

Overview

Second Step toward Realizing 2020 VISION

Hidekazu Nakakuro

Manabu Arami

VISION AND MISSION OF HITACHI CONSTRUCTION MACHINERY GROUP

IN 2010, Hitachi Construction Machinery Co., Ltd. formulated its 2020 VISION mid-term management vision that, in looking a decade ahead to 2020, expresses how the company aims to become a “‘close and reliable partner’ anywhere on the earth with best solutions through Kenkijin Spirit.*1” To achieve this, the company undertook its three-year Go Together 2013 Mid-term Management Plan, which ran from FY2011 to FY2013, and is currently working through its GROW TOGETHER 2016 Mid-term Management Plan from FY2014 to FY2016 (see Fig. 1).

Based on exceptional technology built up over many years, Hitachi Construction Machinery aims to become a global manufacturer of construction machinery with an overwhelming presence by supplying solutions and services that are one step ahead.

*1 Expresses the values and standards of conduct of Hitachi Construction Machinery Group employees in terms of a mindset.

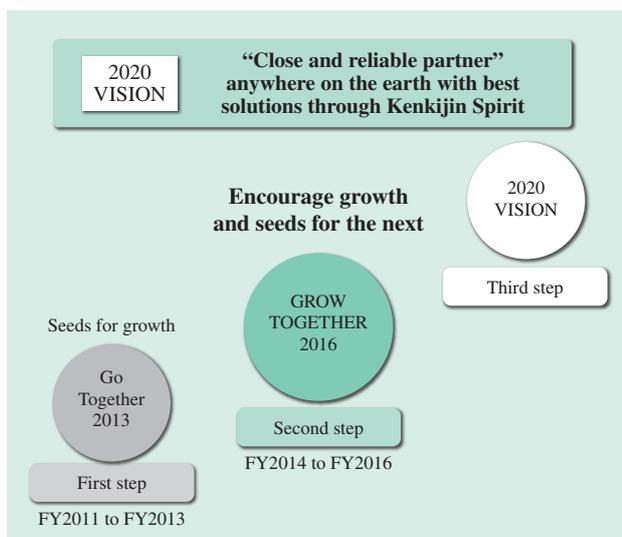


Fig. 1—Toward Realizing 2020 VISION. GROW TOGETHER 2016, the second step in the 2020 VISION plan formulated to look forward to 2020, is now in progress.

As a manufacturer of construction machinery, Hitachi Construction Machinery’s corporate vision is to, “actively develop machinery to make the relationship between people and work more comfortable, advanced, and efficient.” Its mission is to make an ongoing contribution to sustainable development by customers and communities by utilizing the diverse products and services that make its vision a reality, to help build and maintain social infrastructure throughout the world.

Hitachi Construction Machinery aims to achieve optimal management throughout the group by continuing the six strategies identified in the previous Go Together 2013 Mid-term Management Plan (research & development, marketing & sales, lifecycle support, mining operation, global production, and global management), and aligning those vectors along the three axes of products, solutions, and regions. While the present business environment makes a major increase in demand for construction machinery look unlikely, the prospect of continued mid- to long-term market growth remains for the construction machinery required to keep up with population increase, urbanization, and further infrastructure provision in emerging economies.

To help build and maintain social infrastructure throughout the world, Hitachi Construction Machinery intends to draw on its networking skills and advanced technical capabilities in hardware and software to continue supplying superior products, services, and solutions that satisfy customers everywhere. Furthermore, to fulfill its social obligations as a business that operates globally, activities at Hitachi Construction Machinery include helping overcome global environmental problems through the latest energy-efficient products, developing advanced technologies that utilize information and communication technology (ICT) to help improve productivity and maintain safety in the workplace, and supplying products that contribute to disaster sites around the world.

As business has become increasingly globalized in recent years, Hitachi Construction Machinery formulated the “Kenkijin Spirit” in 2008 to express the values and standards of conduct of the 20,000 people employed in Japan and elsewhere by the Hitachi Construction Machinery Group so that they could share common values and bring the collective capabilities of the group to bear on achieving the Mid-term Management Plan. This has helped boost its brand value.

The “three Cs” of the Kenkijin Spirit are “Challenge,” “Customer,” and “Communication.”

