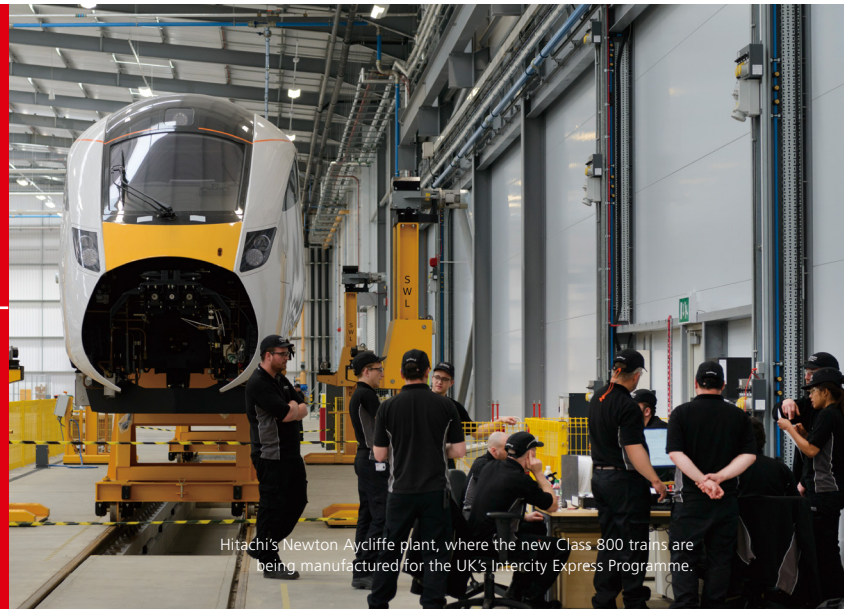
Our Value Creation

CREATING VALUE FOR SOCIETY THROUGH RAILWAYS

Interest is rising in railway infrastructure as a way to deal with the social issues that accompany global warming and increasing urbanization. Hitachi is now expanding its global railway system business using the considerable technological expertise it has developed over many years.



Hitachi's Newton Aycliffe plant, where the new Class 800 trains are being manufactured for the UK's Intercity Express Programme.

Meeting the Railway Systems Needs of Today's Society

There is now great interest in role that railway systems can play in dealing with the various social issues caused by global warming and population growth. As the economies of developing nations rapidly grow, their populations concentrate in cities, causing serious problems like traffic congestion and air pollution and increasing the need for environmentally friendly railway transport. Meanwhile, existing transport infrastructure in developed nations has deteriorated and is in urgent need of renovation to meet current requirements.

Previously, Hitachi focused mainly on manufacturing rolling stock and electrical products, but in recent years it has expanded its business to provide a comprehensive range of services for running railways, such as operation management systems and maintenance services.

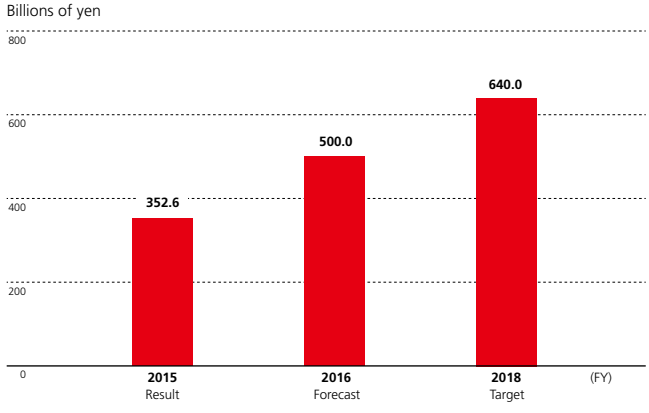
The European Rail Industry Association, UNIFE has estimated that the global railway-related market will grow from ¥13.2 trillion (2014–16) to ¥14.6 trillion (2017–19). We anticipate significant growth for the railway operations segment of our business. In 2015 Hitachi acquired two Italian companies—AnsaldoBreda, a rolling stock manufacturer, and Ansaldo STS, a transportation system technology company—thereby enhancing its signaling and railway operation businesses, as well as its turnkey solutions, with an expanded product portfolio.

