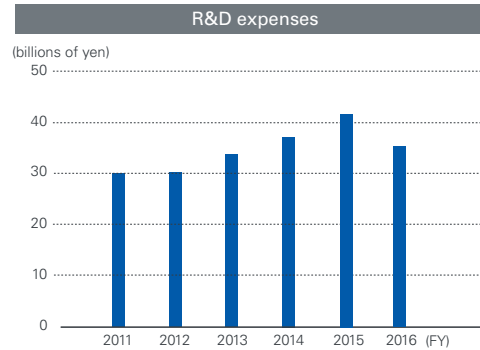
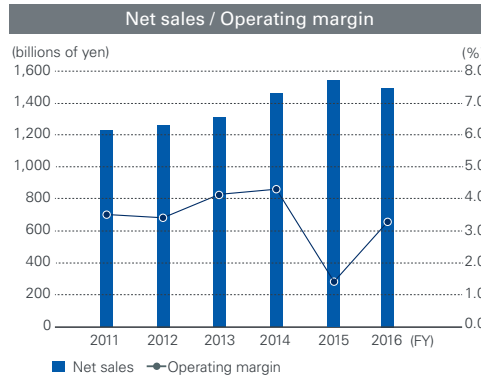
- Creating Value for Businesses and Society -

## Challenge

- Creating Value for the Future -

## ESG Management

- The Foundation of Sustainable Growth -



1: Interest-bearing debt ÷ net assets

2: (Operating income + interest and dividend income) after-tax ÷ (owner's equity + interest-bearing debt)

3: Profit attributable to owners of parent ÷ (average of total assets at end of previous term and end of current term)

4: Profit attributable to owners of parent ÷ (average of owner's equity at end of previous term and end of current term)

All financial figures are on a consolidated basis, unless IHI Corporation is specified. See pp. 49-50 for more detailed information on CSR.



Please view website for more detailed information.

Financial: <https://www.ihico.jp/en/ir/>

CSR: <https://www.ihico.jp/csr/english/index.html>



# Business Overview

## Strategy

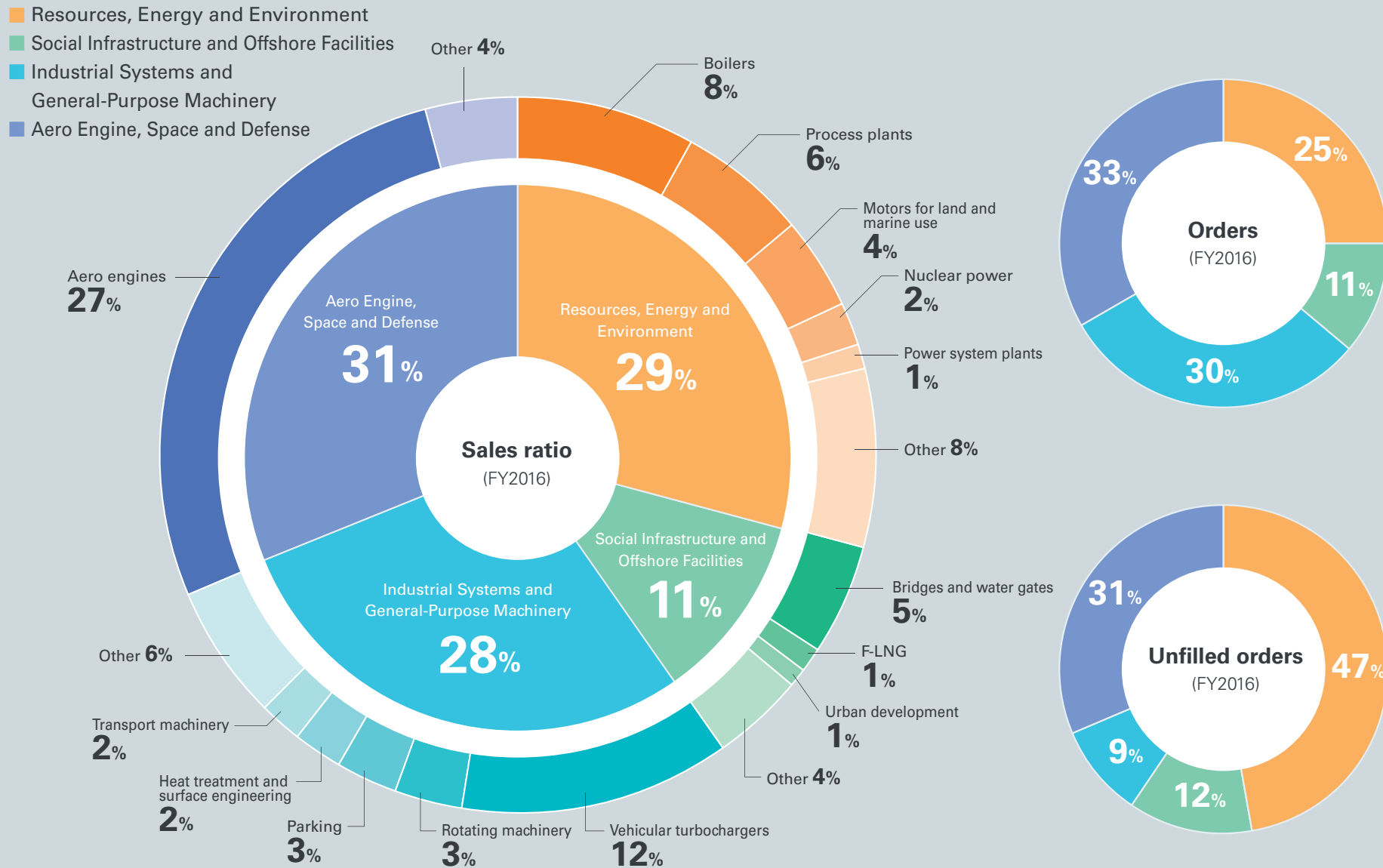
- Creating Value for Businesses and Society -

## Challenge

- Creating Value for the Future -

## ESG Management

- The Foundation of Sustainable Growth -



Note: Figures may not add up to 100% because "other" and "recalculated" figures separate from business segments are excluded.

# Business Overview

## Strategy

- Creating Value for Businesses and Society -

## Challenge

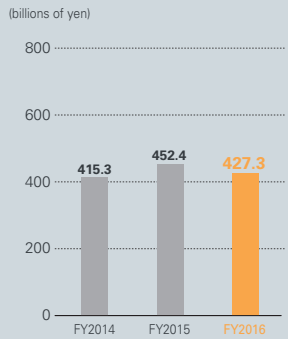
- Creating Value for the Future -

## ESG Management

- The Foundation of Sustainable Growth -

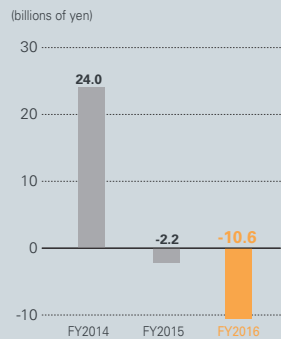
## Resources, Energy and Environment

### Net sales



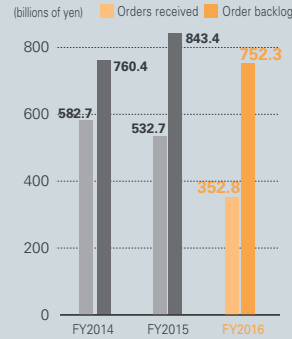
Sales decreased from the previous fiscal year, reflecting declining business in process plants, power system plants and land and marine power systems, which were partially offset by increased sales for major construction projects in boiler business.

### Operating income



The operating deficit increased, mainly owing to declining revenues from land and marine power systems business and weakened profitability of large projects for process plant business underway in North America, which were partially offset by a slowed decline in boiler business profitability.

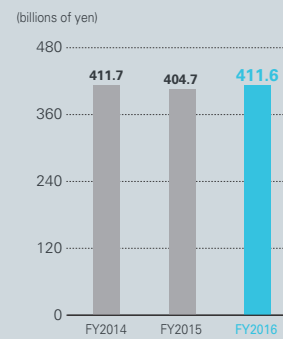
### Orders received / Order backlog



Orders received declined, reflecting a pullback from large orders for boiler and process plant businesses in the previous fiscal year, and also decreased orders in land and marine power systems business due to the market impact of lower crude oil prices.

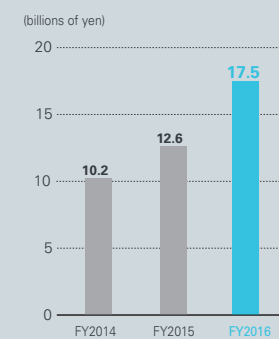
## Industrial Systems and General-Purpose Machinery

### Net sales



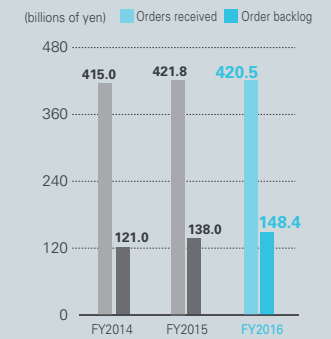
Sales increased owing to the unification of financial reporting periods and increases in logistics and industrial system business. The increase was partially offset, however, by the transfer of construction machinery business and decreased sales in agricultural machinery and small power systems business.

### Operating income



Operating profit rose due to increased sales in logistics and industrial system business and improved profitability in parking, logistics and industrial system, and rotating machinery businesses.

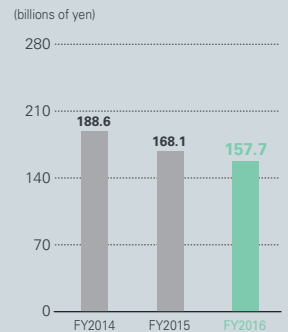
### Orders received / Order backlog



Orders received were generally flat. Increases were achieved in vehicular turbocharger, paper-making machinery, and heat treatment and surface engineering businesses, but were offset by the transfer of construction machinery business.

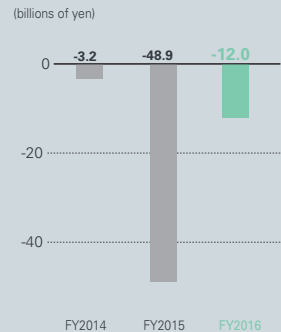
## Social Infrastructure and Offshore Facilities

### Net sales



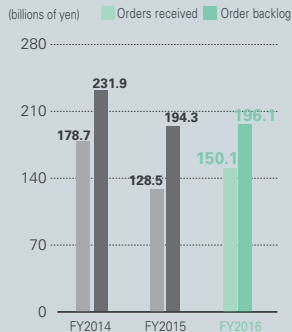
Sales decreased, due partly to the impact of decreased sales for bridge and water gate business following the completion of the Izmit Bay Bridge in Turkey, which were partially offset by increased sales in shield tunneling machine business following a business integration.

### Operating income



The pace of declining profitability in the F-LNG business slowed, despite increased costs. And profitability improved in bridge and water gate business, helping to reduce the operating deficit from the previous fiscal year.

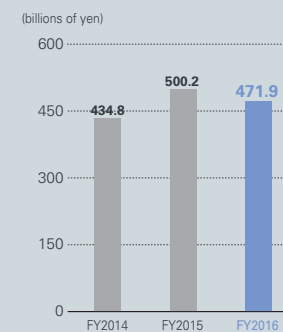
### Orders received / Order backlog



Orders received increased thanks to stronger performance in transport system business and the business integration of the shield tunneling machine business.

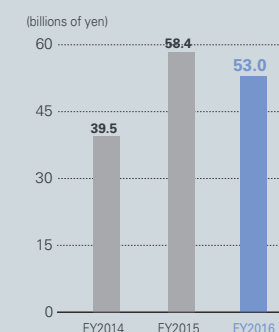
## Aero Engine, Space and Defense

### Net sales



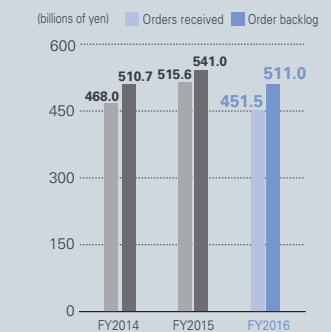
Sales decreased mainly due to the effect of the yen appreciation in civil aero engines.

### Operating income



Operating profit decreased, despite increased sales of spare parts and decreased R&D expenses, due to foreign exchange effects and the launch of mass-production sales for the PW1100G engine.

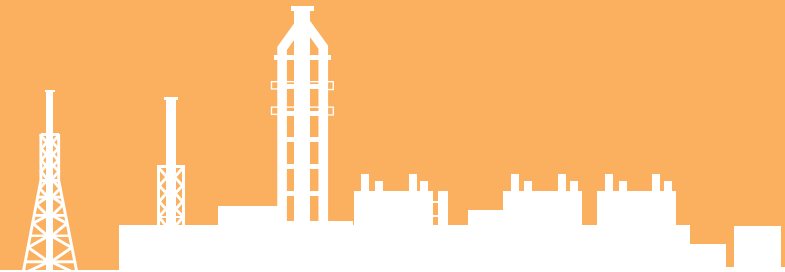
### Orders received / Order backlog



Orders received decreased following a lump-sum procurement of aero engines by Japan's Ministry of Defense in the previous fiscal year and a decline in civil aero engines due to the yen's appreciation. Rocket systems and space exploration business orders increased.

# Resources, Energy and Environment

Products and services: boilers, power systems plants, power systems for land and marine use, large power systems for ships, process plants (storage facilities and chemical plants), nuclear power facilities (components for nuclear power plants), environmental systems, pharmaceutical plants



## Responding earnestly to social changes and customer needs

Director and Managing Executive Officer  
President of Resources, Energy and Environment Business Area

**Hiroyuki Otani**

### Current status and key initiatives

Orders in Japan for coal-fired boilers, the flagship product of our boiler business, have been increasing as an alternative to nuclear power plants, the majority of which were shut down since the Great East Japan Earthquake. While demand for new boilers has eased, there are strong needs for modification of existing equipment to maintain ongoing operations. Coal is low-cost and plentiful, so continued overseas demand is expected for coal-fired thermal power generation, particularly in emerging nations.

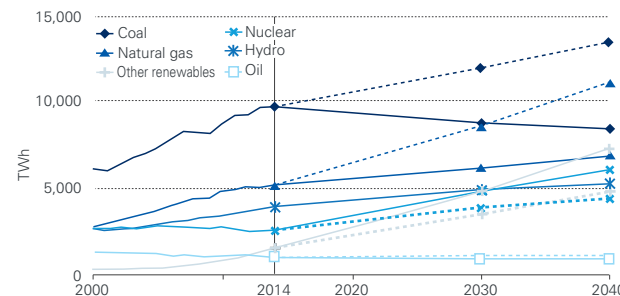
In regards to process plants, the worldwide increase in LNG demand is presenting significant business opportunity. IHI offers technologies for all stages, from

upstream to downstream, including LNG liquefaction, transportation, storage and final usage, within the scope of our supply chain business. Our proprietary J.C.Method® offers high safety and improved productivity for the production of LNG storage tanks, shortening construction lead times by more than one year.

Our power systems plants business is focused on power generation equipment, such as gas turbines, gas engines and diesel engines. There is a high demand for gas turbines, not only in Japan but also Thailand and Australia, and we are developing new markets in regions such as Africa. Our business also includes equipment operations remote monitoring and engine maintenance to ensure maximum performance throughout the entire lifecycle of IHI products.

Our nuclear power business covers manufacturing

Global power generation by source



FY2014 and later Solid lines: Advanced technologies Dashed lines: Reference  
Source: The Institute of Energy Economics, JAPAN, Asia/World Energy Outlook 2016.

### Future Directions

- Enhance delivery of diverse infrastructure solutions
  - Expand and enhance energy resource usage technologies
  - Strengthen system supply capabilities for diversified power source needs (decentralization and stabilization)
  - Create and swiftly commercialize advanced technologies to lower environmental impact
  - Increase value of lifecycle service technologies by harnessing ICT

### Social Value Creation

Develop eco-minded power generation systems for stable energy supply.



### SBUs for priority investment

SBU	Major policies
Boiler	Enhance and rebuild quality-control framework Expand business in developing nations
Power system and plant	Expand business in preventative maintenance and remote monitoring
Power systems for land and marine use	Increase orders in the overseas land-based power generation market

# Business Strategies

equipment for nuclear power plant, inspection of nuclear reactors, decommissioning and decontamination and nuclear fuel cycle. In the future, we will continue providing technologically advanced products and services for nuclear power generation, an important base-load power source.

## Solution sales to avoid downswings

In FY2017, we will implement measures aimed at avoiding downswings in sales. After the noncompliant boiler welding incident that occurred at PT Cilegon Fabricators in Indonesia in FY2015, we collaborated with Japan's Aioi Works to revise PT Cilegon Fabricators' quality-control processes, implemented measures to prevent any recurrence and strengthened governance. The falloff in large-scale projects in our process plant business in FY2016 led to increased costs due to additional requests related to legal compliance. Progress also were affected. In response, we are focusing on improving quality by increasing personnel and strictly adhering to delivery times.

In regards to business development, we are working on strengthening our solution proposals. Within Japan, retail electricity has undergone complete liberalization and this has led to an extreme diversification of customers' needs. To properly respond to these changes in the business environment, we are shifting from selling individual products to selling broader solutions that help customers raise their profitability in terms of more diverse business areas or products. Cross-business projects are already underway, including wood biomass power generation in Kagoshima Prefecture.

## Pursuing sustainable growth and mixed energy

Energy is an irreplaceable part of our lives. The demand for electric power will continue rising in line with growth in newly emerging nations. Amidst concerns for the environment, such as intensifying global warming, what is the role of an energy infrastructure company such as

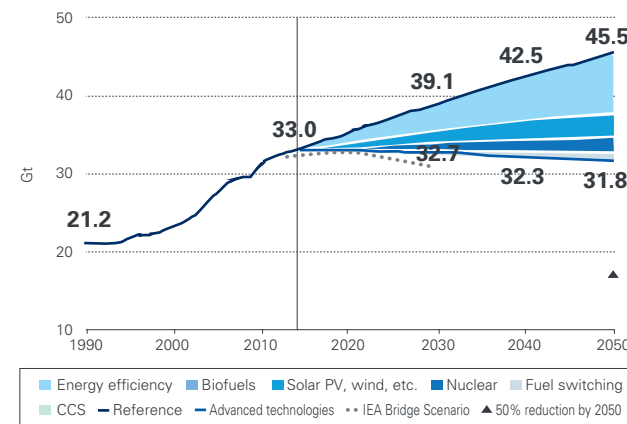
IHI? With sustainable growth as our ultimate goal, we are drawing up a roadmap that projects 50 years into our future.

Any future direction must involve an energy mix that is highly mindful of environmental needs. To ensure stable supplies of electric power, we will promote renewable energy free of CO<sub>2</sub> emissions, while also maintaining a good balance of energy sources such as thermal and nuclear power that enable continuous operation and constant outputs. We will leverage combustion technology, one of our core technologies, to reduce fuel consumption through higher efficiency boilers, and use biomass fuel to improve environmental performance. Moreover, we are pursuing technical development aimed at the effective utilization of unused resources, such as the gasification of lignite using our Twin IHI Gasifier (TIGAR®), for which a demonstration operation was conducted in Indonesia.



TIGAR® Twin IHI Gasifier

Global CO<sub>2</sub> emissions reduction by technology



Source: The Institute of Energy Economics, JAPAN. Asia/World Energy Outlook 2016.

### Strategy

- Creating Value for Businesses and Society -

### Challenge

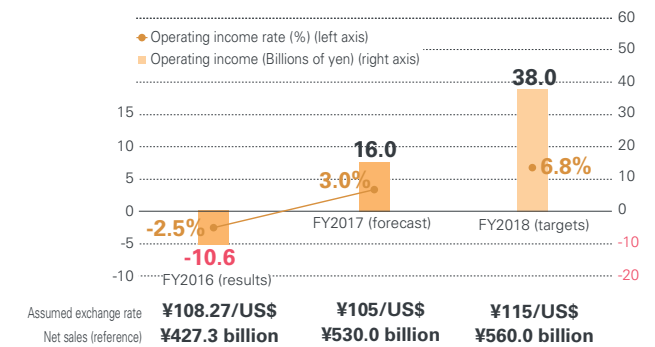
- Creating Value for the Future -

### ESG Management

- The Foundation of Sustainable Growth -

We are proud of the trust we have earned with IHI's high technical capability and solid track record. Going forward, we will continue responding to changing needs in business and society to maximize our contribution to the stable supply of energy.

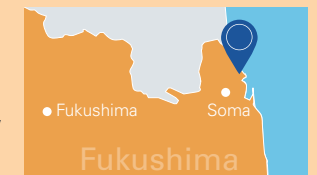
## Targets and Forecast of Group Management Policies 2016



## Topics

### Orders for high-capacity LNG storage tanks at Soma Port in Fukushima Prefecture

Fukushima Gas Power Co., Ltd. submitted an order to IHI's joint venture with Shimizu Corporation to perform engineering, procurement and construction for one above-ground LNG storage tank (230,000 kl capacity). This order for LNG storage tanks at Soma Port in Fukushima Prefecture is a follow-on to an above-ground LNG storage tank under construction at the Soma LNG Receiving Terminal of Japan Petroleum Exploration Co., Ltd. (JAPEX). We expect to achieve a much shorter construction period this time using a new method developed by IHI (construction to begin in 2017 and commercial operation in 2020).



