

Hitachi Group IT Performance Report 2020



Message from CIO

By creating value in the three areas of the environment, resilience, and safety and security by leveraging the strengths of its IT, OT, and products, as well as advanced digital technologies, Hitachi is engaged in efforts to achieve a sustainable society and improve quality of life, while accelerating its expansion of social innovation businesses globally.

The IT departments are also acting based on the 2021 IT medium-term management plan to advance various policies, with the recognition that they must contribute to the reorganization of business globally, a recent operational challenge, as well as to the strengthening of business competitiveness through DX¹.

In order to speed up the business reorganization process globally above all, we have been advancing the integration and standardization of IT operations, with an aim to prepare a shared ERP² platform and establish a globally shared structure. In addition, we have formulated the IT-PMI³ guidelines, which are intended to speed up and reduce risks for IT integration and partitioning, which will accompany any business reorganization or M&As.

With respect to DX, we have established an internal environment for Lumada⁴, which enables the advanced use of digital technologies, as well as data usage platforms for sharing and visualizing data, and are moving forward with the preparation of environments that will realize strategic analyses and decision-making, as well as the accumulation and sharing of knowledge. In addition, we are also working on the automation of operations using RPA⁵ and process mining.

Furthermore, in response to the rapid changes brought on by the various social issues and risks that we face, such as frequently occurring natural disasters and the COVID-19 pandemic, we are making use of autonomous distributed IT architectures that can handle these changes, reviewing our support for remote work and IT device operations, strengthening IT controls, and more.

I believe that by engaging in collaborative creation with customers through these initiatives, we can improve the value of our customers' businesses. It is my hope that you find the information within this report useful.

Vice President and Executive Officer,
CIO, and General Manager of IT Strategy & Digital Integration Division



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Basic IT Policies

We have formulated the 2021 Hitachi Group IT medium-term management plan for the Hitachi Group based on the 2021 medium-term management plan. Through the 2021 Hitachi Group IT medium-term management plan, IT and digital technologies are used to improve growth capabilities and strengthen earnings.

2021 IT medium-term plan (basic strategies to become what we need to be)

Hitachi announced in its 2021 medium-term management plan that it is aiming to become a global leader in social innovation businesses. In order to support these efforts, the IT departments have indicated in their own 2021 Hitachi Group IT medium-term management plan the following policies: leveraging IT and digital technologies to contribute to improving growth capabilities and strengthening earnings, and to become an organization that advances digital transformation for management and business in cooperation with related departments.

The mission of the IT departments is to understand the needs and problems related to management, businesses, and operations, and to become a partner that helps lead towards the solution of problems and creation of value by making use of technologies and data. To this end, we are maximizing the value of IT being used and promoted within the Hitachi Group as well as DX, and promoting initiatives that offer shared platforms for achieving overall optimizations. In the future, we plan to leverage data and digital technologies to the greatest extent possible, and build a core environment for contributing to improving growth capabilities and strengthening earnings that is significant globally.

For strengthening earnings in particular, we are making advances in cost reductions through the thorough consolidation and sharing of IT functionality that is common to operations, as well as through the wide distribution of globally shared services. Moreover, we are establishing IT architectures and various IT rules and guidelines to support diversification and changes in business environments, and are engaged in providing timely support for business reorganization on a global scale and in strengthening IT controls to address external risks, such as novel virus strains.

*1 DX: Digital Transformation

*2 ERP: Enterprise Resource Planning

*3 IT PMI: IT Post Merger Integration

*4 Lumada: Hitachi's advanced digital solutions, services, and technologies for turning data into insights to drive digital innovation

*5 RPA: Robotic Process Automation

Execution of Hitachi growth strategies

In order to improve quality of life for people and to improve the value of our customers' businesses, Hitachi is focused on the three areas of the environment, resilience, and safety and security, and is advancing growth strategies that use digital technologies in each of these areas. The IT departments are supporting growth strategies by making use of IT and digital technologies, establishing shared platforms, expanding human resources, and more, and are contributing to the execution of these strategies.