A Global Company with Comprehensive Offerings

With the acquisition of the two Italian companies, Hitachi has become one of only a few players in the global railway industry that offers a full lineup including rolling stock and systems. As well as various achievements in the global market to date, most famously demonstrated by the Shinkansen bullet train, Hitachi has an industry-leading track record for safety in operation management systems and in rolling stock. Hitachi has placed particular emphasis on environmental considerations, reducing noise pollution and making increasing use of recycled materials, and is a market leader in bimodal and hybrid systems that switch between electric and diesel operation. Hitachi is also developing technology for using big data to improve the efficiency and safety of railway logistics.

Hitachi is using these strengths to focus not just on specific services—like rolling stock systems, signaling, and traffic management—but also a full range of turnkey railway-system solutions including transport systems and Operations and Maintenance (O&M). In fiscal 2014, O&M accounted for 1% of railway-related revenue, but Hitachi's aim is to increase O&M and turnkey combined to 24% of the ¥640 billion in revenue targeted for fiscal 2018.

Revenues for Railway System Business



Meeting Needs in the Birthplace of Railway

Much of the United Kingdom's rail infrastructure dates back to the nineteenth century. This infrastructure is now deteriorating and in urgent need of modernization. Meanwhile, the British Department for Transport is currently implementing the Intercity Express Programme (IEP), which will replace aged rolling stock on main lines. Hitachi is using the technology it has built up over the years to win further IEP orders.

In October 2004, Hitachi was chosen as preferred bidder, and in the following year received the order for 29 Class 395 trains, with a total of 174 carriages, to run on the 109-km high-speed link between London and the Channel Tunnel. The first trains entered service in 2009. The successful completion of this project around half a year ahead of schedule was a huge boost to Hitachi's business in the United Kingdom. In 2007, Hitachi established the Ashford Train Maintenance Centre in southeast England.

In July 2012, Hitachi officially signed a comprehensive contract with the U.K. Department of Transport, which was moving forward with the IEP, including maintenance services to be provided for 27.5 years, and began design work. In September 2015, Hitachi opened a train manufacturing and assembly plant in Newton Aycliffe, in northeast England's Durham County, to produce rolling stock for the IEP. The plant is only a few hundred meters from the historic Heighington Station on the Stockton and Darlington Railway, the first publicly operated steam train line in the world. The revival of railway manufacture in a place with such importance to the history of rail has produced great expectations in the United Kingdom.

To date, much of the U.K.'s railway traffic management has been done manually, but in July 2015, as part of a project by infrastructure management company Network Rail to introduce automatic systems and improve efficiency, Hitachi won an order to provide operation management systems for Thameslink, a main London commuter line that suffers particularly serious traffic congestion. Hitachi was highly appraised for its 40-plus years of expertise managing routes including commuter lines in the Tokyo area and the Shinkansen network.

Hitachi's Pioneering Spirit at Work in the United Kingdom

As part of the IEP, Hitachi received an order for 122 trains and 866 cars, of which 110 trains will be produced at the Newton Aycliffe plant. The 43,000 m^2 plant has a production capacity of 40 cars a month and, as the company's European manufacturing operation, plays an important role in the global strategy of Hitachi's railway system business. In 2016, it began production of the first three trains for the Great Western Main Line, ready to enter service in 2017. Hitachi also plans to manufacture rolling stock for the East Coast Main Line and for the Abellio ScotRail (ASR) project at the plant.

Manufacturing Plant Manager Darren Cumner says that Newton Aycliffe was chosen for its transport links, availability of skilled workers, heritage, local heavy industry, and presence of other Japanese companies in the area. The plant has introduced a state-of-the-art just-in-time (JIT) production system. As well as fitting the whole production line in a single building, it has been designed to allow rolling stock without production problems to overtake stock that needs extra attention. Thus, even if a problem occurs production can continue to move ahead steadily without any need to halt the line.

Meanwhile, at the new plant Hitachi places special emphasis on two things in particular: dedication to the spirit of craftsmanship and the training of staff with solid technical skills.

There has been much interest in the region regarding the local recruitment of staff. The plant received 16,000 job applications in 2015, far more than the number of jobs available. To date, the plant has hired 550 people, selecting them according to the Hitachi founding concepts of harmony, sincerity, and pioneering spirit and prioritizing values over technical skills. The plant expects to increase its staff to 730 by spring 2017.

The Newton Aycliffe plant uses cutting-edge production methods to build its trains.

Back to Basics: Hitachi Training at the Plant

Production Manager Lee Nockels, who is in charge of staff training at the plant, joined Hitachi in January 2015 after spending 28 years in the army, rising to the rank of major. He notes that, like himself, most of the locally recruited employees are not from the railway industry.