LNG storage tank site in Soma Port, Fukushima Prefecture

# Social Infrastructure and Offshore Facilities

Products and services: Bridges, Water gates, Shield tunneling machines, Transportation systems, Concrete building materials, Urban development (real estate sales and leasing), and F-LNG (floating LNG storage facilities, offshore structures)



## Supporting society with safe and secure infrastructure

Executive Vice President  
Senior Executive Officer  
President of Social Infrastructure &  
Offshore Facilities Business Area

**Ichiro Terai**

### Current status and major policies

In Japan today, social infrastructure, such as bridges and roads that were constructed decades ago during the high economic growth period, has deteriorated, and has raised awareness of the need for maintenance work, including large-scale rebuilding, repair and inspections, throughout Japan. Furthermore, with the upcoming Tokyo 2020 Olympic and Paralympic Games and the scheduled commencement of operations of the new linear bullet train in 2027, there is also a growing expectation for the construction of new infrastructure. We can contribute to this need for new infrastructure development such as in the area of tunnel excavation, with our shield tunneling machines, concrete segments (tunnel blocks), and other such construction

components. When we turn our eyes overseas, we see that advanced nations have the same demand for maintenance as in Japan, and in emerging nations, urbanization is creating demand for new infrastructure. An expansion of the overseas market is thus expected.

### Aiming to expand on the global stage based on proven quality and technology.

In the domestic market for bridge construction, we are focusing our initiatives on the maintenance business as a leader in the industry. IHI Infrastructure Systems Co., Ltd., established in 2009 through business integration, is showing significant successful figures, such as an increase in profit through productivity improvement and an increase of overseas projects. Moreover, when considering the growing overseas market, continuous export is anticipated as according to the Japanese government policy is encouraging infrastructure export. In Southeast Asia where urbanization is progressing along with population growth. Construction of new infrastructure is ongoing. In response, we have established production bases in Vietnam (2008) and Myanmar (2017). In the future, we believe the same trend of urbanization will occur in various countries in Africa as well. In recent years, business development in newly emerging nations is being supported not only by official development assistance (ODA), but also by new schemes based on government-private collaboration, such as BOT projects in which private companies also undertake the maintenance and operation of facilities.

### Future Directions

#### ■ Upgrade and strengthen infrastructure and prevent disasters

- Provision of solutions to the evolving maintenance and repair market
- Contribution to infrastructure development driven by urbanization in emerging nations (such as in Southeast Asia)

#### ■ Marine resources and energy development

- Continued initiatives related to marine resource development

### Social Value Creation

We strive to provide technology that expands, maintains and improves infrastructure functions in harmony with society



Realize low-carbon societies and reduce environmental burdens



Ensure stable supply of energy



Promote social industrialization, advancement and urbanization

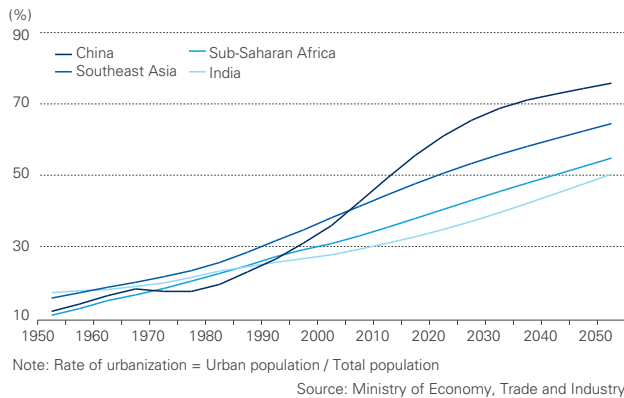
### SBUs for priority investment

SBU	Major policies
Bridges and water gates	<ul style="list-style-type: none"> <li>● Provision of solutions for the maintenance business</li> <li>● Export of infrastructure overseas</li> <li>● Productivity improvement through the utilization of ICT</li> </ul>



# Business Strategies

Rates of urbanization in major emerging countries and regions



In our shield tunneling machine business, we integrated the shield business with Mitsubishi Heavy Industries Mechatronics Systems, Ltd., to establish JIM Technology Corporation. By this merger, we plan to broaden our product lineup and accelerate global expansion, to meet the wide-ranging needs of our customers.



Japan's largest shield machine (outer diameter: 16.1 m) for Tokyo Outer Ring Road

In our transport system business, Niigata Transys Co., Ltd. received an order from the Osaka Municipal Transportation Bureau for the "New Tram," an fully Automated People Mover system that operates along the Nanko Port Town Line in Osaka City. On account of a growing environmental awareness, demand for new transit systems with low CO<sub>2</sub> emissions is increasing both in Japan and overseas.

In our urban development business, we are expanding into real estate leasing, by utilizing land owned by us. In particular, we are undertaking an urban development project in the Toyosu area in Koto-ku, Tokyo, where we used to operate a shipyard. The building complex that is scheduled for construction in the Toyosu Nichome zone in front of Toyosu Station, will have commercial facilities, offices and the first hotel in the Toyosu redevelopment zone, when completed in 2020.



Drawing of building complex

Aichi Works, the primary base of our F-LNG business, will terminate its production activities once all existing projects are completed. However, we will undertake after-sales services of products we have delivered, and will continue to maintain and utilize the extensive technology and expertise we have accumulated to date.

## Continuously contribute to social infrastructure development with the pride of an industry leader

We plan to make effective use of ICT to contribute to safe and secure infrastructure. (In order) to increase the efficiency of our infrastructure maintenance work and realizing improved quality and productivity through central control of information from design to construction, we are introducing remote control of water gates and the use of tablet devices in construction sites, among other initiatives.

Safety and security are always the essence of social infrastructure in any era. By applying our well-established technological strengths from construction to maintenance across a broad range of infrastructure fields, we will continue to contribute to global infrastructure development with a strong sense of responsibility and commitment.

### Strategy

- Creating Value for Businesses and Society -

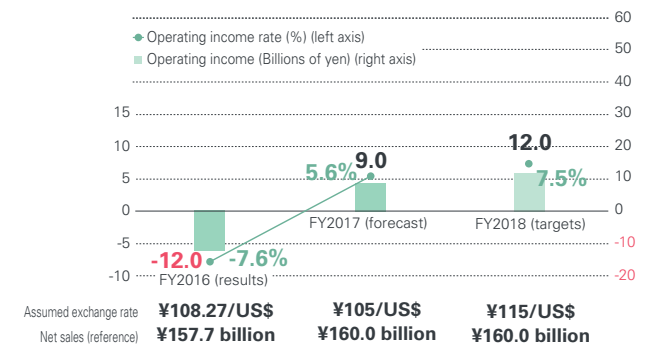
### Challenge

- Creating Value for the Future -

### ESG Management

- The Foundation of Sustainable Growth -

## Targets and Forecast of Group Management Policies 2016



## Topics

### Opening of Izmit Bay Crossing Bridge, the longest suspension bridge in Turkey

Izmit Bay Crossing Bridge (Turkish name: Osman Gazi Bridge), constructed in Turkey by IHI Infrastructure Systems Co., Ltd., was opened in a ceremony held on June 30, 2016. The bridge is the world's fourth-longest suspension bridge, and the longest overseas bridge constructed by IHI. The opening of the bridge has reduced the crossing time over the bay from one hour by car or ferry to just six minutes, and has brought dramatic improvement in transportation efficiency.



# Industrial Systems and General-Purpose Machinery

Products and services: logistics systems, transport machinery, parking, steel manufacturing equipment, industrial machinery, heat treatment and surface engineering, papermaking machinery, vehicular turbochargers, compressors, separation systems, turbochargers for ships, agricultural machinery, and small power systems.



## Leveraging diversity for overall optimization

Director and  
Managing Executive Officer  
President of  
Industrial Systems and  
General-Purpose Machinery  
Business Area

**Mikio Mochizuki**

### Current status and key initiatives

In the Industrial Systems and General-Purpose Machinery Business Area, we provide a wide variety of products and services essential to industrial sites. In addition to industrial machinery for production plants, logistics/transport systems, automotive turbochargers, etc. we also operate a parking business based on our widely utilized mechanical parking structures. This business area consists broadly of seven SBUs, the kind of diversity that makes this business unique and strong. Of the seven SBUs, automotive-related turbochargers and heat-treatment furnace and coating equipment for automotive parts account for particularly high sales. It is anticipated that these businesses will grow in line with the steady expansion of key areas of the automotive industry.

With turbochargers expected to play a significant role in the further reduction of vehicle CO<sub>2</sub> emissions, IHI intends to expand its business with these products.

### Developing a global network

Our turbocharger business operates production bases in Japan, China, Thailand, North America, Italy and Germany, focusing on sales in the country of production. From now on, these individual production bases will be integrated into a global network to increase production efficiency and strengthen our global competitive edge. Currently we are transitioning to a structure whereby Japan, Thailand and Europe are positioned as central production hubs for major parts, including for supply to bases in the growing markets of North America and China.

In our rotating machinery business, which includes products such as compressors and separation systems, we are establishing joint ventures not only in Japan, but also in China and Turkey to serve as production and sales bases for more active business development. The base in Turkey, for example, will take advantage of its geographical proximity to support business development in Europe, the Middle East and North Africa. For our logistics system, transport machinery and parking businesses, we will expand into Southeast Asia, where vigorous investment in infrastructure is taking place in connection with increasing urbanization. We are steadily adding to our accomplishments in Singapore through

### Future Directions

- Develop greater flexibility and strength by expanding our global network and optimizing group assets
- Create greater value and encourage group collaboration in life cycle business
- Offer customers more value with advanced products and services by harnessing ICT and robotics

### Social Value Creation

Provide technology for sustainable business and production that conserve natural resources and energy for enhanced environmental protection.



Realize low-carbon societies and reduce environmental burdens



Promote social industrialization, advancement and urbanization

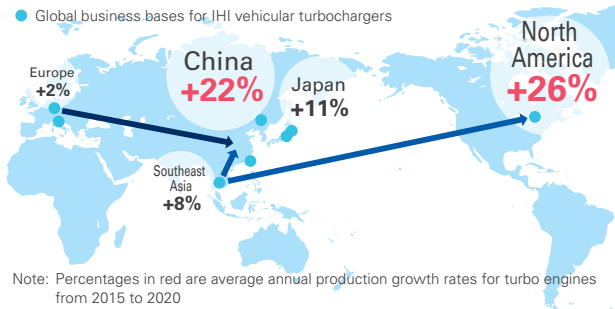
### SBUs for priority investment

SBU	Major policies
Vehicular turbochargers	Sophisticated global business framework
Rotating machinery	Expand global alliances and reform business structure
Parking	Increase maintenance business stocks and develop global markets
Heat treatment and surface engineering	Strengthen treatment services

# Business Strategies

efforts such as participation in a national project with our mechanical parking system, which effectively utilizes the limited space available in this island city-state.

Integration of vehicular turbocharger production bases in global network



## Progress with business structure reforms

In this business area encompassing a wide range of products, strategic allocations of resources and structural reforms are needed to strengthen both responsiveness to market changes and profitability.

Resource allocation and structural reform: fiscal 2016 results and 2017 plans

Business	Category	Timing	Overview
Parking	Concentration	June 2016	Subsidiary IHI Transport Machinery Co., Ltd., receives a maintenance order for mechanical car parking systems from KYC Machine Industry Co., Ltd.
Rolling mills (strip casters)	Selection	October 2016	IHI transfers ownership, patents and other interests in strip caster company Castrip LLC, withdrawing from the business.
Logistics & industrial machinery	Structural reform	October 2016	Sales units integrated into IHI Logistics & Machinery Corporation to enable more responsive and flexible action.
Construction machinery	Selection	November 2016	All shares in IHI Construction Machinery Limited sold to Kato Works Co., Ltd.
Rotating machinery	Concentration	December 2016	Joint venture established with Dalgakiran in Turkey to manufacture and sell general-purpose turbo compressors.
Agricultural machinery	Structural reform	October 2017 (planned)	Subsidiaries IHI Shibaura Machinery Corporation and IHI Star Machinery Corporation to be integrated.
Rotating machinery	Structural reform	October 2017 (planned)	Rotary machinery business (compressors, separators, etc.) to be integrated with IHI Compressor and Machinery Co., Ltd.

Current structural reforms are aimed at further improving profitability, with a focus on priority SBUs for investment. We also are implementing structural reforms to revitalize and reorganize business areas where continued viability is a concern. We are steadily moving forward with our plan with a view to future business potential.

## Leveraging synergy to seize new business opportunities

IHI is reforming its business structure while simultaneously reforming its organizational structure. Sustainable growth depends on the steady expansion of business areas and initiatives to incubate new business. The departure point for this is the elimination of barriers between SBUs and the company as a whole from the perspective of overall optimization.

In FY2017, we established our Strategy Development Department with the aim of identifying and sharing common issues within our business area to devise more strategic approaches. In Thailand, for example, we are expanding our market through the cross-line deployment of SBUs. The Business Development Department also oversees the creation of new businesses through the synergistic combination of proprietary technologies. New initiatives in the U.S. market, for example, include the development of wireless-charging infrastructure for electric vehicles and an energy storage-system business for the stable supply of renewable energy.



Wireless charging test at Mitsui Home's MIDEAS Experimental House (photo courtesy of Mitsui Home)

Our business area fully embodies IHI's philosophy of "Contribute to the development of society through technology." Ongoing global urbanization is creating seemingly limitless opportunities for our products to help

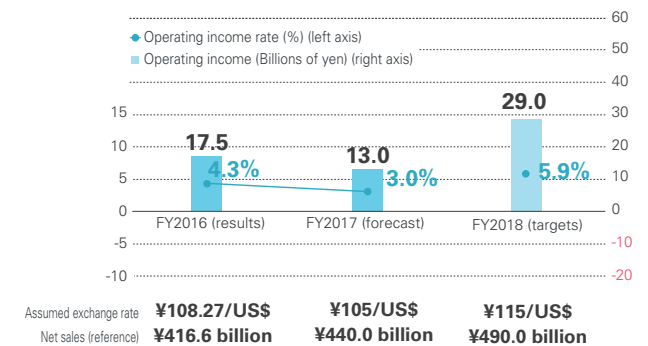
**Strategy**  
- Creating Value for Businesses and Society -

**Challenge**  
- Creating Value for the Future -

**ESG Management**  
- The Foundation of Sustainable Growth -

people enhance their quality of life. Going forward, we will combine keen insight and broad-ranging technologies to effectively meet these vital needs.

## Targets and Forecast of Group Management Policies 2016



## Topics

### Development of innovative chrome finishing technology

IHI Hauerz Techno Coating B.V. (Hauerz) has developed Cromatic®<sup>®</sup>, a new plastic chrome-coating technology, and opened the Cromatic Competence Center<sup>®</sup> with an automated processing line in Spain. Cromatic<sup>®</sup> is a high-quality, environmentally friendly technology that does not use chromium 6, a hazardous material that is used in conventional chrome plating. Chromium 6 is coming under restrictions in Europe, so the demand for a more eco-minded chrome-coating technology is expected to increase. Hauerz, in addition to its manufacture and sale of equipment, plans to launch contract-based coating services. Leveraging the suitability of Cromatic<sup>®</sup> for a wide variety of plastic products, we expect to expand this new coating business in fields including vehicle interiors/exterior, home appliances, sanitary goods, décor goods and more.



Coating unit at Cromatic Competence Center

## Aero Engine, Space and Defense

Products and services: Aero engines, Rocket systems/space utilization systems (space-related equipment), Defense equipment and systems



**Enhancing technologies through team strength and establishing our global presence**

Director and Managing Executive Officer  
President of Aero Engine, Space and Defense Business Area

**Tomoharu Shikina**

### Current status and key initiatives

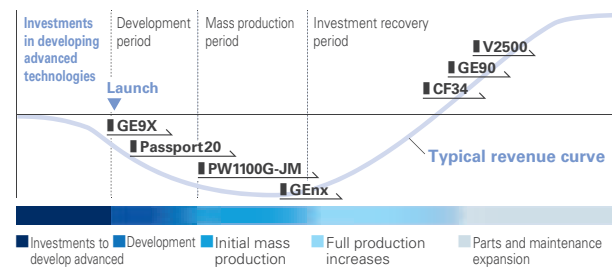
The Civil Aero Engine business focuses on strategic investments in the development of promising technologies and the promotion of newly launched products, and generating additional revenue from regular maintenance services and the sale of spare parts in the after-sales market. Products such as the V2500, GE90 and CF34, initially developed in the 1980s and 1990s, are now at a stage where they are producing profits. We aim to drive future technological development by reinvesting profits from such products to develop new models. FY2015 marked the beginning of commercial flights of an aircraft powered by the PW1100G-JM engine, the

successor to the V2500 engine developed by IHI. Orders are growing steadily in this sector, which is expected to have a bright future. We also are developing the GE Passport20 business jet engine and the GE9X jumbo jet engine. Both models are

#### Reinvigorating sluggish aero engine business

While after-market earnings from existing programs are expected to rise steadily, increased shipments of the PW1100G-JM engine became a burden in the initial stage of mass production, resulting in earnings leveling off in FY 2017. Aiming to recover in FY 2018

- Pursue advanced technologies
  - Major initial investments
  - Recoup investments in 15 to 20 years
- Take earnings from matured engines business and invest in the mass production of early-stage engines and R&D



Civil aero engine for Boeing 777X "GE9X" (photo courtesy of GE)

### Future Directions

- Enhance technological and manufacturing capabilities and expand life cycle businesses
- Expand rocket propulsion systems and space utilization businesses
- Develop new businesses that leverage technological and manufacturing capabilities

### Social Value Creation

Develop eco-friendly, safe and practical aero systems. Support space exploration and utilization for sustainable development on Earth.



Realize low-carbon societies and reduce environmental burdens



Promote social industrialization, advancement and urbanization

### SBUs for priority investment

SBU	Major policies
Aero engines	<ul style="list-style-type: none"> <li>● Develop production frameworks and reduce costs for new mass-production engines</li> <li>● Develop engines for future fighter jets and civil aircraft</li> <li>● Strengthen original technology in fields such as new materials and innovative production</li> </ul>
Rocket systems and space utilization	<ul style="list-style-type: none"> <li>● Develop new models, such as the H3 and Epsilon rockets</li> <li>● Develop solutions business by leveraging space utilization technology</li> </ul>



# Business Strategies

scheduled to commence commercial flights in 2018. IHI boasts a 70%-plus share of the Japanese market for defense aero engines. Our new initiatives in this sector include the manufacture, assembly and trial operation of major components for the F135 turbofan engine used in the F-35A, a state-of-the-art combat jet. In FY2016, we completed a facility at our Mizuho Works for the assembly and trial operation of this engine. We also are involved with defense equipment and systems, such as the manufacture of devices and equipment for ships, including gas turbine engines for propulsion, as well as the manufacture of nuclear, biological, chemical substance alarms and the technological development of unmanned vehicles. In regard to rocket systems and space utilization, development is focused on the Epsilon and H3 rockets. For the H3 rocket, which is scheduled to launch in 2020, we are developing technologies to improve the rocket's capabilities and lower the costs of its turbo pump, solid rocket motor and other components handled by IHI. We will also utilize data obtained from satellites to develop new solutions for space utilization and to expand into new business domains.

## Refining proprietary technologies and competing globally

The development of proprietary technologies is vital to efforts to enhance the global presence of IHI's Aero Engine, Space and Defense business. Currently, a key focus is the development of material and manufacturing technologies. Carbon fiber reinforced polymer (CFRP) and ceramic matrix composites (CMC) are new lightweight materials we are developing for high-temperature, high-strength casting. Components made from these materials are expected to lead to production of engines offering improved fuel efficiency and reduced operating costs. Another focus is our introduction of new manufacturing technologies for linear friction welding (LFW), metal

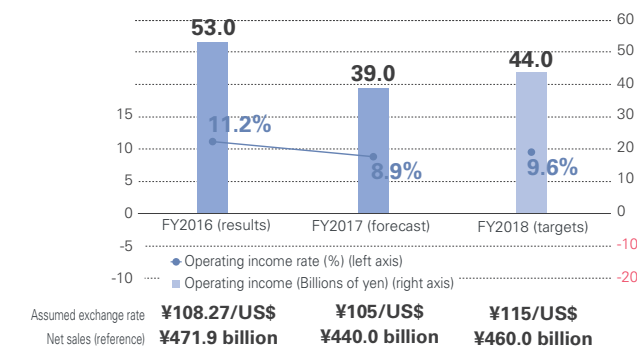
injection molding (MIM) and laminate molding (3D printers). Furthermore, we will use ICT to help transition our plants into smart factories between FY2016 and FY2018, aiming to double production-floor throughput (volume processed by a plant/device within a set period of time) for improved cost competitiveness. Since FY2016, the slogan of the Aero Engine, Space and Defense Business Area has been "acting as a team, acting as a global player" Our greatest strength is cross-organizational cooperation. In IHI factories and other worksites, we are firmly establishing a culture of bottom-up improvement and the direct management of shops based on thorough cooperation among project teams, business departments and factories (workshops). Our concept of collaboration even includes treating suppliers as partners and occasionally soliciting the participation of customers. This is one of the special ways that a truly global team can build value chains based on mutually beneficial accomplishments.