“Challenge” means learning and adopting a professional attitude to taking on the challenges of research and development, production and procurement, new machine sales, lifecycle support, and other processes to improve technical and marketing capabilities. “Customer” means always thinking about customers’ true needs from their standpoint and perspective. “Communication” means trusting in teamwork and taking the initiative in reporting, communicating, and consulting. By sharing these “three Cs” in common, Hitachi Construction Machinery aims to express its identity while growing along with its numerous stakeholders by helping create a sustainable society through the supply of construction machinery.

SECOND STEP TOWARD REALIZING 2020 VISION

In the Go Together 2013 Mid-term Management Plan, the first step toward realizing 2020 VISION, Hitachi Construction Machinery worked on building

the foundations of a global supply chain to underpin ongoing growth. This has included commissioning a plant in the Tver Oblast (province) of Russia, a joint-venture plant with Deere & Company in the São Paulo province of Brazil, and the maintenance and expansion of existing production facilities. Along with strengthening its infrastructure for the global supply of spare parts, Hitachi Construction Machinery has also opened the Tsukuba Central Parts Depot to reduce logistics costs. Another area of activity is the provision of overseas sales and service centers in its efforts to raise the level of customer satisfaction around the world (see Fig. 2).

In the GROW TOGETHER 2016 Mid-term Management Plan (the second step), Hitachi Construction Machinery is working to encourage the growth of the seeds it planted in the first step and to sow the seeds of its future.

The company’s six key activities are as follows.

- (1) Enhancement of development marketing and advanced technology development
- (2) Enhancement of sales and marketing
- (3) Enhancement of mining^(a) operation
- (4) Enhancement of parts and service operation
- (5) Supply chain management (SCM) reform and enhancement of MONOZUKURI
- (6) Enhancement of the entire value chain

(a) Mining

The extraction of minerals out of the ground, or other forms of digging work. Mining is the generic term for work that includes digging ore out of the ground, concentrating it by separating out the valuable material, smelting it to obtain metal, and refining it to increase its purity. “Mining” in the narrow sense of the word refers to the digging process only, with the term “processing” used for sorting ore and subsequent steps.

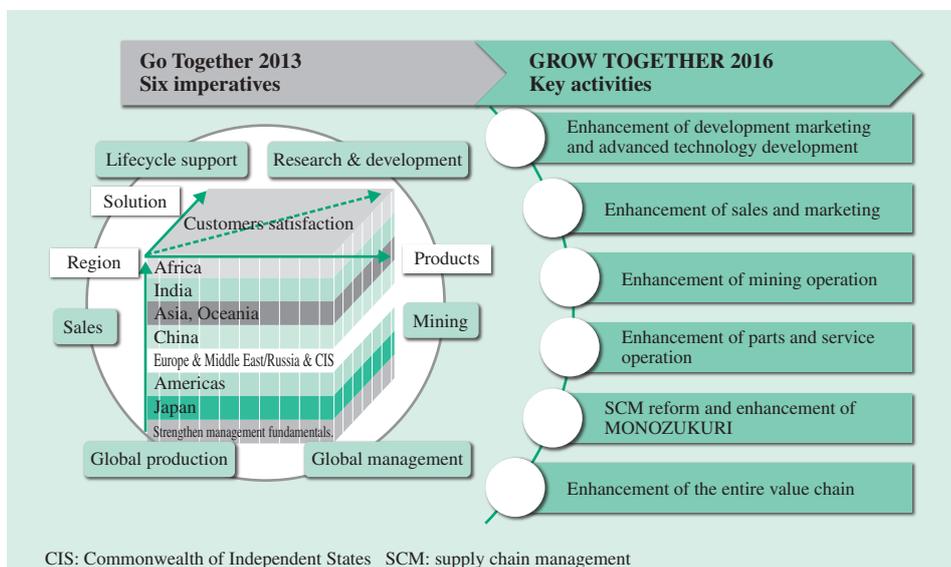


Fig. 2—Key Strategies of GROW TOGETHER 2016. Continuing on from the six strategies identified in Go Together 2013, GROW TOGETHER 2016 is working on six key activities.