"Some people would see that as a negative," he says. "But I see it as a positive. We have got very little baggage and very few bad habits."

The training for the plant's production employees is an abbreviated version of that implemented at the Kasado Works training manufacturing plant in Yamaguchi Prefecture, Japan. The U.K. program takes a minimum of five weeks, both in the classroom and working on a real train, and covers the basic skills of piping, rigging, and wiring.

Many employees have existing technical skills but are strongly encouraged to go back to the basics. "I always tell people: don't forget what you have learned before, but don't be afraid to learn something new," says Nockels.

As well as running this basic training, the Newton Aycliffe plant is actively engaged in an exchange of technical skills with Kasado Works in Japan. As Hitachi strives to transfer skills to its U.K. operations, many of the plant's staff have visited Japan for training, and there are currently 20 staff from Japan working at the plant. Hitachi's policy is to expand such opportunities for skills transfer in the future.

The Newton Aycliffe plant, pictured here, carries out ongoing technology exchange with Hitachi's flagship Kasado Works in Japan.

Local Staff Who Trained at the Kasado Works

Andy Crowe
Manufacturing Specialist

Before joining Hitachi in August 2015, Andy Crowe spent 21 years fitting kitchens into camper vans. He now leads a team of five employees who install catering units into the trains. Soon after joining Hitachi, he traveled to Japan for 12 days of training at the Kasado Works. In addition to learning the procedures, he recorded photos and videos of them along with detailed descriptions. The aim was to produce detailed standard operating procedures (SOPs) to be used by staff back in the United Kingdom. Crowe says that he was particularly impressed by the accuracy of the work in Japan. "Door gaps have got to be a certain measurement, and sometimes you are working to a precision of 0.5 millimeter," he says. "It would be 3 or 4 millimeters for a camper van."

Andy Dick
Section Leader for the ASR Project

Andy Dick joined Hitachi in March 2015 and left for Japan after just 21 days. Much of the training at the Kasado Works focused on quality, he says, giving the example of a multicoil wire. The wire might have 1,000 strands or more; if a scratch were found on just one of those, the entire multicoil would be rejected. "It was unbelievable," he says. Dick spent three months in Japan and observed about 900 different operations. "It was a difficult job," he says, "but made easier by the way we were welcomed by the Kasado staff."

New Systems to Ensure Japanese Quality in the United Kingdom

In Japan, employees often build up experience at the same company over many years, learning many different processes and skills. But U.K. employees are much more likely to change jobs in search of promotion. It is also relatively rare for technical staff to hone their skills in a single factory, and staff from a variety of technical backgrounds tend to work together. In order to manufacture rolling stock in the United Kingdom with the same assurance of quality as in Japan, and to make that process easily comprehensible to U.K. staff, Hitachi is systemizing procedures and the technical skills of experienced employees in Japan and recording those skills in use. In this way, Hitachi aims to increase product quality even further.

For the IEP rolling stock alone, some 700 SOPs have been defined and recorded. At the Kasado Works in Japan, hundreds of hours of video and thousands of photos have been taken then turned into manuals that are easily understandable by employees in the United Kingdom. Staff in the manufacturing area at the Newton Aycliffe plant can consult them whenever they wish using tablets available throughout the plant.

Manufacturing Engineer Fumio Fujinaga was transferred to the Newton Aycliffe plant in August 2015. An expert in rolling stock manufacture, he honed his skills at the Kasado Works in Japan. While at Kasado, he was involved in the training of staff from the United Kingdom, and since his transfer he has also had responsibility for staff development in the U.K. facility. At times, he has faced challenges in the form of communication difficulties, differences in technical background, and contrasting cultural attitudes to work. Nevertheless, he says that the skills transfer successfully achieved to date is thanks to the "pride of local staff in train manufacture" and their "keenness to learn."

CSR Activities at the Newton Aycliffe Plant

Senior HR Advisor Jacquie Smith was one of the first people hired at the plant, where she has been deeply involved in its CSR activities.

An early and key CSR project for the plant, she says, was becoming a founding member of the South Durham University Technical College (UTC), together with the University of Sunderland and Gestamp Tallent Ltd. The UTC is located just a short walk from the Newton Aycliffe plant. Classes are due to start in September 2016 for students aged 14 to 19 specializing in manufacturing, technology, and engineering. While some students may eventually work for Hitachi, others will be employed by other companies in the business park or fill skill shortages in the wider northeast England region.