## Contributing to society through our businesses

Our mission for defense aero engines is to firmly contribute to the national security of Japan. We are particularly focused on developing domestically manufactured combat planes equipped with Japanese-made aero engines. In the civil aero engine business, manufacturing capabilities are being enhanced for greater global competitiveness. By maximizing the profitability of current models and introducing proprietary technologies for new materials, such as CFRP and CMC, we plan to evolve into a major participant in global programs targeting the development of aero engines that offer superior fuel efficiency and maintainability. In regard to rocket systems and space utilization, we are developing Epsilon rockets to efficiently place small

satellites into orbit. We also are expanding services for the launch of small satellites. As the global economy advances, we believe that the demand for aircraft and rockets will increase worldwide. Long-distance aircraft and rockets that further global transportation have the potential to expand and enrich the lives of people everywhere. Our aim is to remain a vital member of the global community by developing and refining technologies that have benefit for all humanity.

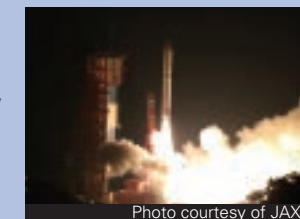
### Targets and Forecast of Group Management Policies 2016



## Topics

### Successful launch of Epsilon-2

Japan Aerospace Exploration Agency's (JAXA) Epsilon-2 was launched on December 20, 2016 and the Exploration of energization and Radiation in Geospace (ERG) was successfully separated. This success demonstrates our technological capabilities related to rocket systems, such as the improved launch capabilities and the expanded satellite loading space.





# Challenge

- Creating Value for the Future -

A Future Based on Technologies [P24~](#)

A Future Based on Interconnections [P29~](#)



# A Future Based on Technologies

## Promoting the technology for society development

Executive Officer  
General Director of  
Corporate Research &  
Development

**Kouichi Murakami**



### The technology leads the IHI Group

The Corporate Research & Development is responsible for developing new technology, one of the main engines for the IHI Group. We have about 700 R&D researchers, engineers and specialists mainly at two sites, the Yokohama Office at Yokohama (Kanagawa Prefecture) and the Toyosu Head Office in Tokyo's Koto ward.

We have two missions. The first one is to respond any technology demand in the IHI Group. Typically this involves not only creating new products but also services as well as making them more valuable. We also look ahead and create new technology that will be required in the future.

The demands and expectations of the market are changing day by day; time flies like an arrow. Also our products such as the factory equipment and public infrastructure that we have supplied are used for long years, some times more than 100 years. Designing for reliability for long term shall be IHI group's responsibility. In order to satisfy the both competing requirements of ever-evolving expectations and long-term durability, we develop wide range of technology and evolve it to the latest version. Global-Class engineers researchers, and specialists are necessary to achieve this aim. We have been grateful to our friends for many years companies, universities and research institutes over the world. We also will be walking a long and winding way with friends whom we

will meet in the future as well. Working with talented, highly trained researchers, engineers and specialists in the world are the life blood of the IHI Group. On a global scale, we need friends—even if not all of them work for IHI!

### IHI Technology Strategy

The 2016 Technology Strategy for the IHI Group sets out the shared medium to long term objectives of technology development throughout the Group. To achieve the strategy goal, “energy management” and “intelligent machinery and equipment” are nominated as the two key focusing areas for the future.

In the energy management field, it is important to develop the technology for renewable energy with minimal environmental impact, as outlined in the United Nations Sustainable Development Goals (SDGs). We need to find ways to reduce the environmental burden of existing energy infrastructure, while at the same time developing more environmentally friendly energy sources such as hydrogen and ammonia, algae-based biofuels, and tidal energy.

**Strategy**  
- Creating Value for Businesses and Society -

**Challenge**  
- Creating Value for the Future -

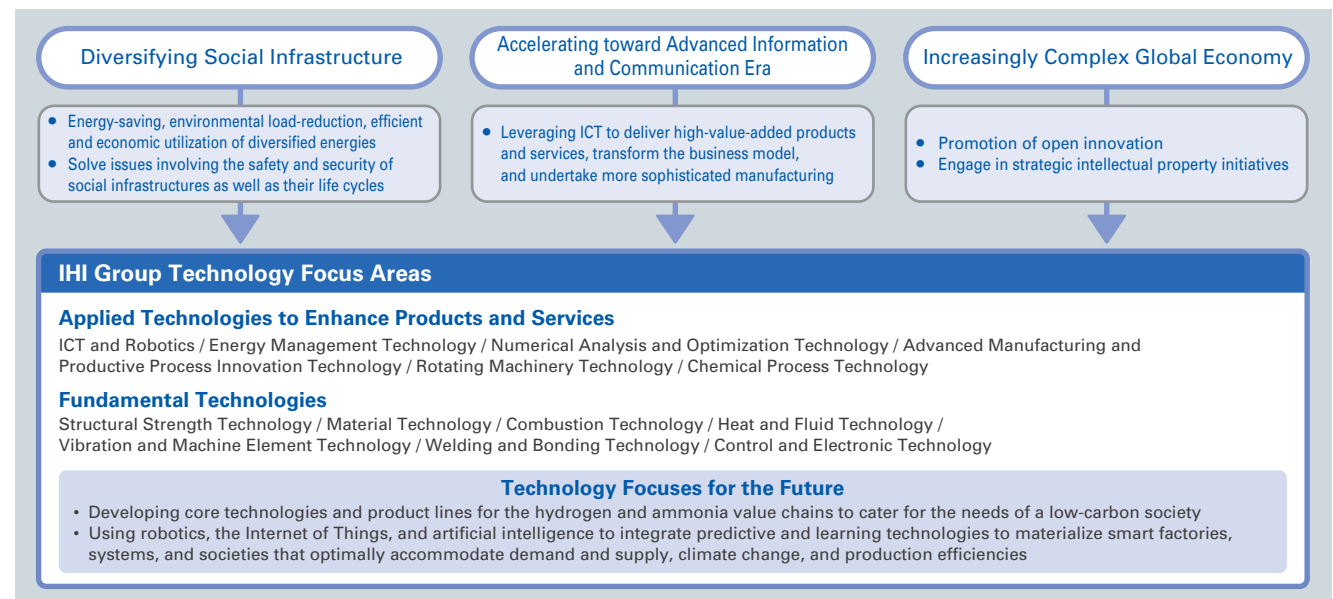
**ESG Management**  
- The Foundation of Sustainable Growth -

We use the term “intelligent machinery and equipment” to refer to products and services that incorporate elements of IT functionality and are able to make decisions and perform autonomously in certain respects, thus achieving a more natural form of collaboration with their human operators. This is the concept behind the “smart factory” as well as the public infrastructure of the future.

To proceed technological development, we actively embrace open innovation initiatives in wider society as the basis of collaborative and cooperative approaches.

### Realize your dreams

In line with our corporate philosophy “Using technology to contribute to the development of society”, developing new technology is the fundamental basis of our operations and indeed, as our core value to society. The quest for new technology represents the driving force behind the commitment and dedication of each and every employee, and the means to realize the dreams of the world.



# A Future Based on Technologies

## Generating new energy aimed at realizing a low-carbon society

In order to reduce greenhouse gases for preventing global warming and realizing a sustainable low-carbon society, we are engaged in the research and development of new energy.

### Hydrogen-ammonia value chain

Hydrogen utilization network connected via ammonia

### IHI Group's vision for a future hydrogen society

In the future, amid increasing electric power demand around the world, it goes without saying that balancing the convenience of living and global environmental protection requires changing an energy source.

As one of the solutions to this issue, hydrogen is increasingly used as a clean energy source that does not emit CO<sub>2</sub> during its use. To expand the use of hydrogen, it is necessary to develop infrastructures that allow users to easily access hydrogen. We will manifest our group's overall ability to build a value chain that connects activities ranging from producing hydrogen to using it.

### Producing, transporting and storing hydrogen

Currently, hydrogen is mainly produced by heating natural gas and petroleum, and in during the production process, CO<sub>2</sub> is emitted. To resolve this issue, we are striving to develop a method for efficiently electrolyzing water by using unused waste heat as well as renewable energy such as photovoltaic power generation. Furthermore, in Indonesia, we are proceeding with demonstrating technology for producing hydrogen from biomass by means of the twin IHI gasifier TIGAR®.

Hydrogen is less likely to liquefy and likely to make metal

fragile; therefore, the high cost to transport and store it has become an issue. As a carrier for efficiently transporting hydrogen, we are focusing on using ammonia (NH<sub>3</sub>), which is converted from hydrogen.

Ammonia has high hydrogen content per volume and is likely to liquefy. In addition, ammonia has been distributed as a fertilizer or chemical raw material and its transportation infrastructure has already been developed, providing a big advantage for implementing in society. To realize a hydrogen society early on with minimal capital investment, we are also focusing on developing technology for using ammonia in various scenarios.

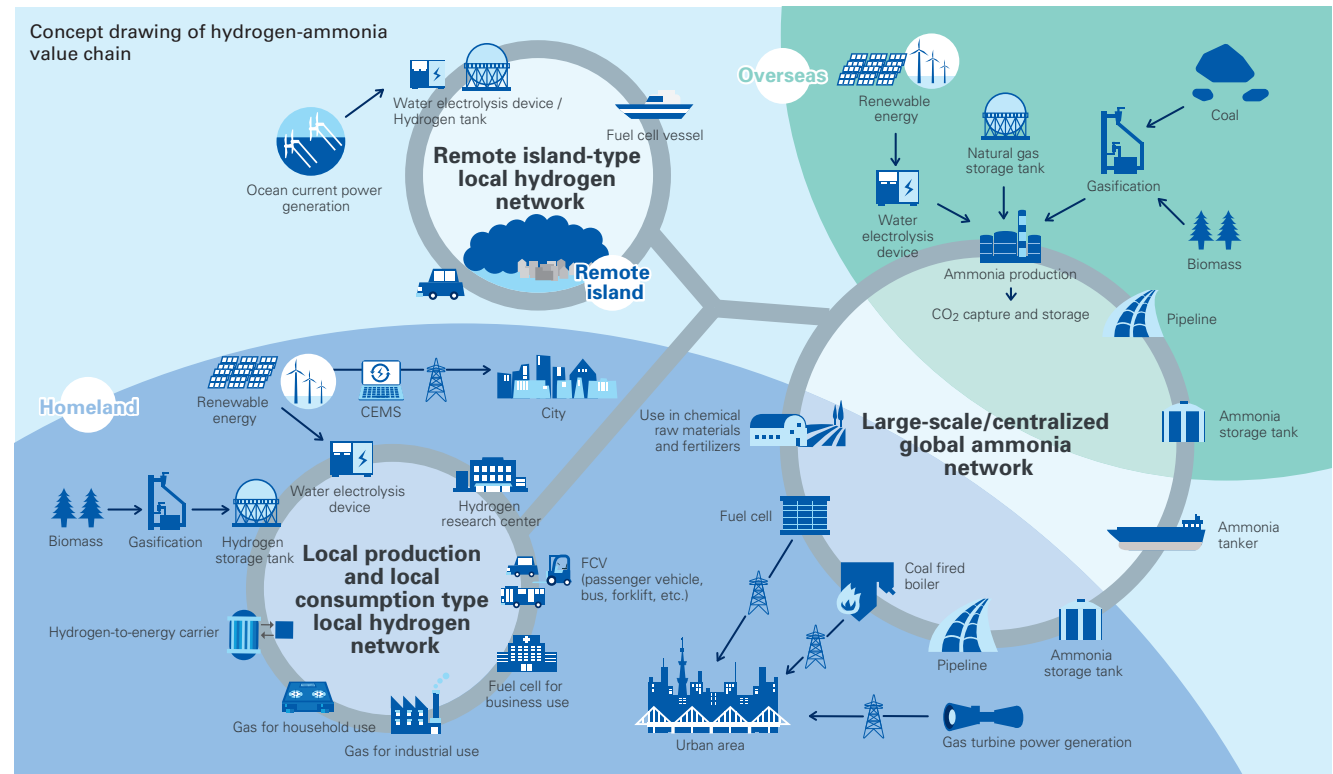
### Pursuing the possibility of ammonia as fuel

As part of using ammonia, we are striving to use it as fuel for boilers and gas turbines. Since ammonia, as with hydrogen, does not emit CO<sub>2</sub> during its use, it is possible to reduce CO<sub>2</sub> emissions by using ammonia instead of coal and LNG. We have established a technology for stably burning ammonia while suppressing the production of NOx (nitrogen oxide). Going forward, we will accelerate our efforts to commercialize this technology by field-testing power generation by 2-MW class gas turbines as well as carrying out co-firing tests with ammonia injected in coal boilers and other tests.

**Strategy**  
- Creating Value for Businesses and Society -

**Challenge**  
- Creating Value for the Future -

**ESG Management**  
- The Foundation of Sustainable Growth -



# A Future Based on Technologies

## Strategy

- Creating Value for Businesses and Society -

## Challenge

- Creating Value for the Future -

## ESG Management

- The Foundation of Sustainable Growth -

## Algae biofuel

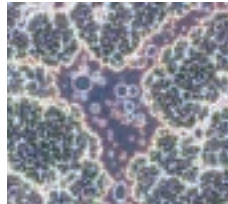
— Development of MOBURA next-generation energy source —

### What is algae biofuel?

Since 2011, IHI has been collaborating with Chitose Laboratory Corp. and Gene & Gene Technology to develop an algae biofuel, named MOBURA, as an energy substitute for fossil fuels.

In the production of conventional biofuels, ethanol is produced by saccharifying and fermenting food materials such as corn and sugarcane. Algae biofuel, however, is produced by collecting and refining oil that is produced by the non-food algae, so there is no impact on the food market. Moreover, the algae absorb CO<sub>2</sub> as they multiply, so they also help to combat global warming.

The International Civil Aviation Organization (ICAO) has set a goal of halting further increases in CO<sub>2</sub> emissions from 2020 onward (Carbon Neutral Growth 2020), so sustainable biofuel such as MOBURA is expected to play a significant role in the achievement of this goal.



Oil seeping out from algae

### Approaching practical use

Using an alga called Botryococcus, IHI is developing ideal varieties suitable for industrial production as well as devising optimal production processes. To support efforts to accelerate practical application, Japan's New Energy and Industrial Technology Development Organization (NEDO) has been supporting IHI since 2012. In 2015, stable cultivation of algae was achieved at a test facility equipped with a 1,500 m<sup>2</sup> culturing pond in southern Japan. In April 2017, IHI was commissioned by NEDO to participate in the Technology Development of Full-Scale Manufacturing Process for Biojet Fuels project. Going forward, aiming to convert MOBURA into biojet fuel, IHI will construct

an extra-large cultivation facility overseas and proceed with initiatives to demonstrate long-term continuous operation and reduced production cost.



Outdoor cultivation facility (Kagoshima Prefecture, Japan)

## Ocean current power generation

— Generation of electric power from flow of Japan Current —

### What is ocean current power generation system?

Japan, a seafaring country surrounded by sea on all sides, is being required to accelerate use of marine renewable energy in terms of response to global warming and energy security. As such, we envisioned a large-scale power generation farm in which turbines floating on water are turned by the energy of ocean current such as the Japan Current flowing along Japan's coast to generate electric power, and with support from NEDO since 2011, we have been engaged in the technical development of an ocean current power generation system. As ocean energy is less subject to seasonal and temporal variations, it is possible to generate power at high facility operation rates of at least 60% throughout the year.

### Integrating IHI Group's technologies

The ocean current power generation system at the practical use stage is a large structure with a floating part 100 meters wide, a

turbine blade with a diameter of approx. 40 meters and weighing 1,000 tons. Each system generates electric power of 2,000 kW. In manufacturing this system, our proprietary technologies including manufacturing techniques of floating bodies accumulated from our ship building business as well as material technologies and processing technologies developed in our aircraft engine and rocket business have been leveraged. Furthermore, employing the self-control function technology that maintains the correct



Picture of underwater installation of floating-type ocean current power generation system

posture by perceiving the surrounding condition and floats the system to the sea surface in case of emergency enables a stable and secure power supply.

### World's first field test in Japan Current ocean area

In July 2017, we completed a 100-kW demonstration machine. This machine was named Kairyu and was chosen from submissions for the name from elementary school and junior high school students in Toshima Village in Kagoshima Prefecture. We conducted the world's first field test of a floating-type ocean current power generation system in the 100-kW class in the waters off Kuchinoshima Island (Kagoshima Prefecture), and we successfully generated power. We will leverage the success of this test looking to put this system, which efficiently and economically uses ocean current energy, into practical use in 2020.



Demonstration machine Kairyu mounted on barge for transportation use



Scene of towing Kairyu

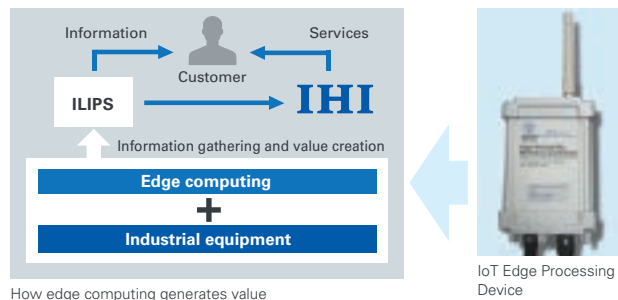
# A Future Based on Technologies

## A world in which people and machines work together

We can generate new value propositions in products and services by using AI, robotics and other advanced technologies as well as the IoT, where various things are connected via the Internet.

### Generating social value from Big Data

The IHI Group is working on new services that use the common platform, ILIPS. By analyzing operational data from industrial machinery installed at customer premises, we can generate optimal operation schedules and other recommendations designed to maximize operating consistency and productivity. The IoT Edge Processing Device under development represents a further extension of ILIPS featuring IoT and AI technology. Preceding the usage of the Internet or public telephone lines, the edge computing process analyzes huge volumes of operating data generated by nearby industrial equipment and extracts the salient information and attributes at high speed. Incorporating edge computing into ILIPS generates more value by processing more data quickly. In this way, the IHI Group generates genuine social value from Big Data by IoT and AI technology.



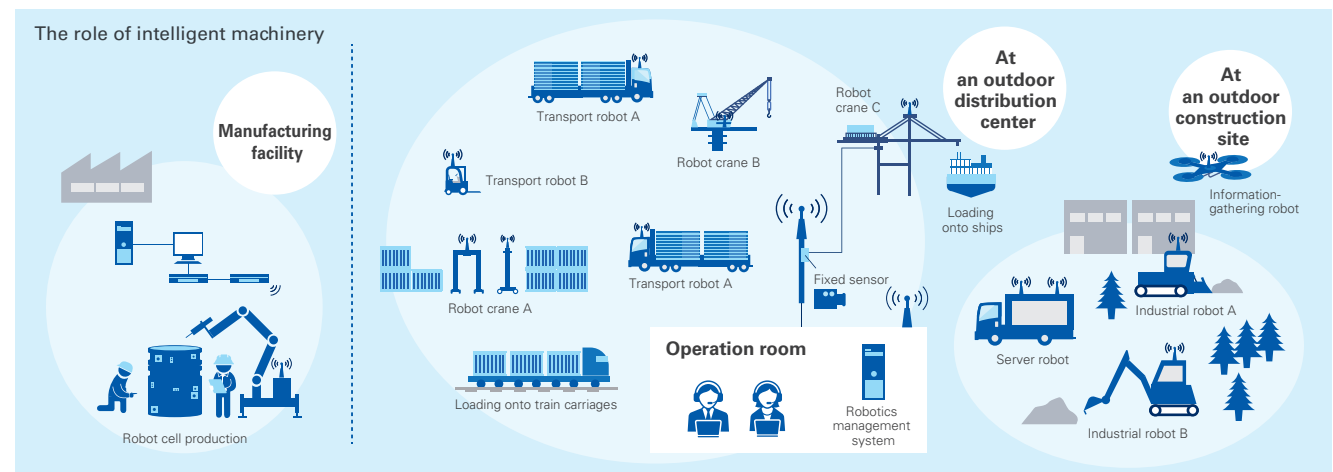
### Robotics

#### Intelligent machines will transform manufacturing and the workplace

At IHI Group, we have a vision of the future where humans and machines work together with complementary abilities and qualities.

In the manufacturing sector, simple tasks such as transportation and welding have already been robotized to boost productivity and compensate for labor shortages. But at IHI, we believe that more complex tasks such as assembly and machining can also be automated by truly intelligent industrial machinery and intelligent industrial machinery replaces skilled workers. After a human operator teaches a robot the skills and techniques used to perform a certain task, the resulting learning data can instantly be copied across to multiple robots, generating significant efficiency improvements. Furthermore, the learning is preserved as data and will never be lost.