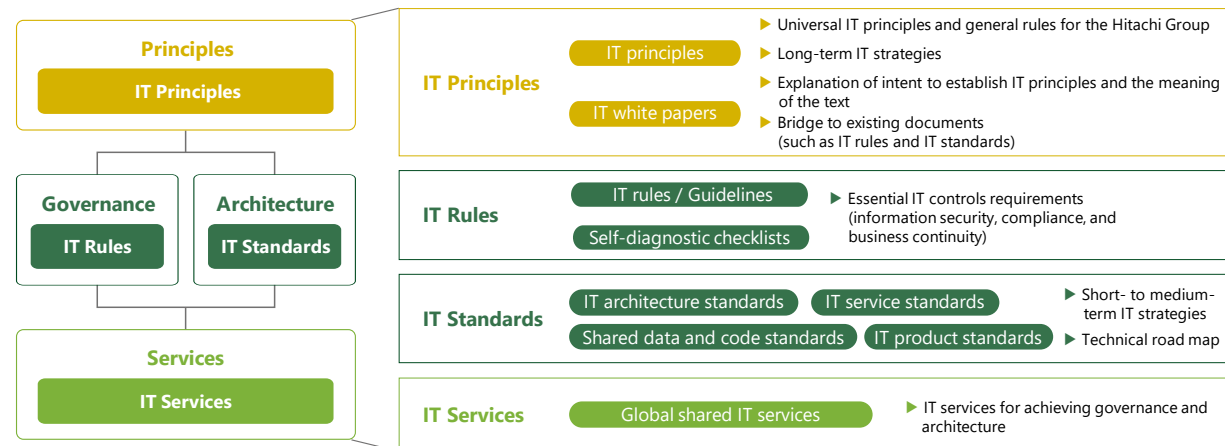
To accomplish these goals, the departments are advocating the use of digital solutions and technologies related to AI and RPA, which are linked to operational reforms, optimizations, and improved security. They are also engaged in efforts to reduce the environmental burden via means that include shifting to cloud-based services and reviewing IT devices and how they are managed. Furthermore, the departments are planning ways to reflect on our ways of thinking and conduct training on mindsets related to the environment and diversity among employees.

Establishment of IT principles

In order to effectively integrate IT platforms following the business reorganization of the Hitachi Group and any M&As, the IT departments have defined the Hitachi Group IT Principles, which indicate the IT-related ideals of the Hitachi Group. Within these principles, we indicate the roles that the IT department must fulfill with respect to each of the following: IT contributions to management and business, support for decision-making, suitability of information disclosures, adherence to environmental changes (compliance), ensuring business continuity, and ensuring IT security.

Together with this, we have created IT white papers that systematically detail the concepts related to IT strategy, IT architecture, and IT governance that are required to achieve these goals, as well as the distribution of roles of the IT departments at corporate HQ, business units, and Group companies. We are also progressing with the formulation of the IT architecture standards, which contain technical requirements to be referenced when implementing the IT rules and IT governance requirements within systems, and by encouraging the use of IT services that comply with the standards, we are advancing IT optimizations and IT controls for the entire Hitachi Group.

IT governance and IT architectures for realizing IT strategies



Main Strategy:

Improving growth capabilities through the use of IT and digital technologies

We are continuously advancing the preparation of environments for accumulating and analyzing data, in order to expand the usage of data and produce business-related benefits.

By creating templates based on case studies and knowledge and widely distributing this information both inside and outside the company, we will contribute to the strengthening of managerial effectiveness and business competitiveness.

No. of DX cases (cumulative): **257** cases

Results from the end of FY 2020 regarding DX cases that use Lumada's internal environment

Expansion of business benefits from the creation and wide distribution of DX cases that use Lumada

The efficiency of data analysis is indispensable when creating benefits through the expansion of data usage and the reflection of the associated results onto operations. We are creating templates based on the knowledge accumulated from the results of projects within the Hitachi Group, and are preparing Lumada's internal environment as a platform for widely distributing and re-using this information. The creation of benefits is not limited to within the Hitachi Group; we are also providing templates to customers and partners outside the Hitachi Group, and by doing so, we are aiming to contribute to the business departments as well.

Lumada's internal environment is used in a wide variety of operational areas, such as sales, procurement, production, maintenance, and management. A cumulative total of 257 cases in which this environment was used were recorded for FY 2020, which is more than double when compared to the cumulative total of 124 cases that was recorded for FY 2018.

Here we will introduce some of the representative templates: KPI dashboards, digital internal controls, and quality analytics.