The plant is also working with the Durham Education Business Partnership to offer career education in schools. A number of staff members volunteer as "business ambassadors" visiting schools and explaining the plant's work.

The plant is also working hard to encourage as many job applications from local people as possible. As part of that, it is cooperating with a social rented accommodation company called Livin that helps its tenants find good quality employment. The plant has also helped run workshops on writing CVs and filling out online applications.

Smith, who also has responsibility for recruitment, says that unfortunately the plant has received relatively few applications from women seeking technical jobs. "The reason may be that while many women have applied for office-based jobs at the plant, train manufacturing seems to be seen as work for men," she says. "Even women already working in manufacturing excluded themselves from working here," says Smith. To help redress that balance the plant has held two women-only open days to give females a taste of the working environment and the type of work done. The team is also working closely with the UTC by holding events to encourage more girls to study STEM and become the engineers of the future.

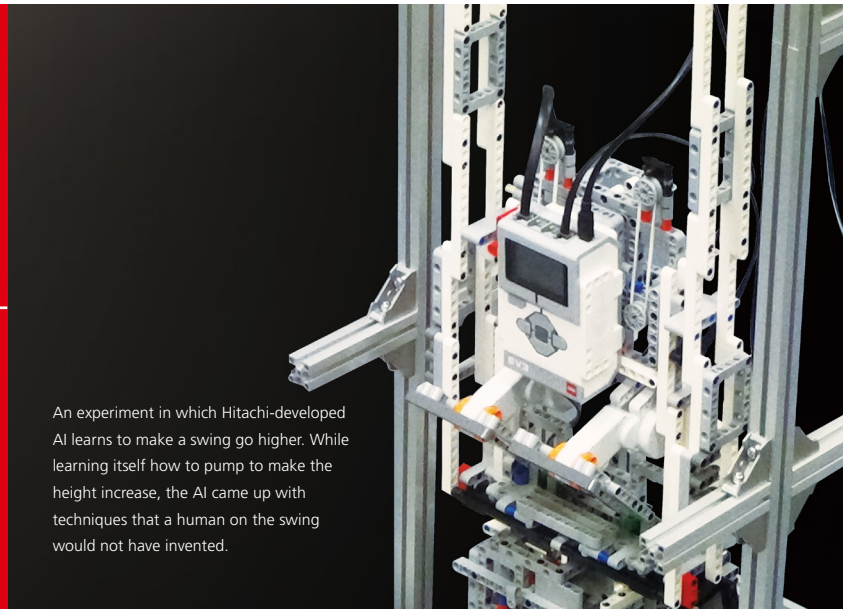
Yusuke Oyama (left) and Fumio Fujinaga, dispatched to Newton Aycliffe from the Kasado Works.

Jacquie Smith, who is in charge of CSR at the Newton Aycliffe plant

HITACHI'S AI OPENING A NEW ERA

Hitachi AI Technology/H

Hitachi's artificial intelligence technology, Hitachi AI Technology/H, is generating new economic growth with versatility that makes it applicable to diverse industries even in a rapidly changing, unpredictable age.



An experiment in which Hitachi-developed AI learns to make a swing go higher. While learning itself how to pump to make the height increase, the AI came up with techniques that a human on the swing would not have invented.

AI for Continuing Economic Growth

Recent years have seen an increase and diversification of data types and formats, thanks to the rapid spread of cloud computing, mobile devices, and social media, along with the development of new sensor technologies to capture this data.

In previous analyses conducted by human specialists, it was becoming increasingly difficult to test hypotheses through exhaustive sifting of this vast amount of data. As these data-driven results became more inaccessible, it gave rise to social problems, such as a digital divide that was directly linked to an income divide.

In response to these changes, Hitachi developed technology to use and apply this "big data," and in 2012 launched a full-scale big data analysis service. We have relationships with a wide range of customers in the electric power, manufacturing, distribution, finance, transportation, and water industries, and are making efforts to link infrastructure and products using the Internet of Things (IoT) and other means. In 2016, we began providing the Lumada IoT platform, developed as a core for social innovation. One of its basic functions is Hitachi AI Technology/H, or simply "H" hereafter.

Now that Hitachi's H has been put to practical use in various industrial fields, we are building on our findings to improve the future, based on past data, and successfully deriving methods to deal with unknown problems.