IHI is also working on an unmanned (automated/remotely controlled) system designed for outdoor applications and disaster response tasks, as well as for working underwater or in inaccessible spaces. The system consists of multiple intelligent



### Strategy

- Creating Value for Businesses and Society -

### Challenge

- Creating Value for the Future -

### ESG Management

- The Foundation of Sustainable Growth -



Backhoe with Robo QS



machines that are remotely monitored and controlled from a protected control room.

The Robo QS, developed by IHI in a joint project together with Fujita Corporation and the Kyushu Technology Office of the Kyushu Regional Development Bureau of the Ministry of Land, Infrastructure, Transport and Tourism, represents the first step towards the unmanned system. In 2017, the Robo QS was fitted to the operator's seat of an industrial backhoe digger and successfully completed a number of tasks via remote control. This technology has considerable potential for post-disaster response tasks, which can be dangerous.

We hope to boost development in which our systems will be used as part of social implementation such as the figures below by 2020.



# A Future Based on Technologies

## Drive innovation in IHI Group through the collaboration with customers

The IHI Group is to promoting the innovation based on shared ideas to create new value with companies, universities and research institute in Japan and around the world.

### Promoting innovation driven by IHI Tsunagu Lab.

IHI Tsunagu Lab., IHI Innovation Centre, was launched in 2014 as the hub for open innovation of IHI Group. It has already hosted more than 7,000 visitors over the first three years.

Innovation is like a process of fitting together the pieces of a jigsaw puzzle such as technologies and many other types of aspects. As we search for the missing pieces, we hold technology seminars actively for matching our needs and solutions with external organizations. We also hold Sessions with people from various businesses are to inspire the future of society and businesses. The Sessions provide us an opportunity to inculcate innovative mind and to discuss what needs to be done now for the future.



Future session in progress

### Promoting innovation driven by Technological Attachés

The dispatch of Technological Attachés has been started since 2007. They work as the liaison of technology information in four key locations: London, New York, Silicon Valley and Singapore. Their role is to cultivate global R&D networks with companies and universities, and to promote the innovation basing on a unique perspective in their each region.

#### Technological Attachés for the United States of America (Since 2007)

The Technological Attachés based in North America are focusing on strengthening networks in the fields of ICT, robotics and renewable energy, which are currently most attractive for inventors in the United States at the moment. They are also promoting collaboration to create new value and to develop new products and business.

#### Technological Attachés for Europe (Since 2007)

The Technological Attachés for Europe are focusing on collaborative arrangements with universities and research institutes that are working on cutting-edge technology research and production systems. They are also promoting research into revolutionary materials, advanced production and testing systems.

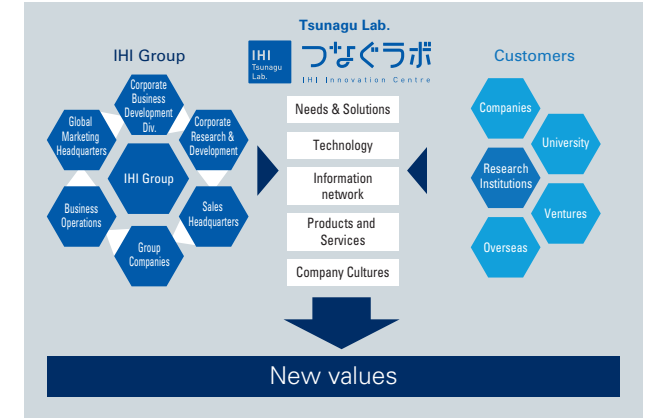


Tsunagu Lab. exhibit: "Inspiration Area"

**Strategy**  
- Creating Value for Businesses and Society -

**Challenge**  
- Creating Value for the Future -

**ESG Management**  
- The Foundation of Sustainable Growth -



#### Technological Attachés for Asia-Oceania (Since 2011)

The Technological Attachés for Asia-Oceania is evolving closer ties with the Agency for Science, Technology and Research in Singapore by conducting joint development projects which are lined to commercial applications directly. For example, it can be included, field testing of a 3-D Laser Radar with positioning and object configuration, production line automation and monitoring systems.

IHI creates innovation to solve the technological challenge in the society, promoting innovation by IHI Tsunagu Lab. and Technological Attachés.

Roundtable discussion |

## The Challenge of Creating New Value

Innovative creation is essential for IHI's sustainable growth in the future. The key to creating new business, and the mission of our headquarters, is to interconnect technologies and people both within and without IHI. With this in mind, the heads of our respective headquarters met to exchange views on how to create new value at IHI.



Executive Officer  
General Manager of Global  
Marketing Headquarters

**Koji Yahagi**

Executive Officer  
General Manager of  
Intelligent Information  
Management Headquarters

**Yukiya Murano**

Executive Officer  
General Manager of  
Solution & Engineering  
Headquarters

**Hiroshi Kunisada**

### The roles of our headquarters

**Mr. Kunisada** IHI comprises four business areas, as well as Strategic Business Units, or SBUs that plan, propose and implement business strategies. I am in charge of the Solution & Engineering Headquarters, which works to interconnect related business areas. To date, my team and I have reformed our business model from sales of standalone products from individual SBUs to the delivery of packaged offerings encompassing everything from initial finance to actual operations.

**Mr. Murano** The mission of the Intelligent Information Management Headquarters is to link IoT with products and services to create all-new offerings that increase customer value. For example, ILIPS is our proprietary remote-monitoring shared platform tracking the operational status of products that have been delivered

to customers. By analyzing operational data, the platform enables us to predict failure, notify customers when parts need replacement, and advise customers how to optimize operating procedures. We also incorporate IoT in manufacturing to make our factories smarter for improved productivity and quality.

**Mr. Yahagi** The role of the Global Marketing Headquarters is to better connect IHI's diverse businesses with the global market. We are responsible for overseas marketing, streamlining our overseas business bases and implementing overseas strategies in coordination with IHI business areas and SBUs. Another mission is to identify businesses that do not clearly belong to any SBUs and then nurture their global businesses potential. In China, Singapore and the U.S., we have established regional headquarters to strengthen

our bases in these markets by securing our positions and then expanding our businesses.

**Mr. Murano** The three headquarters were formed after we had determined that it was inefficient for each SBU and group company to separately prepare the equipment and operations needed for their own businesses. Our headquarters are overarching organizations that tie everything together, so we now are using them to avoid the wasteful duplication of equipment and operations used commonly within our group companies. Another important function of the headquarters is to work closely with each business division to swiftly share best practices with other SBUs.

### Fostering a culture of challenge

**Mr. Kunisada** After establishing our headquarters in April 2013, for about the first two years we pushed each SBU to produce as many success stories as possible. As our initiatives gradually took hold, this helped to stimulate our organizational strengths. I am now observing SBUs and group companies working ever-more closely with one another.

**Mr. Murano** We are connecting more and more products to the ILIPS platform that I mentioned; the figure rose to approximately 700 in FY2016. We predict that more than 1,000 products will be connected to the platform within FY2017. This will include a growing range of flagship products, such as aero engines, logistic systems, general-purpose boilers and heat treatment/surface engineering.

**Mr. Yahagi** By strengthening communication with our SBUs, we are developing new opportunities in the global

# A Future Based on Interconnections

market. For example, we hold regular meetings attended by senior personnel from each base, which helps us to confirm SBU marketing managers on the same page as us regarding strategy.



## Mr. Murano

As our people start to see the tangible results of such efforts, they became increasingly motivated to collaborate in the creation of new products and services.

## Connecting internal and external personnel

**Mr. Kunisada** At the Solution & Engineering Headquarters, we actively utilize outside know-how and resources to create packaged offerings for customers. In terms of the packaged offerings, we are increasingly entering new fields where we have had limited experience, such as project financing and insurance arrangement, where we would have trouble responding quickly if we were to attempt to handle everything internally. In the future, I envision more cases of us partnering with external experts to create new products and services. To do this, however, we will need to train more internal personnel to develop capability to manage such projects.

**Mr. Murano** The Intelligent Information Management Headquarters used to manage data analysis internally, but now, partly due to the higher number of projects, we are actively utilizing outside resources as well as adding internal personnel. We need the diversity of outside expertise when we enter new domains and areas, such as artificial

intelligence. Moreover, we have established a Chief Digital Officer, or CDO, in each business area from this fiscal year. The new CDOs are responsible for devising IoT strategies and human-resource develop policies in their respective business areas.

**Mr. Yahagi** The Global Marketing Headquarters is working to increasingly employ and develop locally hired personnel. To encourage local hires to remain with us over the long term, we educate them about our company and help them to develop their careers, enhance their skills and interact closely with other employees.

## Expanding our joint potential with customers

**Mr. Kunisada** At the Solution & Engineering Headquarters, we work hand-in-hand with stakeholders in each community under the motto of “contributing to the region through business.” In Kagoshima Prefecture, for example, we established a joint venture with local entities to generate power with biomass fuel and then sell it to electrical utilities. Also, in Fukushima Prefecture, we are supporting business opportunities to invigorate the local economy, including participation in the Soma



Smart Community Establishment Project to produce photovoltaic power for local consumption.

**Mr. Yahagi** We need to become more flexible in providing solutions that basically focus on manufacturing but also exceed conventional

boundaries to meet the broadest possible needs of customers. In the realm of overseas public-private partnerships, for example, this past April a joint venture that we formed with the Myanmar government began operating a factory to produce high-strength prestressed concrete for bridge girders and piles. In other words, we are helping Myanmar with industrial development and jobs creation as well as infrastructure construction. It is a group-wide effort that includes the participation of SBUs.

## Mr. Murano

I believe that increased collaboration between our SBUs and headquarters will enable us to offer greater value to customers. Having relevant SBU personnel join us when we visit customers enables us to identify needs and opportunities that we hadn't realized existed. This plays into one of our key roles, which is to provide customers with new perspectives. By digging deeper to pinpoint the value customers truly seek, I believe we can expand IHI's overall potential. The role of headquarters is like that of a mountaineering guide who helps climbers overcome challenges to reach the summit. Whenever we attempt to navigate an uncharted business territory, the headquarters needs to provide its business area and/or SBU with reliable guidance and support.

**Going forward, we intend to continue taking on such challenges, aiming to strengthen internal collaboration and expand our Group potential, and our customers' potential too.**





# A Future Based on Interconnections

**Strategy**  
- Creating Value for Businesses and Society -

**Challenge**  
- Creating Value for the Future -

**ESG Management**  
- The Foundation of Sustainable Growth -

## Global Marketing

### Concrete-manufacturing joint venture in Myanmar

Concrete-manufacturing joint venture in Myanmar  
In April 2017, I&H Engineering Co., Ltd., a joint venture between IHI Asia Pacific Pte, Ltd. and the Department of Highways in Myanmar's Ministry of Construction, completed a factory for the manufacture of concrete products in Yangon.

There is strong market potential for high-strength concrete structures in Myanmar, a country that experiences frequent earthquakes, like Japan. The factory manufactures bridge girders, building piles, building material and so forth using prestressed concrete for increased structural strength.

Leveraging technology developed by IHI in Japan, we aim to contribute infrastructure construction in Myanmar's growing economy, as well as meet their expectations for technical transfer and human-resource development.

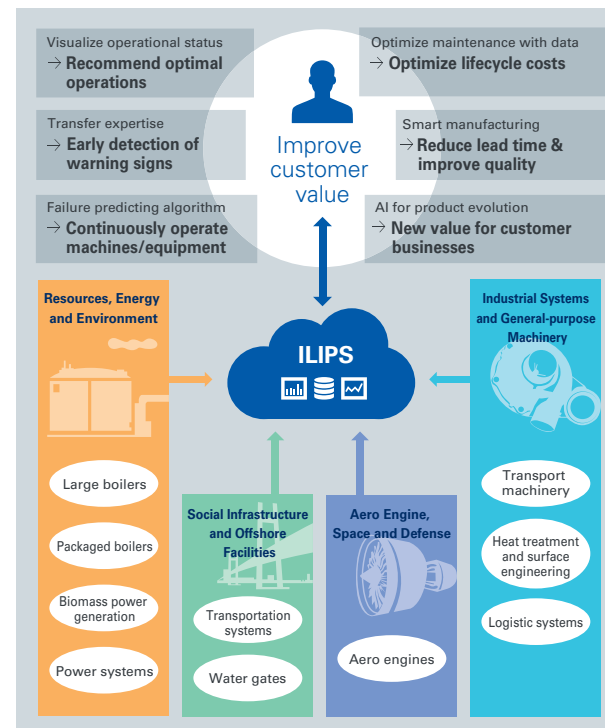


At the opening ceremony

## Intelligent Information Management

### Remote monitoring shared platform (ILIPS)

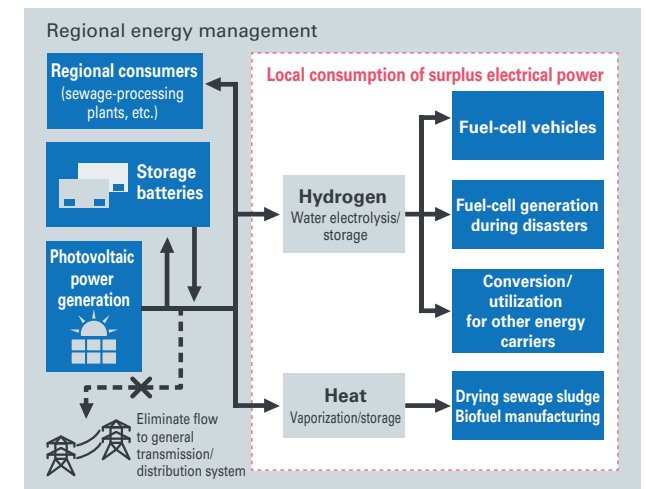
IHI's remote-monitoring shared platform (ILIPS) is used for services that accumulate and analyze data on the operation of IHI products at customer premises. Through analysis, we can assess the operational status of IHI products to predict failure, schedule preventative maintenance and recommend operational procedures for optimal performance, thereby helping customers to strengthen their own quality and productivity. Moreover, by incorporating AI and machine learning for advanced data analysis, we can add new value to our customers' businesses.



## Solution & Engineering

### Soma Smart Community Construction Project

With the concept of "Local Production & Local Consumption" "Disaster Prevention" and "Revitalization of Local Economy", IHI develops a business model of "local production and local consumption of photovoltaic electrical power", in collaboration with Soma City of Fukushima Prefecture, where IHI's Soma Works is located. Specifically, we aim to develop the community-driven self-sustaining business models, through establishment of local production / consumption model of photovoltaic power within the boundary of Soma City, utilizing regional energy management system. The excess power will then be converted into hydrogen and heat, to be used for processing of sewage sludge into biofuel as well as for fuel cell for power production during disasters. In the future, we hope to collaborate with hydrogen research institutions and hydrogen-related businesses to help communities transition from post-disaster reconstruction to economic revitalization.



# ESG Management

- The Foundation of Sustainable Growth -

Directors and Audit &  
Supervisory Board Members

P33~

Corporate Governance

P35~

Human Resources

P39~

Supply Chain Management

P41~

Environment

P43~

Compliance

P45

Risk Management

P46

CSR Management

P47~



## Directors



**Tamotsu Saito**

Chairman of the Board



**Tsugio Mitsuoka**

President

Chief Executive Officer  
Chairman of Nomination  
Advisory Committee



**Toshinori Sekido**

Executive Vice President

Assistant to the President  
In charge of Priority New Business Areas  
In charge of Group Engineering  
In charge of Business Relating to  
Human Resources, Information  
Management, and Corporate  
Business Development  
Member of Compensation Advisory  
Committee



**Ichiro Terai**

Executive Vice President

Senior Executive Officer  
Assistant to the President  
President of Social Infrastructure &  
Offshore Facilities Business Area  
In charge of Group Business  
Process Platform



**Hiroyuki Otani**

Director

Managing Executive Officer  
President of Resources, Energy  
and Environment Business Area  
In charge of Business Relating to  
Procurement



**Mikio Mochizuki**

Director

Managing Executive Officer  
President of Industrial Systems and  
General-Purpose Machinery Business Area  
In charge of Business Relating to Public  
Relations and Investor Relations



**Tomoharu Shikina**

Director

Managing Executive Officer  
President of Aero Engine, Space  
& Defense Business Area



**Atsushi Kuwata**

Director

Managing Executive Officer  
In charge of Group Operations  
General Manager of Sales  
Headquarters



**Takeshi Yamada**

Director

Executive Officer  
In charge of Group Finance & Accounting  
General Manager of Finance &  
Accounting Division  
Member of Compensation Advisory  
Committee



**Kazuki Awai**

Director

Executive Officer  
In charge of Business Relating to  
Legal, CSR, and Administration  
In charge of Group Compliance  
General Manager of  
Administration Division

# Directors and Audit & Supervisory Board Members

## Strategy

- Creating Value for Businesses and Society -

## Challenge

- Creating Value for the Future -

## ESG Management

- The Foundation of Sustainable Growth -

### Directors



#### Taketsugu Fujiwara

Standing Counselor, Asahi Kasei Corporation

Outside Director

Chairman of Compensation Advisory Committee

Member of Nomination Advisory Committee

#### Reasons for nomination

Mr. Fujiwara gained extensive experience and broad insight at the helm of a general chemicals manufacturer, where he promoted diversified management.



#### Hiroshi Kimura

Advisor, Japan Tobacco Inc.

Outside Director

Member of Compensation Advisory Committee

Member of Nomination Advisory Committee

#### Reasons for nomination

Mr. Kimura offers extensive experience and broad insight as a business manager who has implemented globalization strategies in response to a changing business environment.



#### Kazuhiko Ishimura

Chairman, Asahi Glass Co., Ltd.

Outside Director

Member of Compensation Advisory Committee

Member of Nomination Advisory Committee

#### Reasons for nomination

Mr. Ishimura brings extensive experience and broad insight after heading a comprehensive materials manufacturer.



#### Yayoi Tanaka

Representative of Social Governance Research Institute

Outside Director

Member of Nomination Advisory Committee

#### Reasons for nomination

Ms. Tanaka possesses specialist knowledge and diverse experience in evaluating and researching nonprofit organizations and participating in governmental committees.

### Audit & Supervisory Board Members



#### Shigeru Uesugi

Standing Audit & Supervisory Board Member



#### Taizo Suga

Standing Audit & Supervisory Board Member



#### Takayuki Hashimoto

Honorary Advisor to IBM Japan, Ltd.

Outside Audit & Supervisory Board Member

Member of Compensation Advisory Committee

#### Reasons for nomination

Mr. Hashimoto offers independent insight based on ample experience and knowledge gained as the manager of a state-of-the-art IT company.



#### Yoko Hatta

Auditor at International Christian University

Outside Audit & Supervisory Board Member

#### Reasons for nomination

Ms. Hatta contributes independent insight based on extensive experience with and knowledge of global business, primarily in regard to international taxation.



#### Tomomi Yatsu

Partner, TMI Associates

Outside Audit & Supervisory Board Member

#### Reasons for nomination

Ms. Yatsu brings independent insight based on extensive experience and insight based on his involvement with corporate matters as an attorney at law and certified public accountant.

## Basic Stance

IHI Corporation defines corporate governance as a system that assures sustainable growth and maximization of corporate value by enhancing management efficiency so that the corporation can leverage its innate capabilities to the fullest extent possible. To achieve this, IHI Corporation targets efficient and appropriate internal decision-making by clearly separating management monitoring and supervisory functions from functions related to their execution of duties. Furthermore, by establishing relevant internal rules and building a system to administer them, IHI ensures appropriate operations across the entire Group. IHI Corporation promotes constant improvement of its corporate governance, aiming to earn the trust and support of its shareholders and other stakeholders over the long term.

### Basic Policies for Enhancing Corporate Governance

The company will work to enhance its corporate governance in line with the following basic policies.

- ① Respect shareholders' rights and ensure equal treatment
- ② Strive to cooperate appropriately with shareholders and other stakeholders
- ③ Fulfill our responsibility to be accountable to stakeholders and ensure transparency by appropriately and proactively disclosing information relating to the company
- ④ Clarify the roles and responsibilities of the board of directors, the audit & supervisory board members and the audit & supervisory board to enable them to adequately fulfill their management-monitoring and supervisory functions
- ⑤ Conduct constructive dialogues with shareholders whose investment policies accord with the medium- to long-term interests of shareholders

## Focus

### Evaluating the Board of Directors

IHI has evaluating its board of directors annually since FY2015 to raise the board's effectiveness. The same evaluation will be carried out in FY2017 as well.

The evaluation is performed as follows:

- An external consulting company administers an anonymous questionnaire to all directors and audit & supervisory board members. Items covered by the questionnaire include the board's composition and operation, risk management, and culture.
- The external consulting company collects and analyzes the questionnaire responses.
- All relevant officers are interviewed regarding the questionnaire and the analyzed responses. Furthermore, a panel comprising mainly outside officers exchange views.
- The results of the above process are brought together in the form of a self-evaluation by the board of directors to identify points for improvement.

### Board of Directors Evaluation and Future Initiatives

#### Response to FY2015 evaluation

The FY2015 evaluation recognized issues such as the need to discuss risk more thoroughly and to increase the time available for deliberating key agenda items at board of directors meetings. In response, besides enhancing business-execution reporting, in October 2016 IHI Corporation revised the items to be resolved/reported at board meetings and developed a new discussion agenda.