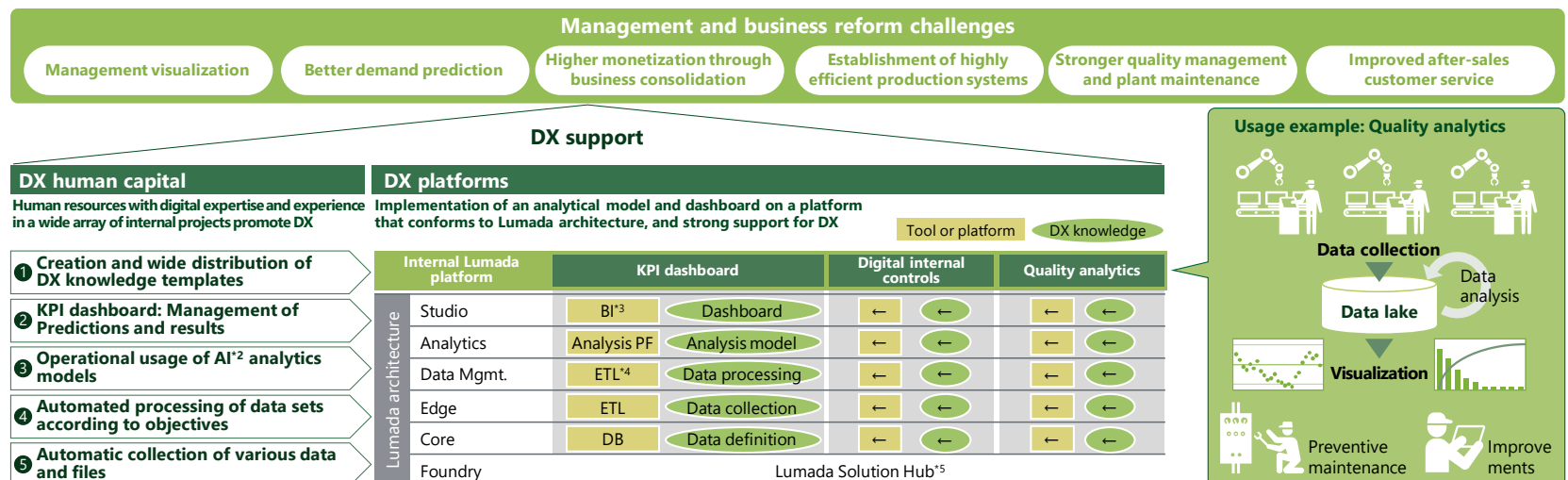
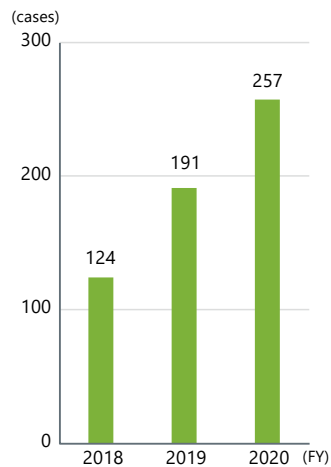
- **KPI dashboards:** This is a dashboard visualization that follows the KPI tree prepared for each business department, and is accomplished through the collection and accumulation of data from ERP and various operational systems. In addition, this template promotes higher levels of KPI management, such as through analyses into the primary factors behind result values, predictions of future values, and simulations to be used when considering what actions to take.
- **Digital internal controls:** Through the collection and analysis of operational data, such as data from sales, procurement, and finance, this template prepares a mechanism by which unauthorized risks can be detected early. Notifications of risks sent to the relevant personnel and early follow-ups strengthen risk management.

- **Quality analytics:** The alteration of inspection data can be controlled by automating both the acquisition of data from inspection devices and the creation of inspection results documents. We are also working on using data that has been collected and accumulated in order to provide warning signs of failures for preventive maintenance, to estimate which locations have failed in order to shorten maintenance lead times, to analyze the primary factors behind defects in order to improve yield rates, and to analyze product demand trends in order to adjust inventory, among other initiatives.

Regarding data analysis, introducing Auto ML^{*1} (automated analysis) greatly increases the efficiency of analysis work and accelerates DX, which allows us to shift data-scientist human resources over to work that has higher added value. Through these actions we are promoting stronger DX.