Hitachi AI Helping People Work Together

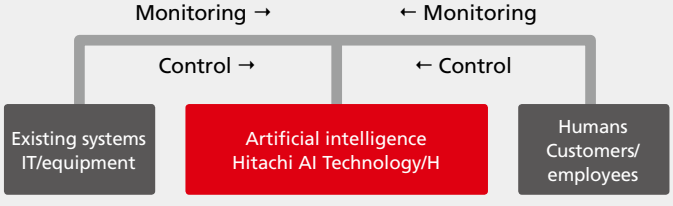
The major characteristic of H is its versatility. Most new technology has a history of being invented first for a specific purpose, later spreading throughout more of industry and society as it is generalized. At Hitachi, our prediction that AI will certainly reach an age of generalization has led us to pursue a more versatile AI implementation from the very beginning.

H has three further characteristics.

(1) Human users define and input the outcome to be achieved.
(2) There is no need to define a specific method to solve the problem or application in question.
(3) H can be applied to existing systems.

For example, when the goal of "increasing sales" is input into H, it analyzes enormous quantities of past data and "thinks" on its own to derive the best method to achieve this. Since it can be added to existing systems, installation costs are also kept down. It is still humans, however, that define the goal for H and implement the measures it recommends. Hitachi H is a system in which humans and AI learn together through data to raise productivity.

Hitachi's Approach to AI Systems



Point 1:
Learn from data and grow while adapting to circumstances to produce results

Point 2:
Optimize the system as a whole, including its human users

Example of AI Development

Versatile Hitachi AI Technology/H can respond to a wide range of work content, and is already producing results in many different industrial sectors.

Versatile Technology for Application in Diverse Fields

Hitachi provides a wide range of services, from construction of electric power facilities, railroads, and other large-scale social infrastructure to manufacture of general household products. The accumulation of business data in these diverse fields worked to our advantage in the development of H. With the same AI software, H provides comprehensive improvement strategies for businesses in completely different industries. Our record to date includes 57 cases in 14 fields, including distribution, logistics, industrial plants, finance, transportation, and manufacturing.

Hitachi has since 2004 been researching and developing technology to objectively measure human behavior. Through our analysis of huge volumes of behavioral data, we have found that people who work in organizations featuring behavioral diversity have high levels of happiness, and that groups with high levels of organizational happiness have high productivity. In other words, employees' happiness is closely related to their organization's activity and should be considered to strongly affect productivity. Hitachi has quantified this as a unique index: "organizational activation." In June 2016, we kicked off a demonstration experiment using H to offer advice to 600 sales and marketing division employees in the Hitachi Group in order to effectively increase happiness. The aim is to raise productivity by providing the organization with fresh energy tied to increased individual happiness.

With AI, Hitachi pursues optimization of overall systems, including the humans that operate them, and is accelerating its Social Innovation Business.

Employees with name-tag-style wearable sensors, which collect data on their behavior when interacting with others for analysis by H.

Contributing to Energy Savings in Railway Operation

With the goal of reducing CO_2 to counter global warming, improved energy efficiency is needed in railway systems in Japan and other countries. Railway systems consume 60% to 80% of their total energy during rolling stock operation, and Hitachi has developed rolling stock and related systems to achieve energy savings. H was introduced to verify these energy-saving effects.

Railway systems collect many different types of sensor information, including through remote monitoring of rolling stock status. H was applied to this data to derive methods to effectively reduce energy consumption. After analyzing a year's worth of data, the program identified various characteristics related to energy consumption from factors including speed, track gradient, and operating schedule. Based on analysis of the massive data on the control of the "notch," equivalent to the accelerator on an automobile, and its electric power consumption, we reduced drive system power consumption by shortening the time of train operation at maximum notch and lengthening the time of notch-off operation. Even greater effects are predicted if operating procedures can be further improved.

Future uses of H for railway systems big data are envisioned to include applications to reduce energy consumption in the auxiliary circuit systems used in air-conditioned cars and door opening/closing, and to make settings with the purpose of achieving riding comfort in terms of noise and vibration. In railway maintenance and management work as well, it may be possible to use H to analyze employee "happiness" and apply the findings to raising work efficiency. In raising car utilization, H is promising for deriving the relationship between car deterioration with age and operating conditions, and may possibly be applied to prevention and detection of equipment failure.

Use in the Field of Finance for a FinTech Age

Financial services have expanded together with the progress in IT. FinTech, a coined term combining the words "finance" and "technology," refers to the new financial services that have appeared in recent years, bringing together finance and IT to improve user convenience. Typical examples of FinTech are services using the Internet to move capital beyond the scope of traditional services and business frameworks, as well as crowdfunding, which procures capital from multiple individuals using social networks.