#### FY2016 evaluation and policy for response

The aspects recognized as strongpoints in the FY2015 evaluation, such as the transparency of board operations and discussions as well as adherence to compliance-related requirements, were recognized to have maintained their high level in the FY2016 evaluation. In addition, the board was evaluated to have effectively resolved the FY2015 key issues, such as specifically targeted improvements.

However, it was recognized that the board needs to enhance discussions by securing time for crucial measures and effectively using written proposals and explanatory materials, etc.

The IHI Corporation's board of directors will continue to enhance its effectiveness by implementing measures to resolve such issues.

## Activities

### Corporate Governance System

#### 1 Board of Directors

The board of directors, which consists of 14 directors (4 from outside), makes decisions related to all important matters concerning the management of IHI Corporation and its Group, in addition to supervising directors in their business execution.

#### 2 Audit & Supervisory Board

IHI Corporation has an audit & supervisory board, which comprises 5 audit & supervisory board members (3 from outside) who audit the duties executed by directors.

#### 3 Business Execution Framework

IHI Corporation has an executive officer system to facilitate and strengthen the decision-making and supervisory functions of the board of directors, as well as to improve the efficiency

of business operations. Appointed by resolution of the board of directors, there are 25 executive officers, 8 of whom concurrently serve as directors.

#### 4 Compensation Advisory Committee

To ensure that directors and audit & supervisory board members are remunerated appropriately, IHI Corporation has the Compensation Advisory Committee, a voluntarily established body consisting of six members: three outside directors, one outside audit & supervisory board member, one director in charge of human resources, and one director in charge of finance and accounting. The chair is an outside director.

#### 5 Nomination Advisory Committee

IHI Corporation established a Nomination Advisory Committee to supervise the IHI representative director's nomination of candidates for directors and corporate auditors, checking that such appointments are conducted appropriately and offering related advice. The committee has five members: IHI's President and Representative Director, and four outside directors, with the President and Representative Director serving as chair.

### Organization of officers

2016

	Directors	Audit & supervisory board members	Total
Inside	10	2	12
Outside (ratio)	3 (23.1%)	3 (66.7%)	6 (33.3%)
<b>Total</b>	<b>13</b>	<b>5</b>	<b>18</b>

2017

	Directors	Audit & supervisory board members	Total
Inside	10	2	12
Outside (ratio)	4 (28.6%)	3 (66.7%)	7 (36.8%)
<b>Total</b>	<b>14</b>	<b>5</b>	<b>19</b>

### Policies Relating to Appointment of Officers

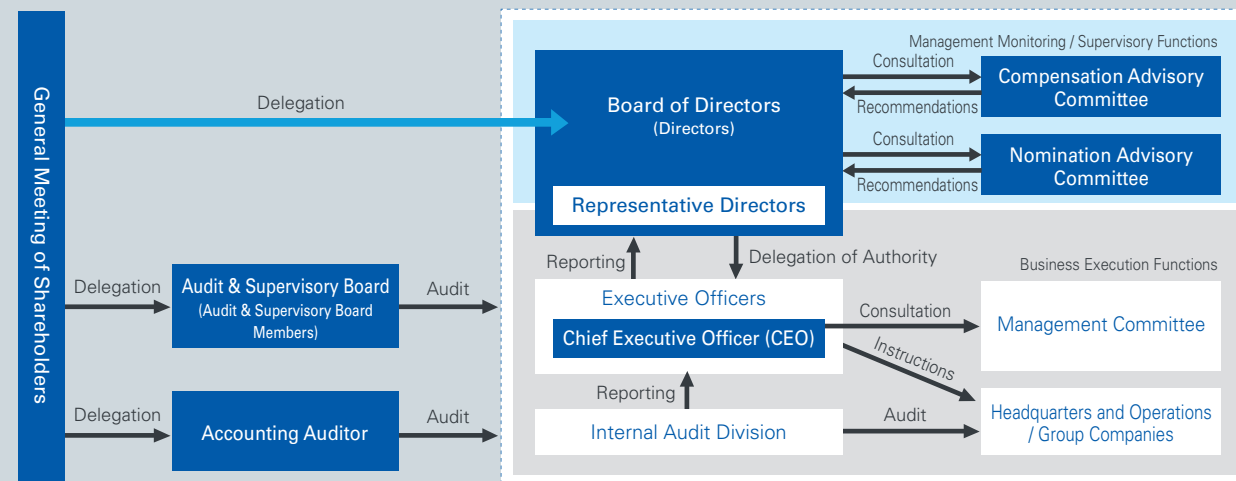
The board of directors decides on ideal attributes for officers and draws up standards of independence for outside directors and outside audit & supervisory board members. These standards are based on the requirements for independent directors/auditors stipulated by the Tokyo Stock Exchange. The emphasis is to assure that outside directors and outside audit & supervisory board members are genuinely independent. The board of directors sets the basic policy of appointing the most appropriate officers according to ideal attributes and independence standards for outside directors and outside audit & supervisory board members. The aim is to ensure sustainable growth and increased corporate value for the IHI Group over the medium to long term.

### Ideal Attributes for Officers

IHI Corporation appoints officers who are healthy in mind and body and have all of the following attributes:

- Deep understanding of, and empathy for, IHI Group's corporate philosophy and vision
- The ability to contribute to sustainable growth and medium- to long-term increases in corporate value by addressing societal issues in accordance with the IHI Group's vision
- Outstanding foresight, penetrating discernment, and ability to make appropriate decisions with regard to the management of the IHI Group
- Good character with a strong sense of ethics
- Ample experience as a corporate manager, or a high degree of specialist knowledge, combined with broad, global perspective and insight

Corporate Governance Structure (July 1, 2017)





## Policies and procedures in determining officer remuneration

In May 2017, IHI Corporation's board of directors revised the policy for determining the remuneration, etc. of officers as follows.

### 1 Basic policy on determining remuneration of directors (excluding outside directors) and executive officers

- 1 Remuneration shall be aimed at fully encouraging directors and executive officers to perform their duties in line with corporate philosophy, Group vision, and Group Management Policies, as well as strongly motivating them to achieve specific goals for the company's and the IHI Group's sustainable growth and improve medium- and long-term corporate value.
- 2 Remuneration shall be structured with the appropriate allocation of an annual incentive (performance-based bonus) linked to each fiscal year's operating performance, and medium- and long-term incentive (performance-based share-denominated remuneration) linked to medium- and long-term operating performance and corporate value. The aim is for them to broadly share a sense of value with stakeholders and thereby perform their duties with a sound entrepreneurial spirit.
- 3 Under the corporate philosophy, "Human resources are our single most valuable asset," appropriate treatment shall be provided to officers of the company in consideration of its business environment, roles in society, responsibilities and other factors.

### 2 Remuneration level and allocated ratios of remuneration

- 1 IHI Corporation shall regularly survey objective market data on remuneration researched by an specialized external institution, and set appropriate

remuneration levels.

- 2 In consideration of IHI Corporation's business, effectiveness of incentives, etc., the total amount of remuneration shall be allocated in the approximate proportions of 60%, 20%, and 20% to (i) a fixed base amount, (ii) an annual incentive (performance-based bonus) to be provided upon the achievement of the targeted performance, and (iii) a medium- and long-term incentive (performance-based share-denominated remuneration) to be delivered upon the achievement of the targeted performance, respectively.

### 3 Framework of incentive remuneration

- 1 The monetary amount of an annual incentive to be provided every fiscal year shall vary, depending on the achievement level, within an approximate range of from 0 to 200 under the assumption of providing the amount of 100 upon the achievement of the targeted performance. Performance evaluation indicators shall be those such as consolidated profit attributable to owners of parent, which is aimed at sharing the interests with shareholders, profitability emphasized in Group Management Policies 2016 (consolidated operating profit margin and operating profit margin of responsible business areas), and individual evaluation indicators corresponding to tasks assigned to each officer. The indicators shall be reviewed as necessary in response to changes in the business environment, officers' duties, etc.
- 2 The number of shares to be delivered every fiscal year as a medium- and long-term incentive shall vary, depending on the achievement level, within an approximate range from 0 to 150 under the assumption of delivering 100 shares upon the achievement of the targeted performance. The performance evaluation period shall be the coming three fiscal years. Performance goals for the final fiscal year shall be established in the initial fiscal year. The performance evaluation indicator shall be consolidated ROIC (return on invested capital), as emphasized in Group Management Policies 2016, and changes in the

indicator, if necessary, shall be taken into consideration when reviewing Group policies.

### 4 Procedures for determining remuneration

To ensure appropriateness and objectivity in determining the remuneration of directors and executive officers, the company has the Compensation Advisory Committee, a voluntarily established body consisting of six members: three outside directors, one outside audit & supervisory board member, one director in charge of human resources, and one director in charge of finance, with an outside director serving as the chair. The committee shall examine and report remuneration related to directors and executive officers, and the board of directors shall make final decisions.

### 5 Remuneration of outside directors and audit & supervisory board members

Remuneration for outside directors shall consist only of a base amount reflecting their duties. Remuneration for audit & supervisory board members shall consist only of a base amount as compensation for their responsibilities in auditing the execution of business throughout the IHI Group. The amount shall be determined through discussions among the audit & supervisory board members.

Remuneration of officers in 2016 (millions of yen)

Position	Number of recipients	Breakdown			Total Amount Paid
		Base amount	Share-denominated compensation	Performance-based bonus	
Directors	19	479	66	0	546
Audit & Supervisory Board Members	7	108	-	-	108
Total (of which, outside officers)	26 (8)	587 (72)	66 (-)	0 (-)	654 (72)

Notes

1. Remuneration of directors does not include salaries of those who are also company employees.
2. The maximum total amount of each director's annual remuneration is set at 1,090 million yen (excluding employee salaries), as resolved at the 198<sup>th</sup> Ordinary General Meeting of Shareholders held on June 25, 2015. The maximum total amount of each audit & supervisory board members' remuneration is set at 120 million yen, as resolved at the 197<sup>th</sup> Ordinary General Meeting of Shareholders held on June 27, 2014.
3. The numbers of directors and audit & supervisory board members as of March 31, 2017 are respectively 13 (including 3 outside directors) and 5 (including 3 outside audit & supervisory board members). The reason for the discrepancy from the above is that figures in the chart include 6 directors and 2 audit & supervisory board members who retired at the conclusion of the 199<sup>th</sup> Ordinary General Meeting of Shareholders held on June 24, 2016.



## Message from an Outside Director



### Establishing IHI as a globally necessary company

#### Hiroshi Kimura

Outside Director

Hiroshi Kimura, having served as President & CEO and Chairman of the Board at Japan Tobacco Inc., possesses extensive experience and broad insight based on his active implementation of globalization strategies. Currently serving as an advisor to Japan Tobacco.

## Message

IHI has survived as an organization with a rich history and tradition of carrying out bold structural reforms. In the face of declining performance in recent years, the company has implemented necessary countermeasures to start climbing back up the ladder. Now is a prime time for IHI to take long strides in a positive direction.

IHI is dealing with the issue of strategically reorganizing its corporate resources. I feel that the company's scope is still too broad and that it must decide which businesses to maintain or withdraw from, with a greater sense of urgency for enhanced competitiveness. In growth areas that will serve as its future core, IHI must remain committed to long-term investment.

In this regard, the shift to an SBU system in April 2017 has made it easier to reallocate corporate resources. Going forward, IHI will need to muster its collective strengths by sharing basic technologies, customer information and so forth.

Another key will be the resolve of top executives to nurture the necessary managers. To ensure that employees achieve professional growth, they must be delegated responsibilities from a young age and given experience in various business areas, including overseas.

Looking to the future, global cities are destined to undergo broad changes in accordance with economic and technological advancements over the next 50 years. There is no limit to the areas where IHI can play an active role if it develops the technological strengths needed to build these new cities. I believe IHI can establish an irreplaceable global presence by leveraging its 'monozukuri' (manufacturing) power to help meet the vital needs of future society.

## Message from an Outside Audit & Supervisory Board Member



### Adjusting to change and responding swiftly

#### Yoko Hatta

Outside Audit & Supervisory Board Member

As a partner at KPMG Peat Marwick (present day KPMG Japan), Yoko Hatta acquired extensive experience and insight in global business focused on international taxation. She is currently serving as an auditor at International Christian University.

## Message

IHI helped to rebuild Japan's infrastructure following World War II. For IHI to continue advancing its business, it must leverage its solid track record and sophisticated technologies to respond with increasing speed to the rapidly changing global business environment.

Particularly when expanding its global footprint over a diverse range of business environments, there is an ever-mounting need to respond with multifaceted strength and flexibility. Rather than merely attempting to transplant methods from Japan, IHI must grasp the values and rules of any region where it conducts business and then respond with a global perspective.

Moreover, the company will be able to respond to change only if it remains flexible by constantly incorporating new concepts and diverse values. It is absolutely necessary to facilitate the participation of young employees, because they are so acutely aware of the changing times, as well as women who feel they still have not been able to fully demonstrate their talents. To encourage greater participation in the workplace by women, it will be important to create increasingly inviting work environments.

For IHI to make strides in a positive direction, it must enhance its unique strengths by fusing proprietary technologies and leading IoT. I would like to see IHI stay attuned to global changes so that it can adapt and respond swiftly whenever required.

## Without the growth of human resources, there would be no growth at IHI.



General Manager of Human Resources Division

**Masato Shida**

### Group Global Diversity

We are steadily strengthening human resources in keeping with our corporate philosophy of “human resources are our single most valuable asset.” Our Group Human Resource Management Policy emphasizes keyword concepts such as group, global, and diversity to define ideal qualities that we seek when hiring, assigning, training and evaluating employees.

As a provider of diverse products and services, IHI understands that group collaboration is critical to harnessing overall group strength. In both executive development and position-level-based training, we provide the opportunities not only for IHI employees, but also IHI group company employees.

As our business becomes more globalized, global leader development is also essential. IHI hires outstanding talents worldwide, not just in Japan, and offers employees language and cross-cultural understanding training to strengthen abilities to perform on the global stage.

Moreover, we believe diversity is important to foster diverse viewpoints and to create the organizational culture of creation and innovation. We are rolling out a broad range of measures focused on women, non-Japanese nationals, people with limited abilities and senior workers, aiming to create workplaces in which people representing widely varying individualities and values can maximize their potential.

### For a Strong, Flexible Organizational Structure

Structural reforms are being carried out according to our IHI Group Management Policies 2016 to ensure that we have the right person in the right place. Going forward, we will accelerate these reforms by increasing job mobility within the group.

We are also reforming our workstyles as one of a priority issues. In addition to being lean and standardizing tasks, we aim to thoroughly revise our work processes to improve employee productivity. To this end, we are establishing new ICT infrastructure and enhancing our work systems with systems for flexible work schedules and telecommuting. Such measures are helping to reduce work hours and create workplaces in which every employee feels increasingly motivated and empowered.

By creating environments in which diverse professionals can maximize their abilities, we expect to continue growing as a corporate group that values people — our single most valuable asset.

### Group Human Resource Management Policy

In line with IHI’s management principles and Group vision, IHI Group aim to create customer value through using engineering expertise to focus on Monozukuri technology by the following:

1. In order to become an enterprise with distinguished global professionals who strive to excel in Monozukuri Technology and engineering technologies with world-renowned high quality products, ideal human resources shall be enhanced and shall serve as a shared value for employees within the group.
2. Ideal human resources shall serve as the foundation for the establishment of HR management policies in order to provide employees with opportunities for development.
3. Providing a work environment where people of diverse backgrounds can demonstrate their abilities and are in tune with the management principles and Group vision of IHI.

### Ideal Human Resources

**Integrity and Trust**

**For Customers and Society**

**Innovation and Creation**

**Teamwork**

**World-class Professional**

### Keywords

**Group**

**Global**

**Diversity**

## Health Management Declaration

– Certified as an excellent company of health management

IHI has promoted to improve employee health, as one of the company's priorities. In October 2016, we announced the IHI Group Health Management Declaration to heighten employee awareness of health as well as publically declare our commitment to the society. As an indication of how highly these efforts were regarded, four Group companies — IHI Corporation, IHI Scube, IHI Plant Construction and Niigata Power Systems — were certified by the Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi (Japan Health Council)<sup>1</sup> as excellent companies of health management 2017.<sup>2</sup>



- 1 Japan Health Council: Organization established to help private companies and organizations develop activities to extend the healthy lives of employees and members, and manage medical fees.
- 2 Health & Productivity Companies 2017: A scheme run jointly by the Ministry of Economy, Trade and Industry and the Japan Health Council to commend both large and small-to-midsize enterprises that achieve outstanding health management.

## Promotion of Diversity

– Empowering Women in the Workplace

Every year, IHI holds the Seminar on Empowering Women in the Workplace for female managers, their superiors and human resource personnel. In FY2016, approximately 140 people from 27 IHI Group companies attended. The seminar, which includes female managers in panel discussions, group work and other activities, is an opportunity to brainstorm ideas on how to enhance workplaces and support the growth of female employees. IHI is committed to enable its diverse professionals to flourish at all levels, including offering working environments enhanced with flexible work schedules, and childcare services and much more.



Panel discussion

### Female managers (IHI Corporation)

FY	Number	Percentage of total
FY2014	51	1.8%
FY2015	60	2.1%
FY2016	66	2.5%
FY2017	68	2.6%
FY2018 target	—	3.0% or higher
FY2020 target	—	3.5% or higher

### Recruitment (IHI Corporation)

(female employees)

FY	FY2015	FY2016	FY2017
Engineering personnel	204 (24)	229 (21)	193 (19)
Administrative personnel	57 (23)	59 (19)	52 (16)
Total	261 (47)	288 (40)	245 (35)
Non-Japanese employees	9 (4)	7 (2)	8 (3)

## Development of Global Professionals

– Intensive Training in India

IHI's efforts to develop global leaders include intensive training in India organized for employees. From September to December 2016, a total of 30 employees participated in two courses, one which ran for two weeks and the other for six weeks.

The training focused on strengthening English language listening and speaking skills as well as cross-cultural understanding incorporating practical exercises based on actual business scenarios. In addition, opportunities were arranged to exchange opinions with local companies and conduct activities involving local students.

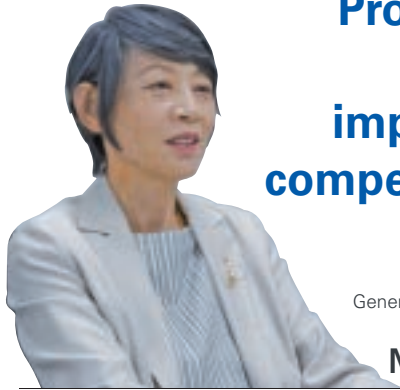


Activity with professors from SRM University in India

## Strengthening Technological Capabilities

– Advanced Experts Scheme

The IHI Group Advanced Experts Scheme is aimed at strengthening the Group's competitiveness by offering accreditation and other special treatment to people with expertise in strategic technologies or specialized fields. Special frameworks have been established under the scheme to assess experts and help them harness their unique capabilities. As of 2017, approximately 60 long-serving employees are advising IHI as company-recognized experts.



## Procurements aimed at improving our competitive edge

Managing Executive Officer  
General Manager of Procurement  
Strategy Planning Division

**Nobuko Mizumoto**

### IHI Group Procurement Activities

IHI's Group Procurement Policy is based on three core principles — fair and impartial procurement, mutually beneficial partnerships with business partners and satisfying compliance and societal needs.

The procurement of materials or equipment involves not only compliance with legal requirements but also consideration of human rights, the environment and conflict minerals<sup>1</sup>. In addition to education for employees, IHI also satisfies societal demands by educating suppliers for beneficial coexistence and co-prosperity.

Considering that IHI conducts business on a global scale, strategically sound supply chains are a vital part of the effort to achieve medium-terms goals. Under the current three-year business plan, IHI is focusing on three main activities.

<sup>1</sup> Minerals from conflict regions that, if purchased, sometimes result inadvertently in funding armed insurgents or fueling regional disputes.

### Efforts to Reduce Procurement Costs

IHI holds twice-annual Procurement Cost-reduction Case Study Presentations for the promotion of Group efforts to reduce procurement costs and share best practices. The presentations introduce outstanding internal examples of improving and standardizing procurement specifications, improving competitiveness by shifting to global multisourcing<sup>2</sup> and concentrated purchasing. At a presentation held in March 2017, 10 of the 86 case studies were deemed outstanding and were therefore specially commended and then shared within the Group.

<sup>2</sup> Framework for selecting optimal suppliers worldwide



Procurement Cost-reduction Case Study Presentation

### IHI Group Procurement Policy

#### 1. Fair and impartial procurement

IHI provides business opportunities in an open manner to business partners around the world, aiming to work with creative and competitive partners. Partners are evaluated and selected in a fair and comprehensive manner based on factors such as quality, price, delivery schedule, technology and financial conditions.

#### 2. Mutually beneficial partnerships

IHI regards partners as value creators. To secure optimal quality, prices and deliveries as well as reliable procurements, the company aims to establish relationships of trust with partners for mutual competitiveness and prosperity.