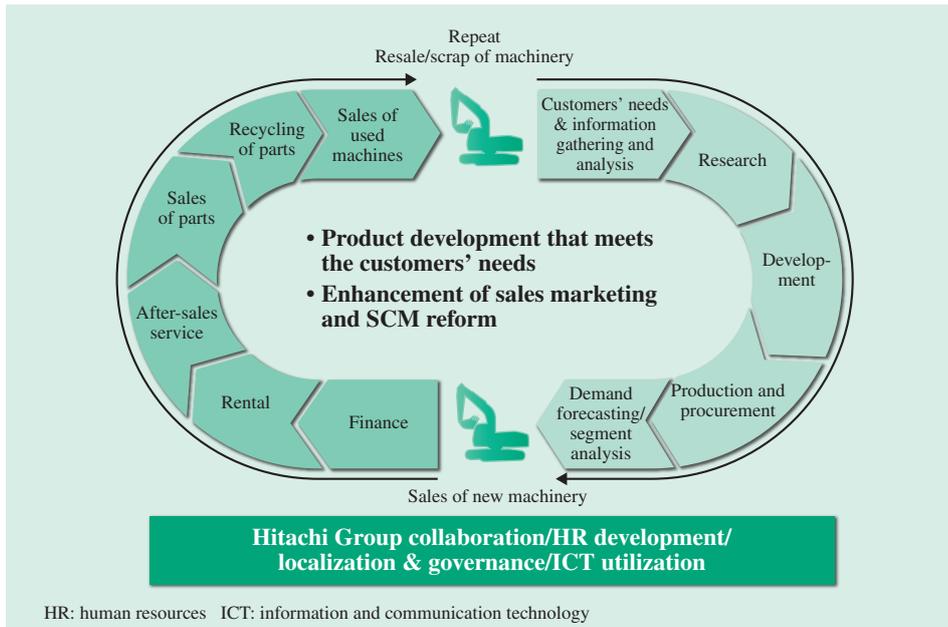


Fig. 3—Strengthening the Entire Value Chain.

This aims to utilize ICT for improving customer satisfaction and increasing sales and profit through the lifecycle of construction machinery.

Hitachi Construction Machinery is seeking to improve profitability further by strengthening its mining-related business and its high-margin lifecycle support business, which it sees as long-term growth drivers.

Also, based on a structure that splits its operations into nine regional businesses [Japan, Asia, Oceania, China, India, Europe and the Middle East, Russia and the Commonwealth of Independent States (CIS), Africa, and the Americas] according to their different market characteristics, Hitachi Construction Machinery is working on company-wide activities that relate to its sales and marketing capabilities and SCM in conjunction with “mother factories” in Japan. It is also improving its ability to generate cash flow by reorganizing itself into a management structure with a high level of operational efficiency that can coordinate production facilities around the world and keep up with the market.

To strengthen its manufacturing capabilities, Hitachi Construction Machinery is shortening the lead times from sales forecasting and ordering to delivery, and raising the level of production process improvement activities and the associated human resource development and energy efficiency management to improve FY2016 unit energy costs^(b) by 30% or more compared to FY2010.

To strengthen the entire value chain, Hitachi Construction Machinery is seeking to utilize ICT

(b) Unit energy costs

The amount of electric power, heat, or other form of energy required to produce a fixed amount of product. Unit energy cost is used as an indicator of how efficient production is in terms of energy, and of how energy efficiency is progressing.

and operate services that span the entire lifecycle of construction machinery on a global basis. These services include finance, rentals, parts re-manufacturing, and second-hand machine resale. By strengthening the entire value chain, winning the trust of customers and creating a business model that differentiates Hitachi Construction Machinery from its competitors will form the core of future activities (see Fig. 3).

UTILIZATION OF ICT DESIGNED FOR GLOBALIZATION

Advances in mobile devices and the incorporation of advanced functions (collision avoidance, coordinated control, energy efficiency, and so on) into products such as automobiles brought about by the revolution in communications technology and advances in big data analytics mean that growth is anticipated in the market for ICT-based solutions. Labor shortages brought about by the aging of the construction industry workforce and the lack of young people entering the industry are a societal challenge and are driving work on ways of using ICT to improve labor productivity, such as information-oriented construction^(c).

Meanwhile Hitachi Construction Machinery’s advantage is that it has built a digital platform that

(c) Information-oriented construction

A concept relating to the use of ICT to perform construction work with a high level of efficiency, precision, and quality, and the systems required to achieve this. In addition to adopting more advanced construction practices, it is a way of improving the productivity and ensuring the quality of an entire construction project by utilizing the electronic information obtained from work in other processes.

combines products and services that exploit its know-how in strengthening services and support and its synergies with other Hitachi businesses, with approximately 190,000 of its machines operating around the world fitted with communication units that collect data on machine position and operation. This enables Hitachi Construction Machinery to become a trusted brand and differentiate itself from its competitors by delivering value over and above customer expectations.