Hitachi has focused on AI in the financial industry as well, conducting a joint experiment with The Bank of Tokyo-Mitsubishi UFJ that puts human behavior measurement and analysis tools to use in improving quality and supporting work style reforms. Up to now it has been possible to acquire behavioral data on several hundred people in units of seconds, but specialist analysis was required to judge those people's level of contribution to organizational activation, and both time and cost were issues. Hitachi developed name-tag-style wearable sensors to measure people's behavior when in groups. H then analyzed the behavioral data obtained from those sensors, automatically and efficiently producing recommendations on ways of working to raise productivity.

The experiment drew on behavioral data from 40 employees collected over three weeks. It found, for example, that one employee showed a high level of organizational activation on a day when there were frequent short conversations, including greeting others and making brief reports. This demonstrated that while the productivity of specific individuals may decrease with repeated conversations, the productivity of the organization overall can rise. AI analyses that quantify individual contributions to the organization as a whole can be useful for optimizing services and working styles.

AI to Link Manufacturing-Sector Facilities

Use of IoT is progressing in the manufacturing sector. In Western countries, government-led efforts are under way to construct and standardize new industrial "ecosystems" integrating the manufacturing and IT industries.

Hitachi has provided control and production management systems to the steel, automobile, pharmaceutical, and various other industries, and has a proven record in constructing large-scale control systems in fields from energy and transportation to water and sewage. Building on this experience, we produce value by linking various systems to the manufacturing industry and social infrastructure. We have proposed the concept of "symbiotic autonomous decentralization" to promote new growth.

Previously, optimization was limited in scope to analyses on the individual system level and site improvements based on those analyses. Linking factories by symbiotic autonomous decentralization, however, makes it possible to carry out optimization over multiple systems and create new value chains.

Other beneficial effects of linking factories include improved energy productivity and coordination with supply chain management across global sites. An impact is also expected in business continuity plan (BCP) responses to cyber attacks and other factory operation risks.

In some manufacturing sites, H has been used to analyze vast amounts of data collected by control systems on manufacturing equipment, manufacturing processes, and product quality. We have begun to analyze the relation between equipment or processes and quality or yield rate. H can derive statistical characteristics through big data analysis that would be nearly impossible for humans to perform. In manufacturing sites where conditions are inconsistent, due to factors like manufacturing processes that change daily and equipment wear and deterioration, H is useful in defining operating conditions that are appropriate to the changes and obtaining new hints for improvements.

Application Examples of Hitachi AI Technology/H

Just one AI software package has enabled versatile improvement in fields from distribution, logistics, and industrial plants to finance, transportation, and manufacturing

Distribution

Detailed analysis of customer and employee behavior identified "high sensitivity spots" to station employees to boost average sales per customer.
↓
Sales per customer **up 15%**

Logistics

Analysis of daily shipment work results led to work instruction improvement plans for the following day; these were reflected in the picking list (work instruction chart).
↓
Productivity up with **8% reduction in work hours**

Call centers

Data analysis on employee behavior found relationship between verbal support from superiors and order receipt rate. H identified employees needing priority attention.
↓
Order receipt rate **up 27%**

Desalinization plants

Examination of operating history data helped reduce clogging of the reverse osmosis (RO) membrane, a factor impacting uptime for seawater filtration units.
↓
Operating cost: **3.6% reduction**

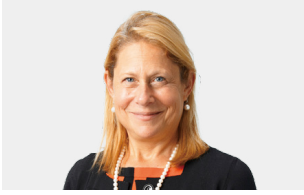
Board of Directors

As of June 30, 2016

Outside Directors

Baba Kalyani

1983 Joint Managing Director, Bharat Forge Limited
1994 Managing Director, Bharat Forge Limited
1997 Chairman & Managing Director, Bharat Forge Limited (Currently in office)
2016 Director, Hitachi, Ltd.



Cynthia Carroll

1991 General Manager, Foil Products, Alcan Inc.
1996 Managing Director, Aughinish Alumina Ltd., Alcan Inc.
1998 President, Bauxite, Alumina and Speciality Chemicals, Alcan Inc.
2002 President & CEO, Primary Metal Group, Alcan Inc.
2007 CEO, Anglo American plc. (Retired in April 2013)
2013 Director, Hitachi, Ltd.