#### 3. Satisfying compliance and societal needs

IHI complies with all laws that govern its local and global businesses. IHI procurements give priority to consideration for the environment, human rights, labor conditions, occupational safety and health, and information management.

#### Request to Business Partners

IHI emphasizes the following values in its businesses and asks for the cooperation and understanding of partners in promoting these values.

- Compliance
- Paying attention to human rights, labor conditions and occupational safety and health
- Ensuring optimal quality, cost and delivery conditions
- Enhancement of competitiveness
- Respect for the environment
- Information disclosure



# Supply Chain Management

**Strategy**  
- Creating Value for Businesses and Society -

**Challenge**  
- Creating Value for the Future -

**ESG Management**  
- The Foundation of Sustainable Growth -

## Unified Procurement Network for All Business Areas

In FY2017, IHI established the Procurement Engineering Division to strengthen cooperation among individual business areas for optimized procurement. Value engineering is important for reducing costs as well as maintaining necessary functions and high-level quality. Product-specific Expert Councils have been established as cross-company organizations within IHI's Group companies. By sharing know-how and best practices from each SBU to develop effective solutions, the councils are producing steady results for the procurement of seven core products common to all SBUs, such as steel, bearings and electrical items.

Moreover, in line with our commitment to mutually beneficial partnerships, we are building win-win relationships by holding study groups with suppliers to improve production efficiency. Through initiatives that reach beyond the Group and by engaging in procurement activities from the perspective of what is best overall, IHI expects to create increasingly sustainable supply chains.

## Building a Global Procurement Network

Rolling out an international business requires companies to globally optimize their value chains, including by steadily reaching out to new suppliers. To formulate procurement plans suited to each of its business areas, IHI develops medium-term procurement strategies focused on connecting with new suppliers, among other priorities.

An emphasis is also placed on developing overseas procurement personnel. In study sessions organized at overseas bases, local staffers learn about procurement compliance, share information and study best practices.

Corporate social responsibility involves contributing to society and providing customers with reliable, trustworthy products and services. As part of this, companies absolutely must procure fairly and comply with all laws and regulations. IHI, a company that shoulders responsibilities as both a maker and user of goods, carefully manages its supply chains to ensure that they remain in step with relevant trends in global society.

## Overseas Procurement Network

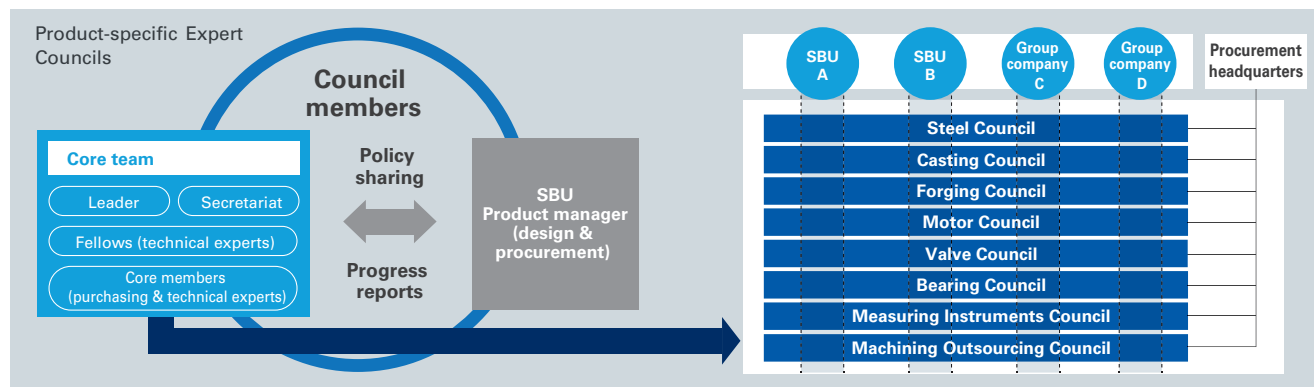


## Topics Together with Suppliers

IHI promotes enhanced collaboration by awarding suppliers who produce particularly outstanding accomplishments. In FY2016, we presented Tata Steel (Thailand) Public Co., Ltd. with an award of appreciation. Tata is a partner that supplies IHI with materials for plant construction. We recognized Tata for helping us to enhance a plant-construction project by providing high-quality products and flexible deliveries tailored to the project's progress.



Award ceremony in Bangkok  
Tata Steel (Thailand) Public Co., Ltd.







## Environmental management creates business opportunities

General Manager of Corporate Social Responsibility Division

**Chikako Oshima**

### Contributing to Global Environmental Sustainability

The risks posed by climate change are a global problem. As seen in the Paris Agreement, the Sustainable Development Goals (SDGs) and other trends, international society is building new frameworks to strengthen the global response to the threat of climate change. We are addressing to achieve our medium-term environmental management goals for FY2018. As part of this effort, we shifted to a strategic business unit organization in April 2017 to implement environmental management within a much wider framework than previously possible. Our diverse businesses include both those that help to stem climate change and those that address the effects of climate change. By responding to society's hopes for the beneficial effects of our technologies, we expect to increase our corporate value and expand the range of people who believe in our company. Moreover, by contributing to global sustainability through environmental initiatives, we are confident that this will create new business opportunities.

### Toward Enhanced Environmental Management

In FY2013, we announced IHI Group Environmental Vision 2013. The vision established three core eco strategies for the period lasting until FY2018: 1) reduce the environmental impact of products and services, 2) reduce the environmental impact of business activities and 3) strengthen environmental management. The plan was then updated in FY2016 to ensure that the vision is fully realized through enhanced environmental management.



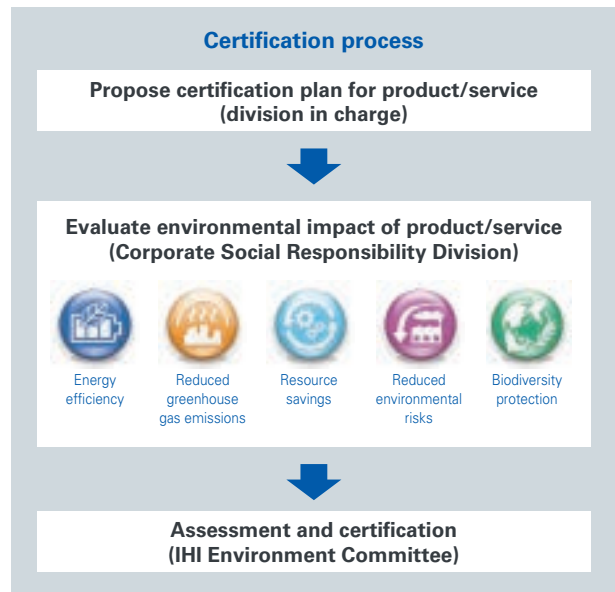
### FY2016 Results

FY2016 was the first year of the Group Environmental Action Plan 2016. Below is a list of the targets under the Plan and the results achieved in FY2016.

Activity Plan	FY2016 targets	FY2016 results
Reduce environmental impact of products and services	Reduce emissions from products and services by more than 10 million tons of CO <sub>2</sub>	More than 2.5 million tons
	Environmentally friendly products accounted for 70% of net sales	No. of certifications: 15
Reduce environmental impact of business activities	Reduce energy intensity and GHG emissions intensity by more than 3% compared to FY2015	Energy: 4% increased from FY2015 CO <sub>2</sub> : 0.9% increased from FY2015
	Reduce waste generation intensity by more than 3% compared to FY2015	0.5% increased from to FY2015
	Reduce water consumption intensity by more than 3% compared to FY2015	4.1% increased from FY2015
Promote group environment management	No major violation of environmental laws/regulations or environmental accident	No incident
	Environmental e-Learning participation rate: 100%	Participation rate: 84.3%
	Earn "management" or "leadership" rating in CDP climate change evaluation	Leadership level A-
	Nikkei Environmental Management Survey score of 400 or higher (out of 500)	429

## Environmentally Friendly Products Certification Scheme

Since FY2014, we have implemented the Environmentally Friendly Products Designation Scheme to encourage further reductions of the environmental impact of products and services. Under the scheme, the environmental performance of products and services is evaluated against self-established criteria and those exhibiting particularly outstanding performance are designated “environmentally friendly products.”



During the 3 previous periods, 15 environmentally friendly products were certified: 4 in FY2014, 6 in FY2015 and 5 in FY2016. We will gradually increase the number of certified products and services. Details of certified products can be found on our website. Please take a look.

**Environmentally friendly products website**  
<https://www.ihi.co.jp/csr/environmental/products/>

## Products and Services Exhibiting Outstanding Environmental Performance

The five environmentally friendly products certified in FY2016 are as follows:

- Large diesel engines
- LC-A (Life Cycle Administrator) – LC-A automatic status-diagnosis system
- TF-Detector – magnetic particle concentration gauge
- MF-Detector – conductor strip detecting unit
- NPC24H Tachikawa Midori-cho No. 2 Parking Lot – energy-saving parking system

### Large diesel engines

Energy-saving engine compliant with exhaust-gas regulations. Large, low-speed diesel engines are used in large vessels, such as tankers and container ships, and medium-speed diesel engines are used in ferries and as generator units on islands, etc. There is also a dual-fuel model that use multiple types of fuel as required.



Low-speed diesel engine



Medium-speed diesel engine

### Energy-saving parking system NPC24H Tachikawa Midori-cho No. 2 Parking Lot

First parking lot to obtain a maximum 5-star ranking under the Building Energy-efficiency Labeling System (BELS).



NPC24H Tachikawa Midori-cho No. 2 Parking Lot

## Environmental Communication

In December 2016, we exhibited at the International Exhibition on Environment and Energy (EcoPro 2016), Japan’s largest environmental fair. Various shows and exhibits were organized to show over 5,500 people how we make efforts to mitigate and adapt to climate change with products and services. Going forward, we will continue to communicate with our stakeholders in regard to environmental management.



Introducing products and services via tablets



Animation of ORC power generators



Animation of small-scale distributed-heat utilization systems

## Compliance Initiatives

### – Serving as a Good Corporate Citizen –

#### Basic Policies

Compliance helps form the foundation for corporate activities. The following conduct is specified in the Basic Code of Conduct for IHI's group companies.

- Observing strictly all laws, company rules and other regulations
- Acting in a fair and responsible manner as businesspeople

This supports not only legal compliance but also efforts to accurately assess changing social values and demands, a necessary step in meeting society's expectations.

#### System for Implementing Compliance Activities

#### Chief Compliance Officer

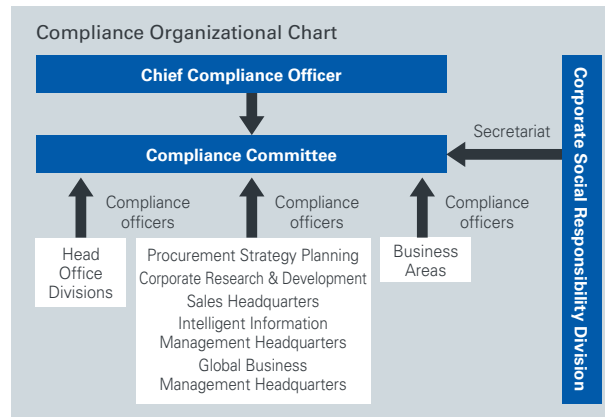
The IHI chief compliance officer shall oversee the organizational structure for compliance, guide the overall group in such matters, and enhance compliance activities.

#### Compliance Committee

The Compliance Committee reviews and plans important compliance policies and oversees compliance activities. The committee meets four times a year. It comprises the Chief Compliance Officer as the chairperson and Divisional Compliance Officers who serve as managers responsible for implementing policies. In response to decisions made at committee meetings, each compliance officer engages in compliance activities suited to the business of that officer's division. Each compliance officer also shares information about the compliance activities in their divisions with the Compliance Committee. Activities are managed with the PDCA cycle.

#### Compliance Activity Promotion

The Corporate Social Responsibility Division, acting in accordance with policies set by the Compliance Committee, plans and implements activities and provides related guidance and support, as well as monitors the status of activities within each division.



#### Compliance Hotline

IHI operates a Compliance Hotline to facilitate reporting of possible illegal, unethical or improper conduct and to facilitate prompt corporate responses to remedy such actions. The Hotline received 218 calls in FY2016.



#### Compliance Activities

IHI conducts multifaceted training and education to improve compliance awareness. Creative approaches are taken to achieve highly effective activities, such as ensuring that training is carefully tailored to the target audience.

#### e-Learning

Compliance education is provided to employees in the form of e-learning based on set themes. The FY2016 theme was "preventing data falsification," and education based on this theme was provided to IHI companies worldwide.

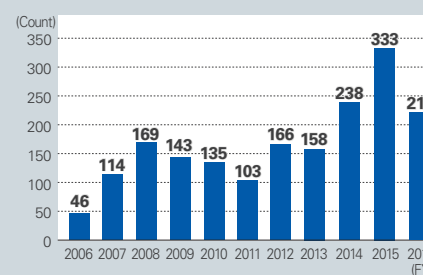
#### Officer Training

All IHI officers participate in compliance training. In FY2016, an external lecturer provided training on the theme "The roles of management executives in preventing and responding to scandals."

#### Training for Line Management

IHI holds training for line managers who instruct their subordinates on a daily basis. In FY2016, we considered points for preventing compliance violations from the aspect of self-esteem (occupational self-respect) and emphasized the importance of workplace culture.

Compliance Hotline reports



Compliance training results

Position	Participants
IHI Corporation executives	28
IHI group executives	27
Managers at IHI Corporation and group companies	40
Line managers	73

## Approach to Risk Management

### – For Sustainable Development –

#### Basic Policies for Risk Management

The basic approach to risk management entails making business continuity plans, ensuring the safety of employees and their families, conserving corporate resources and retaining society's trust. IHI, recognizing that risk management is a top business priority, identifies, analyzes and evaluates potential risks on a yearly basis.

#### Risk Management System

The Risk Management Conference controls risk-management activities under the leadership of the CEO as its director. The body studies key matters such as initiative directives, annual plans and corrective actions. IHI's head office, business areas, business units and affiliated companies, engage in risk management independently and autonomously. The Group Risk Management Units, which are independent divisions, also control risks commonly existing in our group companies.

To further strengthen risk management, IHI established a Project Risk Management Division at its headquarters and Risk Management Arms within each business area in FY2017. Through collaboration between these organizations, IHI has established a system that facilitates efficient risk reviews and monitoring for large-scale orders and investments.

#### Strategy

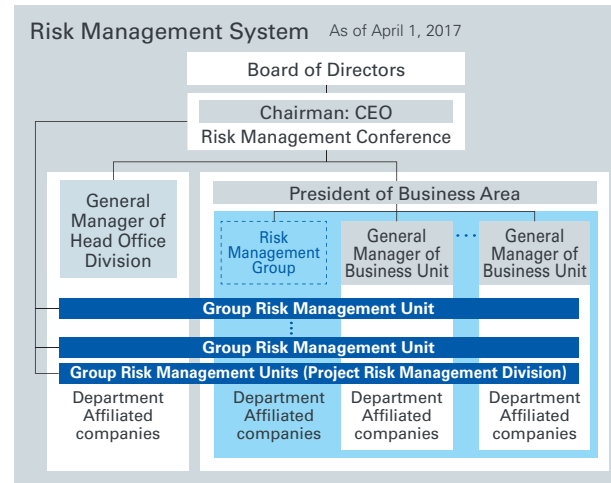
- Creating Value for Businesses and Society -

#### Challenge

- Creating Value for the Future -

#### ESG Management

- The Foundation of Sustainable Growth -



#### Key Policies for Risk Management in FY2017

The deteriorating profitability of certain large-scale projects and affiliated companies pushed IHI business results below expectations in FY2016. In terms of safety, we were unable to achieve zero accidents within the IHI Group. To minimize such risk and respond appropriately when risks do arise, the company is taking steps to reinforce its risk countermeasures based on past experiences. IHI is focusing on the following risk activities in FY2017.

- ① Thoroughly manage safety
- ② Ensure profitability through steady implementation of large-scale project and risk-management system
- ③ Reform quality and operational systems
- ④ Reform workstyles to shorten working hours for employees
- ⑤ Respond to changes in business and competitive environment
- ⑥ Ensure appropriateness of large-scale investments
- ⑦ Respond to risks in execution of global strategies
- ⑧ Strengthen compliance

- ⑨ Prevent leaks in trade secrets, personal information and key technologies
- ⑩ Ensure information security
- ⑪ Strictly comply with environmental laws and regulations
- ⑫ Prevent disasters and accidents
- ⑬ Recover trust of stakeholders
- ⑭ Promote diversity
- ⑮ Prevent harassment
- ⑯ Promote human rights education and awareness activities

## Topics Resilience Certification

In December 2016, IHI earned a Resilience Certification to acknowledge its achievements in strengthening business continuity and thereby contributing to Japan's resilience against disasters.

The certification system is based on guidelines stipulated by the Japanese government to promote a more resilient nation.

Since FY2016, IHI has carried out activities under a new three-year disaster-prevention plan aimed at improving company resilience, with an ultimate aim to become the most disaster-prepared organization in Japan.

IHI will continue ceaselessly to improve its disaster preparedness, mindful of its responsibility as a corporation supplying critical infrastructure both in Japan and around the world.





## CSR Management Initiatives

### – Creating More Sustainable Societies –

IHI believes that meeting society's expectations is one of its basic corporate social responsibilities (CSR). In accordance with this belief, the company's Basic Code of Conduct compiles the necessary practices IHI is obliged to carry out. A guide to the Basic Code of Conduct has been translated into 18 languages other than Japanese to ensure that all IHI employees understand and follow these practices in their work.

IHI also believes that another of society's expectations is for the company to contribute to the achievement of Sustainable Development Goals (SDGs) adopted by the United Nations in 2015. With the aim of creating more sustainable societies, IHI will continue to adhere to its Basic Code of Conduct and contribute to the achievement of the SDGs through its business.



### Basic Code of Conduct

IHI is committed to meeting the expectations and earning the trust of not only customers, business partners, shareholders and colleagues, but also local and international communities, with respect to pressing global issues. By doing so, the company aims to enhance its existential value and realize its corporate philosophy of "Contribute to the development of society through technology" and "Human resources are our single most valuable asset."

#### Fundamental and Universal Principles

##### Respect for the rule of law and ethical conduct

We strictly observe laws and ordinances based on a clear understanding of their meaning. We also act sincerely and fairly and in accordance with high ethical standards so that we do not violate social rules or international norms.

##### Respect for human rights

We fully recognize the importance of, and always strive to respect, human rights in our business activities.

##### Promotion of mutual understanding

To promote mutual understanding with those around us, we strive to disseminate information on our business activities, explain the effects of these activities on the surrounding environment, and exchange information with our broader communities on a daily basis.

#### Responsibilities toward People, Society and Environment

##### Responsibilities regarding IHI products and services

- 1 We establish relationships of mutual trust with the people in the course of our business, help solve societal issues in a variety of fields by using our abilities to the utmost, and develop and provide products and services to assure more comfortable lives for people around the world.
- 2 We pay full attention to the safety of our products and services and constantly strive to raise quality levels by confirming the satisfaction of customers and users.
- 3 We deal appropriately with other parties in our business transactions and seek to profit fairly, while also striving to establish fair and mutually productive relationships with customers and business partners.

##### Responsibilities towards those with whom we work

We strive to respect mutually the character and individuality of all people with whom we work and maintain a safe, supportive and comfortable environment in which we all can work easily.

##### Responsibilities toward local and international communities

- 1 With an awareness that each one of us is a member of society, we actively take part in initiatives to solve problems faced by society.
- 2 No matter the region of the world where we conduct our business, we understand the value of the culture unique to each region and strive to meet the expectations of people living there.
- 3 We take a resolute attitude against organizations and forces that threaten social order and safety.

##### Responsibilities toward the global environment

Based on our recognition that the global environment provides the foundation for the existence of all societies and cultures, we take care so as to not harm that which also will be needed by future generations, and we strive to protect and reduce the burdens on the global environment, not only through our products and services but also in all other aspects of our business.

#### Roles and Responsibilities of Senior Management

##### Roles of senior management

- 1 Senior management recognizes that their role is to ensure the realization of IHI's Code of Conduct and to take the initiative to demonstrate leadership in putting the Code of Conduct into practice.
- 2 Senior management ensures that this Code of Conduct is known to all people with whom they work, and constantly strives to establish, maintain and improve effective internal systems and thereby enhance IHI's corporate value.

##### Responsibilities of senior management

In the case of a Code of Conduct violation, senior management shall strive to solve the problem by identifying the cause and preventing any recurrence of similar violations. They shall also promptly disclose accurate information to society, clarify the responsibilities and scope of authority of the persons involved and impartially take disciplinary action, even upon themselves.



## CSR Promotion System

The heart of IHI's CSR system is the CSR Committee, in which the president serves as the chairperson, the chief CSR officer serves as the vice-chairperson and divisional heads from the head office and business areas serve as officers.