Among the machines made by Hitachi Construction Machinery are hybrid excavators and industry-first (based on Hitachi Construction Machinery research) hybrid wheel loaders^(d). It is also working to make its machines smarter, including by adopting the “Around View Monitor with moving object detection function^(e)” technology from Nissan Motor Co., Ltd. and Clarion Co., Ltd. to provide operators with better visibility and safety.

Other work includes the development of the autonomous haulage dump-trucks, which integrate machinery and systems, and the global deployment of the ConSite^{*2} service (described below) that utilizes operational data from machines.

(d) Hybrid wheel loaders

Wheeled tractor-loaders used to transport earth or gravel at construction sites or mines, or to load it onto dump trucks. Also used in agriculture or for clearing snow. While most wheel loaders are powered by a diesel engine, hybrid models use a diesel engine to drive a generator that supplies power to the electric motors that drive the vehicle.

(e) Around View Monitor with moving object detection function

In addition to displaying images from four cameras mounted on the front, back and sides of the vehicle, this system also analyzes the image signals to detect nearby moving objects in realtime. If the cameras detect a moving object while the vehicle is stationary, or starting to move forward or backward, the system displays this on the screen and gives the driver an audible warning.

*2 ConSite is a trademark of Hitachi Construction Machinery Co., Ltd.

HITACHI'S INVOLVEMENT IN MINING MARKETS IN THEIR ROLE AS GROWTH DRIVERS

For the mining industry, Hitachi Construction Machinery has developed a highly reliable ultra-large hydraulic excavators and dump trucks driven by large, alternating current (AC) electric motors that utilize bullet train technology developed by Hitachi, Ltd. These machines are used in mines around the world.

Given the difficult business environment, achieving more efficient mine management to reduce costs is an even greater challenge for resource companies than it has been in the past. Wenco International Mining Systems Ltd., a Canadian information systems company, has completed testing and evaluation of a system that uses advanced cloud technologies of Hitachi, Ltd. to consolidate information about mine management in the cloud and provide centralized management, and has now started commercializing the product. The system aims to make mining operation more efficient by using the centralized analysis of operational data from mining equipment to support the routing and dispatching of dump trucks and help perform maintenance appropriately (see Fig. 4).

In the future, Hitachi Construction Machinery aims to build a win-win relationship with the customers of its mining equipment by incorporating electronics and automotive safety control systems, two of Hitachi's strengths, as well as by enhancing integration with systems to achieve overwhelming improvements in performance and reliability and to minimize lifecycle costs that are measured by unit of material excavated.

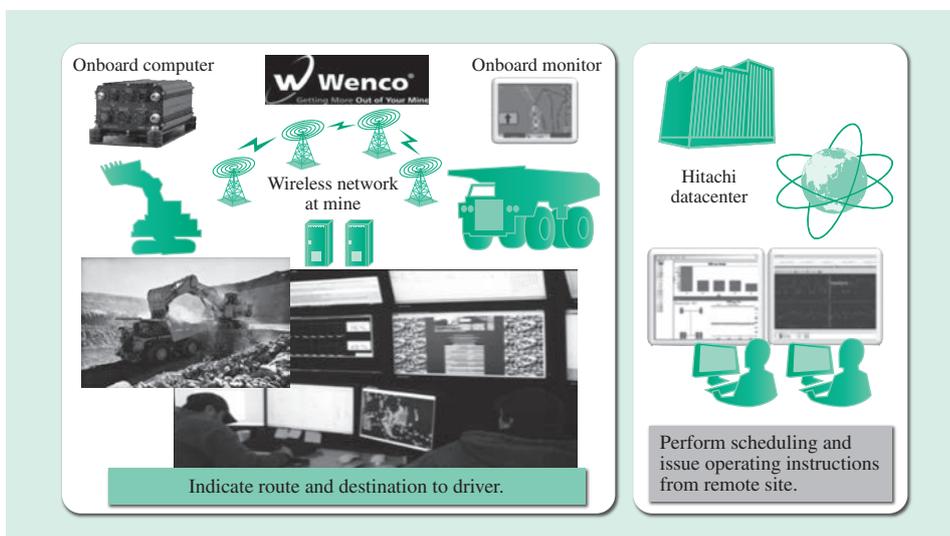


Fig. 4—Strengthening Solutions with Other Hitachi Companies. Wenco uses advanced cloud technology from Hitachi, Ltd. to boost the efficiency of mine operations, and is working on commercializing a cloud-based mine management system.