*1 Auto ML: Automated Machine Learning

No. of DX cases (cumulative)



*2 AI: Artificial Intelligence *3 BI: Business Intelligence *4 ETL: Extract/Transform/Load *5 A hub where Lumada solutions that consolidate technologies and knowledge as well as application-development environments that are easy to introduce can be packaged and registered in a catalog. These packages are then offered through a cloud-based platform.

Main Strategy:

Improving growth capabilities through the use of IT and digital technologies

We are establishing shared platforms for data utilization, aiming for stronger data usage across a wide cross section of the Group, as well as for faster and more advanced decision-making.

In addition, we are promoting stronger PMI through IT to be able to respond rapidly to business reorganizations globally.

Data collection:
Sales coverage rate **70** %
Consolidated Group sales coverage rate: Results for FY2020

Use of global management information and more advanced management decisions

In order to make management decisions within the consolidated Hitachi Group more quickly and flexibly at the required timing, we are collecting information such as details about sales profit and loss and overhead from various Group companies, and continuously working on the establishment of a shared platform for digital data usage that enables efficient analyses and understanding, from summaries down to the details. In terms of data collection from Group companies, the consolidated Group sales coverage rate^{*1}, was 70% for FY 2020. We are aiming for a consolidated Group sales coverage rate of 100% for FY 2022.

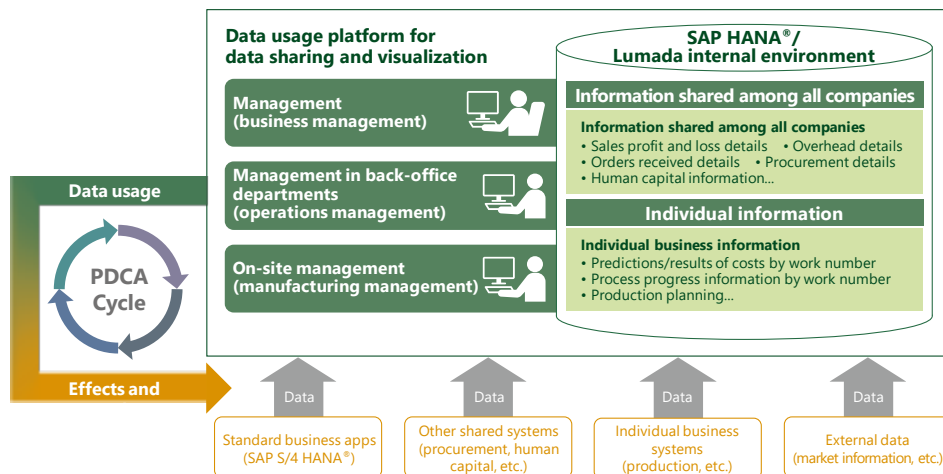
Looking to the future, we are working on building a model that uses AI to predict results. This model will make predictions and analyze primary factors on the possibility of results worsening or improving based on the effects of changes in the environment, and will support advance on-site decision-making. In addition, by comprehensively monitoring the collected data, we are also working towards the digitization of monitoring that connects the detection and suppression of unauthorized risks.

Moreover, we are expanding on our available linkage of systems and data types, such as those for procurement, human capital, and production. At the same time, we are also making use of services provided by Lumada for time-series predictions, regression analyses, and other use cases, and are engaged in efforts to support the visualization and analysis of information that contributes to people analytics^{*2}, which supports the visualization and analysis of human capital and organization information, as well as ESG^{*3} management, which takes into account the environment, society, and governance.

Data governance is important for data accumulation and usage platforms, for which accuracy, comprehensiveness, and integrity are required. In order to further promote the usage of management information globally, we are defining common rules throughout the Hitachi Group related to the usage of finance data, while at the same time establishing monitoring systems for data quality and working to maintain and improve quality.

^{*1} Consolidated Group sales coverage rate: Ratio of the total sales revenue of Group companies subject to data collection to the total sales revenue of the Hitachi Group
^{*2} People analytics: Technologies that allow us to collect and analyze HR data and activity data on employees and to acquire knowledge on how to leverage human capital.
^{*3} ESG: Environment/Social/Governance

Establishment of a data usage platform, and more advanced data usage



Promotion of IT-PMI globally

In its 2021 medium-term management plan, Hitachi declared it would actively invest in important fields of focus, and has executed various policies to this end. One of the activities brought forth is the promotion of large-scale M&A projects globally. The role of IT in M&As recently is not only to complete the IT-PMI over a short time to maximize benefits. IT is also being tasked with participating in upstream processes, such as due diligence, and promoting IT-PMI that does not harm business plans.