The CSR Committee has met annually since FY2013 to enable executives to consider society's expectations and discuss basic policies and measures relating to CSR. At the 5<sup>th</sup> CSR Committee meeting in April 2017, an external expert explained the demands of global society and participants considered the way businesses are managed with societal issues in mind. The meeting also reviewed CSR activities implemented in FY2016 and confirmed the policies and measures for FY2017.

## Communication with Stakeholders

IHI believes that communication with stakeholders is essential for gaining an understanding of society's expectations toward the company. IHI creates various opportunities to engage in dialogue with customers.

## Dialogue with Experts

In March 2017, a dialogue was held with Mr. Ken Shibusawa, chairman of Commons Asset Management Inc., to consider how institutional investors who make long-term investment decisions view IHI. The aim was to reflect this insight in the management of IHI. The discussion included key factors for achieving sustainable growth and methods for communicating with stakeholders.

According to Mr. Shibusawa, "People are the most important factor in company management because they create corporate value." He also commented that "IHI's Integrated Report is a useful communication tool that provides straightforward information on the usefulness of IHI products and services and the impact that the company has on society."



Mr. Ken Shibusawa, Chairman, Commons Asset Management Inc.

## Pick up Social Contributions

Meeting society's expectations: IHI aims to meet society's expectations not only through its business, but also through five categories of activities focused on society.

### Five key themes

- ① Nurturing future generations
- ② Promoting precision-manufacturing and scientific technologies
- ③ Resolving problems in local communities
- ④ Supporting environmental sustainability
- ⑤ Providing access to medical care, food, and water

### Results of FY2016 initiatives

- ① Total spending on social contributions: 206 million yen
- ② Major initiatives
  - Sponsorship of activities by the United Nations World Food Program (WFP)
  - Development of training programs for next-generation development
  - Sponsorship of events in business localities



## Stakeholder Engagement

Stakeholders	Main engagements and methods
Customers	Sales activities, customer satisfaction surveys, product/service information on website, and CSR questionnaires
Suppliers	Procurement activities, explanation of group procurement basic policies, reviews of quality-management systems, and supplier award system
Government organizations	Making notification and receiving authorization to comply with relevant laws
Shareholders & investors	General meeting of shareholders, financial results briefing, factory tours, and visits from overseas investors
Local communities	Activities contributing to local communities, (sponsorship of traditional events, atrium concerts, etc.), and IHI Forum
Employees	e-learning (questionnaires) and employee-awareness surveys

## Key CSR performance data

Areas		FY2013	FY2014	FY2015	FY2016	FY2017 Plan	Future objectives (or action plan)
<b>CSR</b>							
Measures	Employee awareness	Raised awareness via e-learning	Ongoing	Ongoing	Ongoing	Expand scope of education	Raise awareness of global CSR issues and show individuals how to meet stakeholder expectations, earn trust and raise company value over long-term
Relevant data	Level of employee awareness	86%	89%	90%	92%	90% or greater	—
<b>Governance</b>							
Measures	Risk management	Set 12 priority policies	Set 14 priority policies	Set 16 priority policies	Set 18 priority policies	Set 16 priority policies	—
Relevant data	Outside director meeting attendance rate	88%	95%	94%	94%	75% or greater	75% or greater
<b>Compliance</b>							
Measures	Compliance training	Conducted compliance and risk management programs	Ongoing	Developed self-esteem program	Ongoing	Ongoing	Act ethically and emphasize sincerity and fairness in compliance with internal, national and international rules, laws, regulations, prescribed practices, internal policies and procedures
	Globalization of compliance system	Reviewed compliance systems of IHI and America's Regional Headquarters	Improved compliance systems of IHI and Americas Regional Headquarters Americas	Clarified compliance system for overseas subsidiaries	Conducted e-learning for overseas employees	Launch overseas hotline	Establish Group-wide global compliance system
Relevant data	Hotline cases	158	238	333	218	—	—
<b>Supply chain</b>							
Measures	Procurement policy awareness	<ul style="list-style-type: none"> <li>Surveyed 1,332 major domestic business partners</li> <li>Established IHI Group Policy on Conflict Minerals</li> </ul>	<ul style="list-style-type: none"> <li>Reviewed survey findings</li> <li>Established environmental control guidelines</li> </ul>	Deployed throughout IHI and Group companies worldwide	Reinforced publicity throughout IHI and Group companies worldwide	Reinforce publicity throughout IHI and Group companies worldwide	Expand IHI Group Basic Procurement Policy to major suppliers for enhanced trust, mutual benefit and competitiveness
	Procurement personnel training	<ul style="list-style-type: none"> <li>Started training local procurement personnel</li> <li>Introduced training on procurement-related laws, regulations and tax systems of priority emerging countries</li> </ul>	<ul style="list-style-type: none"> <li>Ensured procurement compliance, including for management of chemical substances</li> <li>Held procurement seminars for global procurement personnel</li> </ul>	<ul style="list-style-type: none"> <li>Conducted e-learning for procurement personnel</li> <li>Held procurement seminars for global procurement personnel</li> </ul>	<ul style="list-style-type: none"> <li>Conducted e-learning for procurement personnel</li> <li>Held procurement compliance seminars for overseas affiliates</li> </ul>	<ul style="list-style-type: none"> <li>Conduct e-learning for procurement personnel</li> <li>Prepare teaching material for procurement compliance seminars for overseas affiliates and hold seminars (starting with China and Korea)</li> </ul>	Ensure global procurement compliance
<b>Health and safety</b>							
Measures	Reinforcing health and safety management	<ul style="list-style-type: none"> <li>Established IHI Group Safety and Health Committee</li> <li>Introduced mental health training</li> <li>Introduced new health management system</li> </ul>	<ul style="list-style-type: none"> <li>Introduced Occupational Health Dynamics (OHD) assessments</li> <li>Introduced standards for responding to medical checkup results</li> </ul>	<ul style="list-style-type: none"> <li>Established IHI Group Central Safety and Health Committee</li> <li>Provided direction and support for major IHI Group affiliates</li> <li>Enhanced health and safety management overseas</li> <li>Enhanced health management for employees dispatched overseas</li> <li>Selected as Health and Productivity Brand</li> </ul>	<ul style="list-style-type: none"> <li>Provided direction and support to major IHI Group affiliates</li> <li>Expanded Health and Safety Management Assessment to affiliates</li> <li>Enhanced health and safety management overseas</li> <li>Communicated Healthy Management Declaration</li> <li>Chosen for Health &amp; Productivity Stock Selection program</li> </ul>	<ul style="list-style-type: none"> <li>Conduct Group Labor/ Management Patrols, including at affiliates</li> <li>Provide direction and support to major IHI Group affiliates</li> <li>Devise a standard model for HSE Management System</li> <li>Implement health management initiatives</li> <li>Provide support for health treatment and professional life</li> </ul>	Work to ensure workplace environments are healthy and safe for all people working for or with IHI
Relevant data	Rate of occurrence of work-related accidents requiring time off	0.21	0.24	0.22	0.27	Less than 0.2	—
	Number of annual leave days taken	16.27 days	16.02 days	15.92 days	16.5 days	16 days or more	—

Areas		FY2013	FY2014	FY2015	FY2016	FY2017 Plan	Future objectives (or action plan)
Diversity							
Measures	Gender diversity	<ul style="list-style-type: none"> <li>Promoted awareness of gender diversity</li> <li>Established networks for female personnel</li> <li>Supported women's career ambitions and increased motivation</li> <li>Heightened gender-diversity awareness among males, especially managers and supervisors</li> <li>Identified obstacles to gender diversity</li> </ul>		<ul style="list-style-type: none"> <li>Promoted work-life balance</li> <li>Expanded gender-diversity initiatives throughout Group</li> <li>Improved male awareness of gender diversity</li> <li>Provided ongoing support for networking among females</li> </ul>		Ongoing	Foster inclusive workplaces based on our Corporate Philosophy and IHI Group Vision. Provide greater opportunities for employees to develop and grow.
		<ul style="list-style-type: none"> <li>Announced numerical targets for gender diversity</li> <li>Introduced support system for employees returning to work</li> <li>Selected as a Nadeshiko Brand</li> </ul>	<ul style="list-style-type: none"> <li>Executive Officer Mizumoto received Award for Cultivating Women Engineers</li> <li>Launched diversity page on website and released messages from top executives</li> </ul>	<ul style="list-style-type: none"> <li>Implemented Diversity Promotion Month (November)</li> <li>Followed up on Group company initiatives</li> <li>Formulated action plan for Women's Advancement Promotion Law</li> <li>Selected as a Nadeshiko Brand</li> </ul>	<ul style="list-style-type: none"> <li>Held group-wide seminar to promote female careers and Diversity Month (November)</li> <li>Prepared daycare centers at company premises (Soma and Musashi)</li> <li>Released numerical targets for FY2020</li> </ul>	<ul style="list-style-type: none"> <li>Hold a group-wide seminar to promote participation by women and Diversity Month (November)</li> <li>Open daycare centers on company premises and launch child-raising advisory service</li> <li>Create telecommute system and spouse-relocation-leave system</li> </ul>	
	Employment opportunities for persons with disabilities	<ul style="list-style-type: none"> <li>Received internship participants</li> <li>Joined Accessibility Consortium of Enterprises (ACE)</li> </ul>	<ul style="list-style-type: none"> <li>Ensured appropriate workplaces and workloads</li> <li>Posted job openings on an employment site</li> </ul>	Participated in joint briefing session hosted by disability-support provider	Established consultation desk	Ongoing	
	Employment opportunities for seniors	Introduced optional retirement age to enable work until 65	Revised life-planning seminars	Added life-planning seminars at age 50 (existing seminars at age 58)	Raised base wages from age 60 (for selective retirement scheme)	<ul style="list-style-type: none"> <li>Revise life-planning seminars</li> <li>Revise performance evaluations for employees from age 60</li> </ul>	
Employment opportunities for non-Japanese	Recruited candidates from priority areas (Asia)	Ongoing	Ongoing	Ongoing	Strengthen acceptance system (enhance instructor training, etc.)		
Relevant data	Female recruitment	College graduates : 33 (15%) Technical: 6	College graduates: 32 (14%) Technical: 3	College graduates: 47 (17%) Technical: 3	College graduates: 40 (14%) Technical: 6	College graduates: 35 (14%) Technical: 4	College graduates: 15% or greater of total (Targets: Technical: 10% or greater, Administrative: 35% or greater) Technical: 15 or more in FY2016-2018
	Female managers	44 (1.6%)	51 (1.8%)	60 (2.1%)	66 (2.5%)	68 (2.6%) (as of April 1, 2017)	3% or greater (FY2018) 3.5% or greater (FY2020)
	Female officers	0	1	1	2 (1 is an outside audit & supervisory board member)	4 (3 are outside officers)	1 or more (FY2018)
	Percentage returning to work after childcare leave	100%	100%	100%	100%	100%	100%
	Employees with disabilities	1.87%	2.02%	2.17%	2.14%	2.3% or greater	2.3% (FY2018, April)
	Non-Japanese graduates	14	11	9	7	8 (not including planned October hires)	—
Environment							
Measures	Environmental management	Established Group Environmental Action Plan 2013	Established targets for energy consumption, CO <sub>2</sub> emissions and waste reduction, and monthly monitoring program	Finalized environmental impact collection system	Established Group Environmental Action Plan 2016	Study mid-to-long-term environmental issues	IHI's vision is to make environmental sustainability an integral part of all Group companies by working together with customers and business partners worldwide.
Relevant data	CO <sub>2</sub> emissions from business activities <sup>1</sup>	322,000 tons	346,000 tons	326,000 tons	317,000 tons	—	Less than 300,000 tons (FY2018)
	Reduced CO <sub>2</sub> emissions	From 12 products/services	From 11 products/services	Addressed calculation-method issues	2.5 million tons or greater	5 million tons or greater	10 million tons or greater (FY2018)
	Sales ratio of eco-friendly products	—	Certified: 4	Certified: 10	Certified: 15	Improve the sales ratio	70% or greater (FY2018)
	CDP climate change	91 B	97A	99 B	Leadership level A-	Management level or higher	Management level or higher
	Nikkei Environmental Management Survey (max. 500 points)	403	411	436	429	400 points or higher	400 points or higher

1: Emissions coefficients by electrical power provider were used for calculation of CO<sub>2</sub> emissions from electrical power consumption.

# Financial Highlights

	FY2006	FY2007	FY2008	FY2009	FY2010
(billions of yen)					
Orders received	1,361.1	1,556.5	1,176.7	970.4	1,200.9
Sales	1,221.0	1,350.5	1,388.0	1,242.7	1,187.2
(overseas)	468.8	577.4	606.6	524.6	512.0
Operating income	(5.6)	(16.8)	25.6	47.1	61.3
Profit attributable to owners of parent	(4.5)	25.1	(7.4)	17.3	29.7
R&D expenses	23.4	24.1	24.7	25.5	29.2
Investment in plant and equipment	65.3	39.1	45.2	37.5	86.3
Depreciation	26.8	31.8	36.1	38.2	38.2
Total assets	1,536.0	1,542.2	1,489.3	1,412.4	1,361.4
Interest-bearing debt	404.5	367.9	427.1	432.0	373.3
Net assets	227.0	234.4	205.9	227.0	253.6
Cash flow from operating activities	36.0	3.3	(17.6)	76.7	95.5
Cash flow from investing activities	(57.3)	46.7	(41.7)	(62.7)	(77.7)
Free cash flow	(21.2)	50.1	(59.3)	13.9	17.7
Cash flow from financing activities	13.0	(48.7)	42.8	(1.8)	(25.9)
Employees	2,319.0	2,372.2	2,434.8	2,489.0	2,603.5
(yen)					
Per share data					
Earnings per share <sup>1</sup>	(3.46)	17.18	(5.05)	11.85	20.29
Book value per share <sup>2</sup>	144.70	149.96	130.96	144.66	162.33
Dividends per share	4	4	0	2	3
(%)					
Financial index					
Percentage of overseas sales	38.4	42.8	43.7	42.2	43.1
Operating margin	(0.5)	(1.2)	1.9	3.8	5.2
ROIC (return on invested capital) <sup>3</sup>	(0.2)	(1.2)	3.0	4.8	6.2
ROA (return on assets) <sup>4</sup>	(0.3)	1.6	(0.5)	1.2	2.1
ROE (return on equity) <sup>5</sup>	(2.4)	11.7	(3.6)	8.6	13.2
Debt-to-equity ratio (times) <sup>6</sup>	1.78	1.57	2.07	1.90	1.47
Equity to total assets	13.8	14.3	12.9	15.0	17.5

1: Profit attributable to owners of parent ÷ total number of shares outstanding

2: Net assets ÷ total number of shares outstanding

3: (Operating income + interest and dividend income) after tax ÷ (owner's equity + interest-bearing debt)

4: Profit attributable to owners of parent ÷ (average of total assets at end of previous term and end of current term)

5: Profit attributable to owners of parent ÷ (average of owner's equity at end of previous term and end of current term)

6: Interest-bearing debt ÷ net assets

All financial figures are on a consolidated basis.



For more detailed information,  
please refer to the website.

Financial: <https://www.ihl.co.jp/en/ir/>

# Financial Highlights

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
	(billions of yen)					
Orders received	1,269.6	1,225.6	1,458.9	1,664.3	1,605.3	1,389.8
Sales	1,221.8	1,256.0	1,304.0	1,455.8	1,539.3	1,486.3
(overseas)	521.0	486.3	618.5	758.0	796.9	757.4
Operating income	43.3	42.1	53.2	63.2	22.0	47.3
Profit attributable to owners of parent	23.8	33.3	33.1	9.0	1.5	5.2
R&D expenses	30.0	30.2	33.5	37.0	41.6	35.5
Investment in plant and equipment	53.5	55.0	54.5	63.9	50.8	52.7
Depreciation	41.1	41.7	40.4	43.2	46.7	46.6
Total assets	1,338.1	1,364.2	1,496.3	1,690.8	1,715.0	1,692.8
Interest-bearing debt	345.2	353.8	357.8	410.6	374.5	371.9
Net assets	258.4	299.2	362.5	359.5	333.3	337.6
Cash flow from operating activities	24.7	74.3	39.2	63.5	95.3	65.3
Cash flow from investing activities	(37.7)	(61.0)	(62.2)	(74.6)	(35.5)	(28.9)
Free cash flow	(12.9)	13.3	(23.0)	(11.0)	59.8	36.4
Cash flow from financing activities	(38.5)	(3.1)	11.3	33.4	(47.5)	(21.9)
Employees	2,691.5	2,661.8	2,756.2	2,853.3	2,949.4	2,965.9
	(yen)					
Per share data						
Earnings per share <sup>1</sup>	16.26	22.81	22.51	5.88	0.99	3.40
Book value per share <sup>2</sup>	170.84	197.08	223.68	224.03	206.16	206.03
Dividends per share	4	5	6	6	3	0
	(%)					
Financial index						
Percentage of overseas sales	42.6	38.7	47.4	52.1	51.8	51.0
Operating margin	3.5	3.4	4.1	4.3	1.4	3.2
ROIC (return on invested capital) <sup>3</sup>	4.6	4.5	5.3	5.8	2.3	5.0
ROA (return on assets) <sup>4</sup>	1.8	2.5	2.3	0.6	0.1	0.3
ROE (return on equity) <sup>5</sup>	9.8	12.4	10.5	2.6	0.5	1.6
Debt-to-equity ratio (times) <sup>6</sup>	1.34	1.18	0.99	1.14	1.12	1.10
Equity to total assets	18.7	21.1	23.1	20.5	18.6	18.8

1: Profit attributable to owners of parent ÷ total number of shares outstanding

2: Net assets ÷ total number of shares outstanding

3: (Operating income + interest and dividend income) after tax ÷ (owner's equity + interest-bearing debt)

4: Profit attributable to owners of parent ÷ (average of total assets at end of previous term and end of current term)

5: Profit attributable to owners of parent ÷ (average of owner's equity at end of previous term and end of current term)

6: Interest-bearing debt ÷ net assets

All financial figures are on a consolidated basis.



For more detailed information,  
please refer to the website.