STRATEGIES FOR DEVELOPING PRODUCTS THAT MATCH CUSTOMER NEEDS

In accordance with rising demands for energy efficiency performance and safety, as well as the basic strengths of reliability and durability, product development at Hitachi Construction Machinery Group fuses its strengths in the core technologies of construction machinery with the electronics, electric drive, and ICT capabilities of the wider Hitachi Group. The current era is one in which the strengths that come from being part of this wider corporate group will prove to be major advantages. Specific examples are to be found in the articles in this issue entitled, “ZAXIS-6*³ Series Hydraulic Excavators Equipped with Latest Environmental Technology,” “EH-3 Series Dump Trucks Enhanced by Comprehensive Capabilities of Hitachi,” and “Hybrid Wheel Loaders Incorporating Power Electronics.”

Hitachi Construction Machinery is also drawing on the strength in the development of application-specific products that it has built up in Japan. By dealing with front-running customers over many years, Hitachi Construction Machinery has developed application-specific products that dramatically improve work efficiency in fields such as building demolition, vehicle dismantling, forestry, and port cargo handling. With the aim of helping to overcome the management challenges of how to reduce operating costs and improve safety, Hitachi Construction Machinery is seeking to improve its technical development capabilities by making ongoing improvements to things like ease of operation, vibration, and the fuel efficiency of work (see Fig. 5).

STRATEGIES FOR UTILIZING LIFECYCLE SUPPORT TO INCREASE CUSTOMER SATISFACTION

The sales company, Hitachi Construction Machinery Japan Co., Ltd., has a network of facilities located throughout Japan that serves as the foundation of its business. In Japan, Hitachi Construction Machinery has boosted customer satisfaction and increased sales and profits by operating its Rental (R) - Sales (S) - Service (S) business that utilizes this network. Unlike Japan, however, the requirement in overseas markets is to cover a wide range of different businesses, and this makes it impractical to operate a large number

*3 ZAXIS is a trademark of Hitachi Construction Machinery Co., Ltd.

of facilities. This means that ICT is a key factor in business competitiveness.

Drawing on know-how in after-sales services in Japan, Hitachi Construction Machinery has been involved since 2004 in its Global e-Service, which consolidates about 40 different service programs and is used in 20 different languages in 185 countries or regions. The ConSite operational information service for new machinery was developed from this Global e-Service. The service launched throughout the world in April 2014 and is already supplying services to more than 10,000 machines.

Hitachi Construction Machinery is using ConSite not only to supply customers with information on machine operation, but also to expand its spare parts business (thereby increasing profit) by providing appropriate follow-up on maintenance and other services.

The major benefit of ConSite is the value it provides to customers by preventing machines from being out of service. If a machine detects an urgent problem with the potential to take it out of service, it sends an emergency report to the operator or owner so that they can take action before a failure occurs. Similarly, if a machine does go out of service, it can be repaired quickly. Use of ConSite information can also



Fig. 5—Application-specific Products Used at Various Different Sites.

Drawing on its capabilities for the development of application-specific products built up over many years, Hitachi Construction Machinery is helping reduce operating costs and improve safety for a large number of customers at a diverse variety of workplaces.

help dealers with wide geographical coverage increase meaningful contacts with customers.

Furthermore, using ConSite to identify warning signs of machine faults or other problems and performing maintenance accordingly can extend machine life and increase resale value. This leads to lower lifecycle costs for customers.

CSV INITIATIVES

If companies are to grow sustainably, it is essential that they pursue their growth strategy and manage their corporate social responsibility (CSR) in a unified manner. Since establishing a CSR Promotion Department in 2005, CSR at Hitachi Construction Machinery has passed through the “initial” and “growing” phases and is now entering a “deepening” phase.

The primary prerequisite for sustainable growth is the global deployment of products and services that satisfy customer needs, generating sales and profits by achieving customer satisfaction. Hitachi Construction Machinery undertakes its corporate activities with a mission of growing in tandem with its numerous stakeholders, including paying out its revenue as taxation, shareholder dividends, and employee remuneration, and investing in things like the research and development of advanced products or the expansion of sales and service facilities.