Sadayuki Sakakibara

2002 President and Representative Member of the Board, Toray Industries, Inc.
2010 Chairman of the Board and Representative Member of the Board, Toray Industries, Inc.
2013 Director, Hitachi, Ltd.
2014 Chairman of the Board, Toray Industries, Inc.
2015 Chief Senior Advisor and Chief Senior Counselor, Toray Industries, Inc. (Currently in office)

George Buckley

1993 Chief Technology Officer, Motors, Drives and Appliances, Emerson Electric Company
1994 President, US Electrical Motors, Emerson Electric Company
1997 President, Mercury Marine Division and Corporate Vice President, Brunswick Corporation
2000 President and Chief Operating Officer, Brunswick Corporation
Chairman and Chief Executive Officer, Brunswick Corporation
2005 Chairman of the Board, President and Chief Executive Officer, 3M Company
2012 Executive Chairman of the Board, 3M Company (Retired in May 2012)
Chairman, Arle Capital Partners Limited (Retired in December 2015)
Director, Hitachi, Ltd.

Louise Pentland

1997 Admitted as a Solicitor (UK)
2001 Senior Legal Counsel, Nokia Networks, Nokia Corporation
2004 Vice President and Head of Legal, Enterprise Solutions, Nokia Corporation
2007 Vice President, Acting Chief Legal Officer and Head of IP Legal, Nokia Corporation
2008 Senior Vice President and Chief Legal Officer, Nokia Corporation
2009 Admitted to New York State Bar Association
2011 Executive Vice President and Chief Legal Officer, Nokia Corporation (Retired in May 2014)
2015 General Counsel, PayPal, eBay Inc.
Director, Hitachi, Ltd.
Senior Vice President and Chief Legal Officer, PayPal Holdings, Inc. (Currently in office)

Harufumi Mochizuki

2002 Director-General for Commerce and Distribution Policy, Minister's Secretariat, Ministry of Economy, Trade and Industry of Japan ("METI")
2003 Director-General, Small and Medium Enterprise Agency, METI
2006 Director-General, Agency for Natural Resources and Energy, METI
2008 Vice-Minister of Economy, Trade and Industry of Japan
2010 Special Advisor to the Cabinet of Japan (Retired in September 2011)
Senior Adviser to the Board, Nippon Life Insurance Company (Retired in April 2013)
2012 Director, Hitachi, Ltd.
2013 President and Representative Director, Tokyo Small and Medium Business Investment & Consultation Co., Ltd. (Currently in office)

Takatoshi Yamamoto

1995 Managing Director, Morgan Stanley Japan Limited
1999 Managing Director and Vice Chairman, Tokyo Branch, Morgan Stanley Japan Limited
2005 Managing Director and Vice Chairman, UBS Securities Japan Co., Ltd.
2009 Managing Director, CASIO COMPUTER CO., LTD.
2011 Advisor, CASIO COMPUTER CO., LTD. (Retired in June 2012)
2016 Director, Hitachi, Ltd.

Philip Yeo

1970 Joined Ministry of Defense of Singapore
1979 Permanent Secretary, Ministry of Defense of Singapore
1986 Chairman, Economic Development Board of Singapore
2001 Chairman, Agency for Science, Technology and Research of Singapore
2007 Senior Advisor for Science and Technology to the Ministry of Trade & Industry, Singapore (Retired in September 2008)
Special Advisor in Economic Development, Prime Minister's Office, Government of Singapore (Retired in August 2011)
Chairman, SPRING Singapore (Currently in office)
2012 Director, Hitachi, Ltd.

Hiroaki Yoshihara

1978 Joined Peat Marwick Mitchell & Co.
1996 National Managing Partner, the Pacific Rim Practice, KPMG LLP
1997 The Board Member, KPMG LLP
2003 Vice Chairman and Global Managing Partner, KPMG International (Retired in April 2007)
2014 Director, Hitachi, Ltd.

Directors

Kazuyuki Tanaka

1977 Joined Hitachi Chemical Company, Ltd.
2005 Executive Officer, Hitachi Chemical Company, Ltd.
2006 Senior Executive Director, Hitachi Media Electronics Co., Ltd.
Representative Director and President, Hitachi Media Electronics Co., Ltd.
2008 Vice President and Executive Officer, Hitachi Chemical Company, Ltd.
2009 Representative Executive Officer, President & Chief Executive Officer, Hitachi Chemical Company, Ltd.
Director, Representative Executive Officer, President & Chief Executive Officer, Hitachi Chemical Company, Ltd.
2016 Chairman of the Board, Hitachi Chemical Company, Ltd. (Currently in office)
Director, Hitachi, Ltd.