Financial: <https://www.ihl.co.jp/en/ir/>



# Consolidated Balance Sheets

(millions of yen)

	March 31, 2016	March 31, 2017
<b>ASSETS</b>		
Current assets:		
Cash and deposits	106,536	118,909
Notes and accounts receivable – trade	444,838	403,094
Securities	1,403	–
Finished goods	23,537	20,719
Work in process	254,907	272,823
Raw materials and supplies	131,865	123,726
Deferred tax assets	61,956	44,783
Other	86,512	95,233
Allowance for doubtful accounts	(11,048)	(5,445)
Total current assets	1,100,506	1,073,842
Non-current assets:		
Property, plant and equipment:		
Buildings and structures, net	142,597	136,801
Machinery, equipment and vehicles, net	72,648	69,648
Land	90,936	92,284
Leased assets, net	16,412	14,285
Construction in progress	8,927	11,623
Other, net	18,216	17,767
Total property, plant and equipment	349,736	342,408
Intangible assets:		
Goodwill	22,043	16,166
Software	14,449	14,454
Other	13,113	10,536
Total intangible assets	49,605	41,156
Investments and other assets:		
Investment securities	139,463	134,676
Deferred tax assets	47,338	65,697
Net defined benefit asset	11	21
Other	30,380	36,715
Allowance for doubtful accounts	(1,983)	(1,684)
Total investments and other assets	215,209	235,425
Total non-current assets	614,550	618,989
Total assets	1,715,056	1,692,831

(millions of yen)

	March 31, 2016	March 31, 2017
<b>LIABILITIES</b>		
Current liabilities:		
Notes and accounts payable – trade	297,499	285,937
Short-term loans payable	94,550	104,111
Commercial paper	5,000	5,000
Current portion of bonds	10,000	10,000
Accrued expenses	118,932	96,213
Income taxes payable	8,222	5,674
Advances received	180,352	208,907
Provision for bonuses	24,610	23,714
Provision for construction warranties	44,337	47,939
Provision for loss on construction contracts	53,223	37,324
Other provision	379	248
Other	45,665	51,181
Total current liabilities	882,769	876,248
Non-current liabilities:		
Bonds payable	60,000	50,000
Long-term loans payable	187,085	182,495
Lease obligations	12,968	13,782
Deferred tax liabilities for land revaluation	5,158	4,884
Net defined benefit liability	154,968	150,920
Provision for loss on business of subsidiaries and affiliates	2,805	1,149
Other provision	1,377	1,308
Other	74,567	74,415
Total non-current liabilities	498,928	478,953
Total liabilities	1,381,697	1,355,201
<b>NET ASSETS</b>		
Shareholders' equity:		
Capital stock	107,165	107,165
Capital surplus	54,431	53,510
Retained earnings	144,789	149,832
Treasury shares	(565)	(513)
Total shareholders' equity	305,820	309,994
Accumulated other comprehensive income:		
Valuation difference on available-for-sale securities	1,580	2,892
Deferred gains or losses on hedges	(377)	(277)
Revaluation reserve for land	5,423	5,427
Foreign currency translation adjustment	9,954	1,298
Recalculation of defined benefit plans	(4,090)	(1,171)
Total accumulated other comprehensive income	12,490	8,169
Subscription rights to shares	758	843
Non-controlling interests	14,291	18,624
Total net assets	333,359	337,630
Total liabilities and net assets	1,715,056	1,692,831

## Consolidated Statements of Income

(millions of yen)

	April 1, 2015 to March 31, 2016	April 1, 2016 to March 31, 2017
Net sales	1,539,388	1,486,332
Cost of sales	1,320,376	1,244,033
Gross profit	219,012	242,299
Selling, general and administrative expenses	196,964	194,910
Operating income	22,048	47,389
<b>Non-operating income</b>		
Interest income	920	870
Dividend income	1,997	1,701
Share of profit of entities accounted for using equity method	1,167	–
Reversal of accrued expenses for delayed delivery	–	2,232
Other income	5,277	3,800
Total non-operating income	9,361	8,603
<b>Non-operating expenses</b>		
Interest expenses	3,922	3,131
Share of loss of entities accounted for using equity method	–	3,538
Foreign exchange losses	5,122	6,700
Other expenses	12,649	20,612
Total non-operating expenses	21,693	33,981
Ordinary income	9,716	22,011
<b>Extraordinary income</b>		
Gain on sales of non-current assets	28,648	23,533
Gain on contribution of securities to retirement benefit trust	6,358	3,481
Reversal of provision for loss on business of subsidiaries and affiliates	–	1,656
Gain on bargain purchase	–	1,079
Gain on transfer of shares of subsidiaries and affiliates	–	798
Gain on sales of investment securities	1,804	–
Total extraordinary income	36,810	30,547
<b>Extraordinary losses</b>		
Business structural reform expenses related to F-LNG/offshore structure business	–	9,914
Loss on transfer of receivables	–	9,834
Settlement-related expenses related to delivered boiler facilities	–	6,988
Impairment loss	81	3,461
Compensation for change of construction contracts	–	2,248
Dismantlement costs of an underpass in Toyosu	–	2,035
Expenses for delayed delivery	44,628	–
Loss on valuation of shares subsidiaries and affiliates	1,756	–
Provision for loss on business of subsidiaries and affiliates	1,700	–
Total extraordinary losses	48,165	34,480
Profit (loss) before income taxes	(1,639)	18,078
Income taxes – current	18,889	10,872
Income taxes – deferred	(25,660)	(2,479)
Total income taxes	(6,771)	8,393
Profit	5,132	9,685
Profit attributable to non-controlling interests	3,603	4,438
Profit attributable to owners of parent	1,529	5,247

## Consolidated Statements of Comprehensive Income

(millions of yen)

	April 1, 2015 to March 31, 2016	April 1, 2016 to March 31, 2017
Profit	5,132	9,685
<b>Other comprehensive income:</b>		
Valuation difference on available-for-sale securities	(14,353)	1,096
Deferred gains or losses on hedges	376	332
Revaluation reserve for land	284	7
Foreign currency translation adjustment	(5,364)	(8,945)
Recalculation of defined benefit plans, net of tax	(705)	2,480
Share of other comprehensive income of entities accounted for using equity method	(598)	(27)
Total other comprehensive income	(20,360)	(5,057)
Comprehensive income	(15,228)	4,628
Comprehensive income attributable to		
Comprehensive income attributable to owners of parent	(18,338)	1,076
Comprehensive income attributable to non-controlling interests	3,110	3,552

# Consolidated Statements of Changes in Equity

April 1, 2015 to March 31, 2016

(millions of yen)

	Shareholders' equity				
	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity
Balance at beginning of current period	107,165	54,438	152,563	(655)	313,511
Changes of items during period					
Dividends of surplus			(9,262)		(9,262)
Profit attributable to owners of parent			1,529		1,529
Purchase of treasury shares				(6)	(6)
Disposal of treasury shares		(6)		96	90
Change in ownership interest of parent due to transactions with non-controlling interests		(1)			(1)
Net decrease from newly consolidated subsidiaries			(19)		(19)
Net decrease from merger with non-consolidated subsidiaries			(22)		(22)
Net changes of items other than shareholders' equity					-
Total changes of items during period	-	(7)	(7,774)	90	(7,691)
Balance at end of current period	107,165	54,431	144,789	(565)	305,820

April 1, 2016 to March 31, 2017

(millions of yen)

	Shareholders' equity				
	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity
Balance at beginning of current period	107,165	54,431	144,789	(565)	305,820
Changes of items during period					
Dividends of surplus					-
Profit attributable to owners of parent			5,247		5,247
Purchase of treasury shares				(2)	(2)
Disposal of treasury shares		(3)		54	51
Change in ownership interest of parent due to transactions with non-controlling interests		(918)			(918)
Net decrease from newly consolidated subsidiaries			(204)		(204)
Net decrease from merger with non-consolidated subsidiaries					-
Net changes of items other than shareholders' equity					-
Total changes of items during period	-	(921)	5,043	52	4,174
Balance at end of current period	107,165	53,510	149,832	(513)	309,994

	Accumulated other comprehensive income						Subscription rights to shares	Non-controlling interests	Total net assets
	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Revaluation reserve for land	Foreign currency translation adjustment	Recalculation of defined benefit plans	Total accumulated other comprehensive income			
Balance at beginning of current period	16,622	(743)	5,166	14,783	(3,545)	32,283	747	13,054	359,595
Changes of items during period									
Dividends of surplus						-			(9,262)
Profit attributable to owners of parent						-			1,529
Purchase of treasury shares						-			(6)
Disposal of treasury shares						-			90
Change in ownership interest of parent due to transactions with non-controlling interests						-			(1)
Net decrease from newly consolidated subsidiaries						-			(19)
Net decrease from merger with non-consolidated subsidiaries						-			(22)
Net changes of items other than shareholders' equity	(15,042)	366	257	(4,829)	(545)	(19,793)	11	1,237	(18,545)
Total changes of items during period	(15,042)	366	257	(4,829)	(545)	(19,793)	11	1,237	(26,236)
Balance at end of current period	1,580	(377)	5,423	9,954	(4,090)	12,490	758	14,291	333,359

	Accumulated other comprehensive income						Subscription rights to shares	Non-controlling interests	Total net assets
	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Revaluation reserve for land	Foreign currency translation adjustment	Recalculation of defined benefit plans	Total accumulated other comprehensive income			
Balance at beginning of current period	1,580	(377)	5,423	9,954	(4,090)	12,490	758	14,291	333,359
Changes of items during period									
Dividends of surplus						-			-
Profit attributable to owners of parent						-			5,247
Purchase of treasury shares						-			(2)
Disposal of treasury shares						-			51
Change in ownership interest of parent due to transactions with non-controlling interests						-			(918)
Net decrease from newly consolidated subsidiaries						-			(204)
Net decrease from merger with non-consolidated subsidiaries						-			-
Net changes of items other than shareholders' equity	1,312	100	4	(8,656)	2,919	(4,321)	85	4,333	97
Total changes of items during period	1,312	100	4	(8,656)	2,919	(4,321)	85	4,333	4,271
Balance at end of current period	2,892	(277)	5,427	1,298	(1,171)	8,169	843	18,624	337,630

# Consolidated Statements of Cash Flows

(millions of yen)

	April 1, 2015 to March 31, 2016	April 1, 2016 to March 31, 2017
<b>Cash flows from operating activities</b>		
Profit (loss) before income taxes	(1,639)	18,078
Depreciation	58,229	57,880
Depreciation and amortization on other	4,874	5,537
Gain on bargain purchase	–	(1,079)
Impairment loss	81	3,461
Increase (decrease) in allowance for doubtful account	(568)	416
Increase (decrease) in provision for bonuses	(1,986)	(493)
Increase (decrease) in provision for construction warranties	7,718	3,993
Increase (decrease) in provision for loss on construction contracts	24,689	(16,106)
Increase (decrease) in net defined benefit liability	6,209	5,040
Interest and dividend income	(2,917)	(2,917)
Interest expenses	3,922	3,131
Foreign exchange losses (gains)	(1,071)	1,801
Loss (gain) on sales of short-term and long-term investment securities	(1,914)	430
Loss (gain) on valuation of short-term and long-term investment securities	3,542	890
Share of (profit) loss of entities accounted for using equity method	(1,167)	3,538
Loss (gain) on disposal of property, plant and equipment	(27,606)	(21,884)
Gain on contribution of securities to retirement benefit trust	(6,358)	(3,481)
Reversal of provision for loss on business of subsidiaries and affiliates	–	(1,656)
Gain on transfer of shares of subsidiaries and affiliates	–	(798)
Business structural reform expenses related to FLNG/offshore structure business	–	9,914
Loss on transfer of receivables	–	9,834
Settlement-related expenses related to delivered boiler facilities	–	6,988
Compensation for change of construction contracts	–	2,248
Dismantlement costs of an underpass in Toyosu	–	2,035
Decrease (increase) in notes and accounts receivable – trade	(10,396)	41,501
Increase (decrease) in advances received	56,568	30,394
Decrease (increase) in advance payments	(12,912)	(1,613)
Decrease (increase) in inventories	(12,179)	(17,175)
Increase (decrease) in notes and accounts payable – trade	80	(7,250)
Increase (decrease) in accrued expenses	37,376	(27,098)
Decrease (increase) in other current assets	(1,191)	(10,579)
Increase (decrease) in other current liabilities	(4,169)	(115)
Decrease (increase) in consumption taxes refund receivable	13,124	2,540
Other	(2,956)	(5,130)
<b>Subtotal</b>	<b>127,383</b>	<b>92,621</b>
Interest and dividend income received	4,789	4,235
Interest expenses paid	(4,124)	(3,110)
Payments for guarantee of obligations	–	(10,271)
Income taxes paid	(32,710)	(18,102)
<b>Cash flows from operating activities</b>	<b>95,338</b>	<b>65,373</b>

(millions of yen)

	April 1, 2015 to March 31, 2016	April 1, 2016 to March 31, 2017
<b>Cash flows from investing activities</b>		
Decrease (increase) in time deposits	(927)	(460)
Purchase of short-term and long-term investment securities	(5,852)	(8,681)
Proceeds from sales and redemption of short-term and long-term investment securities	5,131	4,429
Purchase of property, plant and equipment and intangible assets	(52,804)	(54,262)
Gain (loss) on sales or disposal of property, plant and equipment and intangible assets	33,576	28,831
Payments for transfer of business	–	(328)
Purchase of shares and investments of subsidiaries resulting in change in scope of consolidation	(5,051)	–
Payments for sales of shares of subsidiaries resulting in change in scope of consolidation	–	(82)
Decrease (increase) in short-term loans receivable	1,656	8,592
Payments of long-term loans receivable	(53)	(413)
Collection of long-term loans receivable	60	34
Decrease (increase) in other investments	(19,702)	(10,015)
(Decrease) increase in other fixed liabilities	8,568	3,294
Other	(115)	100
<b>Cash flows from investing activities</b>	<b>(35,513)</b>	<b>(28,961)</b>
<b>Cash flows from financing activities</b>		
Net increase (decrease) in short-term loans payable	(38,982)	2,916
Net increase (decrease) in commercial papers	(12,000)	–
Proceeds from long-term loans payable	50,896	49,689
Repayments of long-term loans payable	(33,528)	(57,446)
Redemption of bonds	–	(10,000)
Proceeds from sales and leasebacks	612	273
Repayments of lease obligations	(3,916)	(6,739)
Decrease (increase) in treasury shares	(5)	(3)
Purchase of treasury shares of subsidiaries	(1)	(1)
Cash dividends paid	(9,241)	(16)
Proceeds from share issuance to non-controlling shareholders	1,188	1,570
Dividends paid to non-controlling interests	(2,553)	(1,811)
Payments from changes in ownership interests in subsidiaries that do not result in change in scope of consolidation	–	(373)
<b>Cash flows from financing activities</b>	<b>(47,530)</b>	<b>(21,941)</b>
Effect of exchange rate change on cash and cash equivalents	(1,836)	(3,463)
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>10,459</b>	<b>11,008</b>
Cash and cash equivalents at beginning of period	92,527	103,611
Increase in cash and cash equivalents from consolidation of non-consolidated subsidiaries	272	1,357
Decrease in cash and cash equivalents resulting from exclusion of subsidiaries from consolidation	(4)	(65)
Increase in cash and cash equivalents resulting from merger with unconsolidated subsidiaries	357	–
<b>Cash and cash equivalents at end of period</b>	<b>103,611</b>	<b>115,911</b>



# Corporate Data As of March 31, 2017

Name .....	IHI Corporation
Head office .....	Toyosu IHI Building, 3-1-1 Toyosu, Koto-ku, Tokyo 135-8710, Japan
	Tel: +81-3-6204-7800
President and CEO .....	Tsugio Mitsuoka
Founded.....	December 5, 1853
Incorporated .....	January 17, 1889
Capital.....	107.1 billion yen
Employees (consolidated).....	29,659
Works .....	7
Branches in Japan.....	8
Overseas offices .....	13
Group companies .....	In Japan: 71 (53 subsidiaries, 18 affiliates) Overseas: 150 (121 subsidiaries, 29 affiliates)
Securities code .....	7013
Stock exchange listings .....	Tokyo, Nagoya, Sapporo, Fukuoka
Share unit .....	1,000 <sup>1</sup>
Total number of authorized shares .....	3,300,000,000 <sup>2</sup>
Outstanding shares .....	1,544,236,863 (not including 2,562,679 treasury shares)
Shareholders.....	85,722
Fiscal year.....	April 1 to March 31 of following year
General shareholders' meeting....	June of each year
Record date for year-end dividend..	March 31 of each year
Record date for interim dividend .....	September 30 of each year
Shareholder registry administrator / Special account managing institution.....	1-4-1 Marunouchi, Chiyoda-ku, Tokyo 100-8233, Japan Sumitomo Mitsui Trust Bank, Limited Stock transfer Agency Business Planning Department 2-8-4 Izumi, Suginami-ku, Tokyo 168-0063, Japan 0120-782-031 (toll-free in Japan)

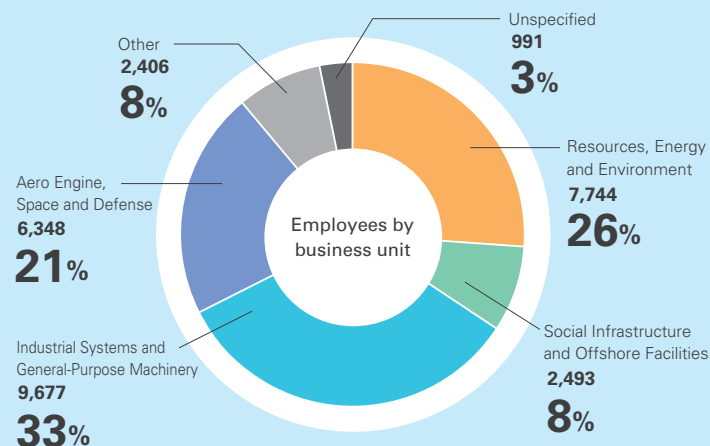
1: At the board of directors meeting held on May 19, 2017, a resolution was made to change the share unit from 1,000 to 100 as of October 1, 2017.

2: In accordance with the resolution made on the consolidation of shares at the 200<sup>th</sup> General shareholders' meeting held on June 23, 2017, the total number of authorized shares will be 300,000,000 as of October 1, 2017.

## Operations Map (consolidated subsidiaries)



## Employees by business unit



Note: Data is the number of officially employed workers, which includes employees on loan to IHI, but not Group employees on loan to other companies. The number of temporary workers is not listed, as these make up less than 10 percent of workers.

# Corporate Data

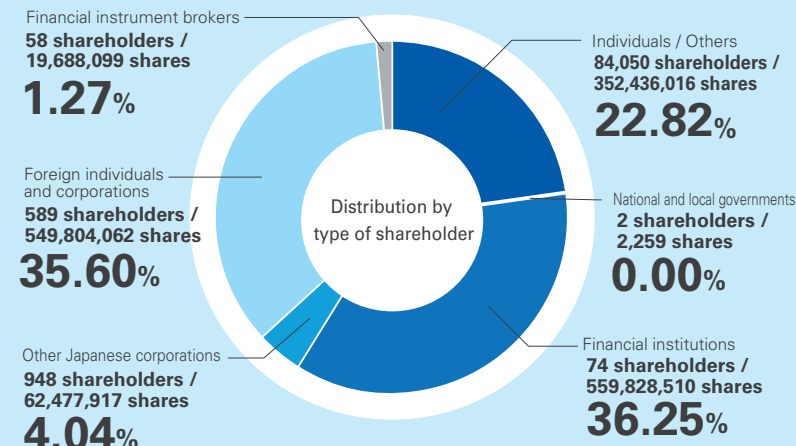
## Major Shareholders

Name	Number of shares held (thousand shares)	Shareholding ratio (%)
Japan Trustee Services Bank, Ltd. (TOSHIBA CORPORATION Retirement Benefit Trust Account re-entrusted by Sumitomo Mitsui Trust Bank, Limited)	55,422	3.58
The Dai-ichi Life Insurance Company, Limited	54,060	3.50
The Master Trust Bank of Japan, Ltd. (holder in Trust)	50,665	3.28
Japan Trustee Services Bank, Ltd. (holder in Trust)	48,573	3.14
Trust & Custody Services Bank, Ltd. as trustee for Mizuho Bank Retirement Benefit Trust Account re-entrusted by Mizuho Trust and Banking Co., Ltd.	45,979	2.97
State Street Bank And Trust Company 505001	43,454	2.81
State Street Bank And Trust Company 505223	40,350	2.61
Japan Trustee Services Bank, Ltd. (holder in Trust 9)	29,286	1.89
Japan Trustee Services Bank, Ltd. (holder in Trust 5)	28,232	1.82
IHI Customer Stock Ownership Association	25,572	1.65

**Notes:**

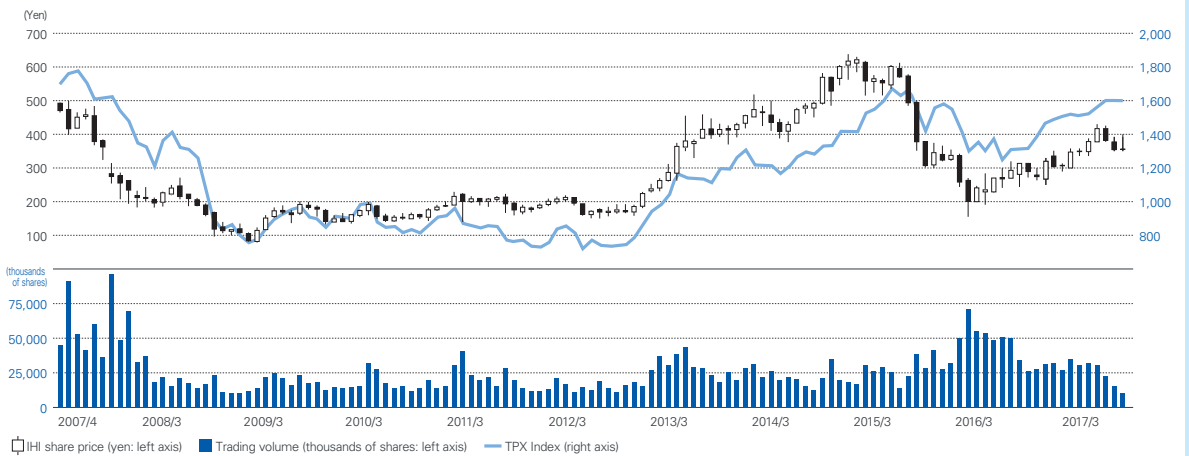
1. The number of shares and shareholder ratios less than a single unit are rounded down.
2. Shareholding ratios are calculated without including the total number of treasury shares.

## Shareholder Composition



Notes: Due to rounding, the total percentage may not add up to 100.

## IHI Stock Performance and Average Trading Volume Per Day



Source: Bloomberg

## About IHI Integrated Report 2017

### Scope

IHI Corporation and its major group companies

### Period

This report covers FY2016, which began on April 1, 2016 and ended on March 31, 2017. However, information prior to and after this period may also be included.

### Guidelines

- International Integrated Reporting Framework, International Integrated Reporting Council
- Sustainability Reporting Guidelines (Version 4/ G4), Global Reporting Initiative
- Environmental Reporting Guidelines (2012 version), Ministry of the Environment

### Inquiries

Please contact us via the inquiry form on IHI website.  
[https://contact.ihi.co.jp/index.php/ihi\\_eng/IHI/form\\_10707](https://contact.ihi.co.jp/index.php/ihi_eng/IHI/form_10707)

### Disclaimer

This report contains facts, both past and present, about the IHI Group, as well as forward-looking projections based on our current management plans and policies. These forward-looking projections are made with the information available at the time and are based on numerous assumptions, and are subject to changes in the business environment and operations. Actual results may differ materially from the forecasts.



## **IHI Corporation**

### **Corporate Social Responsibility Division**

Toyosu IHI Building, 1-1, Toyosu 3-chome, Koto-ku, Tokyo 135-8710 Japan  
TEL: +81-3-6204-7046 FAX: +81-3-6204-8618  
URL: [www.ihico.jp/en/index.html](http://www.ihico.jp/en/index.html)