This involves treating the resolution of societal issues as an opportunity for business. This does not just mean seeking to address global-scale societal challenges by achieving energy efficiency and zero



Fig. 6—Dual-arm Excavator Incorporating Robotics Technology. The two excavator arms improve work efficiency and enhance safety through the mechanization of manual labor. The excavators are also utilized for CSR activities through their use in disaster recovery work.

emissions at its production facilities, for example, it also includes taking an active role in the development of low-carbon machinery such as hybrid or other battery-powered machinery that minimizes carbon dioxide (CO₂) emissions. Hitachi Construction Machinery also supports the way its machines are used by customers to build towns and earthworks that are compatible with the environment. These are called “CSV^(f) activities” that aim for benefits that are shared with customers and other stakeholders.

(f) CSV

An abbreviation of “creating shared value,” the concept of CSV was proposed by Professor Michael E. Porter of Harvard Business School as an alternative to CSR. It is the idea that companies can contribute to creating a sustainable society by simultaneously pursuing economic value (profit) and solving societal challenges with reference to the principles of CSR.

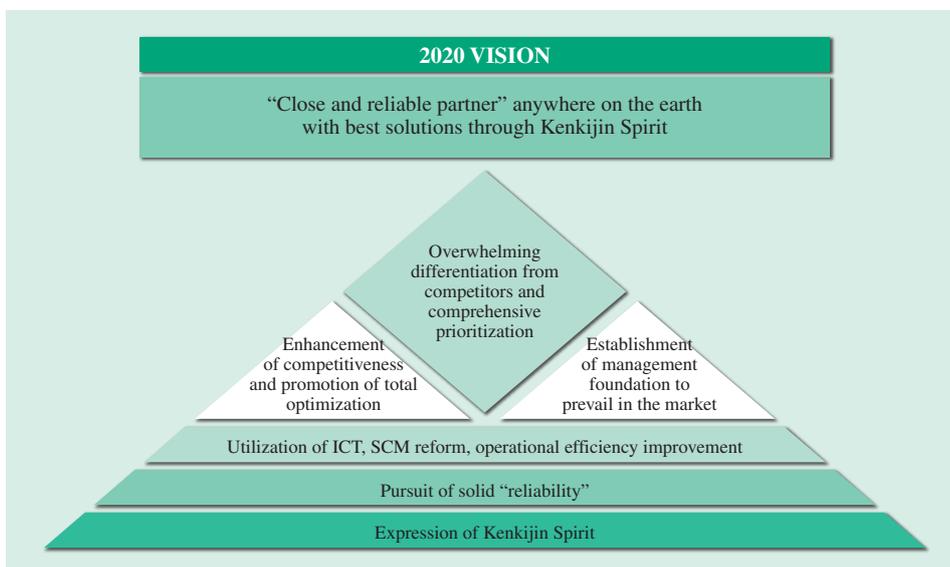


Fig. 7—Core Strategies of Hitachi Construction Machinery. Hitachi Construction Machinery is seeking to be a close and reliable partner to customers around the world through the pursuit of “reliability and differentiation.”

While the first generation of hybrid machines delivered a 20% reduction in fuel consumption compared to previous models, savings on the current second-generation models are 30%, with a halving of fuel consumption being the objective for the future. Hitachi Construction Machinery has successfully trialed operation on 100% algae biofuel to help reduce CO₂ emissions and intends to utilize the knowledge obtained from research into increasingly diverse fuels in even more impressive product developments in the future. Being actively involved in environmental measures includes being one of the first companies in the construction machinery industry to apply carbon offset mechanisms to forestry machinery.

The dual-arm excavators used at disaster sites are contributing to CSR activities as well as research

into robotics by improving safety through the mechanization of manual labor, improving efficiency through use of the versatile second excavator arm, and saving space by enabling one machine to do the work of two (see Fig. 6).

BECOMING A CLOSE AND RELIABLE PARTNER

As it steadfastly implements its GROW TOGETHER 2016 Mid-term Management Plan, the second step toward realizing its 2020 VISION, the Hitachi Construction Machinery Group is pursuing “reliability and differentiation” (see Fig. 7). In doing so, it is seeking to be a close and reliable partner to customers around the world.

ABOUT THE AUTHORS



Hidekazu Nakakuro

Corporate Planning Office, Corporate Management Division, Hitachi Construction Machinery Co., Ltd. (as of March 2015). He is currently engaged in formulating the Mid-term Management Plan.



Manabu Arami

Corporate Planning Office, Corporate Strategy Division, Corporate Management Group, Hitachi Construction Machinery Co., Ltd. He is currently engaged in formulating the Mid-term Management Plan.