Hiroaki Nakanishi

Representative Executive Officer

1970 Joined Hitachi, Ltd.
2003 General Manager, Global Business Vice President and Executive Officer
2004 Senior Vice President and Executive Officer
2005 Senior Vice President and Executive Officer, Hitachi, Ltd.
Chairman and Chief Executive Officer, Hitachi Global Storage Technologies, Inc.
2006 Executive Vice President and Executive Officer, Hitachi, Ltd. (Retired in December 2006)
2009 Executive Vice President and Executive Officer, Hitachi, Ltd.
2010 President, Hitachi, Ltd.
President and Director, Hitachi, Ltd.
2014 Chairman & CEO and Director, Hitachi, Ltd.
2016 Chairman of the Board and Representative Executive Officer, Hitachi, Ltd.

Toyoaki Nakamura

1975 Joined Hitachi, Ltd.
2006 General Manager, Finance Department I
2007 Senior Vice President and Executive Officer
Senior Vice President, Executive Officer and Director
2009 Senior Vice President and Executive Officer
2012 Executive Vice President and Executive Officer (Retired in March 2016)
2016 Director

Toshiaki Higashihara

Representative Executive Officer
President & CEO

1977 Joined Hitachi, Ltd.
2006 Chief Operating Officer, Information & Telecommunication Systems
2007 Vice President and Executive Officer (Retired in March 2008)
2008 President, Hitachi Power Europe GmbH
2010 President and Chief Executive Officer, Hitachi Plant Technologies, Ltd.
President and Representative Director, Hitachi Plant Technologies, Ltd.
2011 Vice President and Executive Officer, Hitachi, Ltd.
2013 Senior Vice President and Executive Officer, Hitachi, Ltd.
2014 President & COO, Hitachi, Ltd.
President & COO and Director, Hitachi, Ltd.
2016 President & CEO and Director, Hitachi, Ltd.

Note: Directors are listed by position and in Japanese alphabetical order within each grouping.

Executive Officers

As of August 1, 2016

President & CEO

Toshiaki Higashihara*

Overall operations

Executive Vice Presidents and Executive Officers

Ryuichi Kitayama*

Assistant to the President, marketing and sales, and social innovation business promotion

Yutaka Saito*

Assistant to the President and open innovation promotion

Koji Tanaka*

Assistant to the President

Toshikazu Nishino*

Assistant to the President and management strategies

Senior Vice Presidents and Executive Officers

Masakazu Aoki

Industrial products business

Shinichiro Omori

Cost structure reform and information technology strategies

Toshiaki Kuzuoka*

Corporate communications and CSR, legal matters, risk management and corporate auditing

Keiji Kojima

Service & platform business

Hiroshi Sato

Building systems business

Keiichi Shiotsuka

ICT business

Yasuo Tanabe

Government & external relations

Alistair Dormer

Railway systems business

Mitsuaki Nishiyama*

Finance and corporate pension system

Vice Presidents and Executive Officers

Hiroyuki Ugawa

Manufacturing & commerce business

Ryuichi Otsuki

Regional strategies (Americas) and ICT business (platform business)

Atsushi Oda

Electric power business

Kaoru Kawano

Marketing and sales (industrial products business)

Kenichi Kokubo

Regional strategies (China)

Keizo Kobayashi

Urban solutions business

Kunizo Sakai

Water business

Setsuo Shibahara

ICT business

Akira Shimizu

Government & external relations

Norihiro Suzuki

Research & development

Yoshitaka Tsuda

Marketing and sales (ICT business and healthcare business)

Hidenobu Nakahata

Human capital

Hiroshi Nakayama

Cost structure reform and supply chain management (MONOZUKURI and quality assurance)

Katsumi Nagasawa

Nuclear power systems business

Isao Narukawa

Marketing and sales (nuclear power systems business, electric power business and energy solutions business)

Masaaki Nomoto

Energy solutions business

Kentaro Masai

Railway systems business

Mamoru Morita

Management strategies

Masaya Watanabe

Healthcare business

Representative Executive Officer

Hiroaki Nakanishi*

General management

Note: Executive officers are listed by position and in Japanese alphabetical order within each grouping.
* Denotes executive officers who are representative executive officers.