To allow the IT departments to achieve IT integration and partitioning over short work periods and to reduce costs, we are defining IT-PMI guidelines that systematize the work to be performed in a standard manner. By examining specific case studies from the Hitachi Group, we are identifying challenges and actions to take regarding the overall PMI process and promotion of PMI, and covering the scope of PMI through due diligence. In addition to promoting the deployment of the guidelines to IT departments, we have also been deploying them to the management strategy and planning departments that lead M&As, and accelerating IT-PMI while avoiding risks.

The IT-PMI guidelines are continually being reviewed with an aim to maintain and improve applicability judgments and quality. For FY 2020, the following two points in particular were prepared in order to suppress unexpected rising IT costs. First of all, we have specified worksheets and other tools for detecting potential risks within IT assets whose control has been transferred, as well as processes to exclude risks, to deploy during the due diligence stage. In addition, we have established and distributed worksheets based on efficiently and accurately identifying, as much as possible, the work and scope for IT integration based on the current state of an acquired company's IT environment, and for allowing for an inspection of the state of an acquired company's IT environment even while the deal in question is being closed.

From FY 2020, we have participated in actual projects by using the IT-PMI guidelines, and are steadily advancing IT-PMI. Furthermore, we are working on improving the quality of the IT-PMI guidelines based on the experience that we have gained from such projects.

Main Strategy:

Strengthening earnings through the use of IT and digital technologies

Aiming to optimize our IT resources to rival global top companies, we are moving forward with the expansion of strategic IT investments for growth. In addition, we are working on the preparation of shared ERP platforms and the integration and distribution of shared services, with the goal of building an IT operations platform on a global scale.

Benefits of building a shared ERP platform

70.0 Billion yen

Cumulative benefits for FY 2025

Overall optimization of IT resources

Regarding IT departments, in order to expand business contributions in line with Hitachi's management and IT strategies, our goal is to optimize the IT resources (human resources, assets, and investments) of all of the IT departments of the Hitachi Group.

First, in terms of IT human resources (HR), an HR training program that shifts resources towards areas of differentiation and growth is essential. In order to achieve this, we are defining a standard typology for the IT HR of the Hitachi Group, regularly ascertaining the status of the IT human resources map, and planning and promoting common training measures. We are currently focusing on expanding our pool of data scientists, who are indispensable for data-driven management. We are encouraging the acquisition of basic skills through workshops and e-learning sessions, the use of self-diagnostics through skill-checking tools, and the acquisition of internal certifications.

Regarding IT assets, until now, the various companies of the Hitachi Group managed their IT assets individually, but from the standpoint of the overall optimization of the Hitachi Group, corporate HQ needs to understand the status of IT assets for each company. Our current aim is to visualize the applications held by the various companies across the Group, as well as to share related information and perform analyses. Our goal is to optimize all IT assets, for example, by effecting cost reductions through comparative analyses of operational costs and by encouraging the disposal of assets with low utilization rates.

As for IT investments, we are encouraging consolidation onto the Hitachi Group's IT platforms that use public cloud services. By reducing regular IT expenditures and continuing our activities aimed at allocating resources to growth-oriented IT assets, we expanded the IT investment rate from 35% to 40%. To ensure that we are able to make even greater contributions to business, we are strengthening our evaluation and monitoring of the effects of our investments, as well as working to optimize all IT assets throughout the Hitachi Group and to maximize the cost-effectiveness of investments.

Establishment of a DX and global, shared ERP platform

The current versions of ERP systems that were introduced and individually operated by Hitachi Group companies will reach the end of their support periods in 2027. The Hitachi Group is taking this opportunity to consolidate and share applications. By operating applications more efficiently, we will be able to respond rapidly to the shift of HR and asset resources to competitive business areas, business restructuring, and other factors.

Regarding consolidation and sharing, we are distributing Hitachi's standardized ERP templates to each company. These standard templates were defined based on the global operations of Hitachi ABB Power Grids, which was consolidated in 2020. We currently plan to begin operations at early adopting companies in 2022, aiming to integrate and consolidate operations to the minimum number of instances for each industry type by 2027.

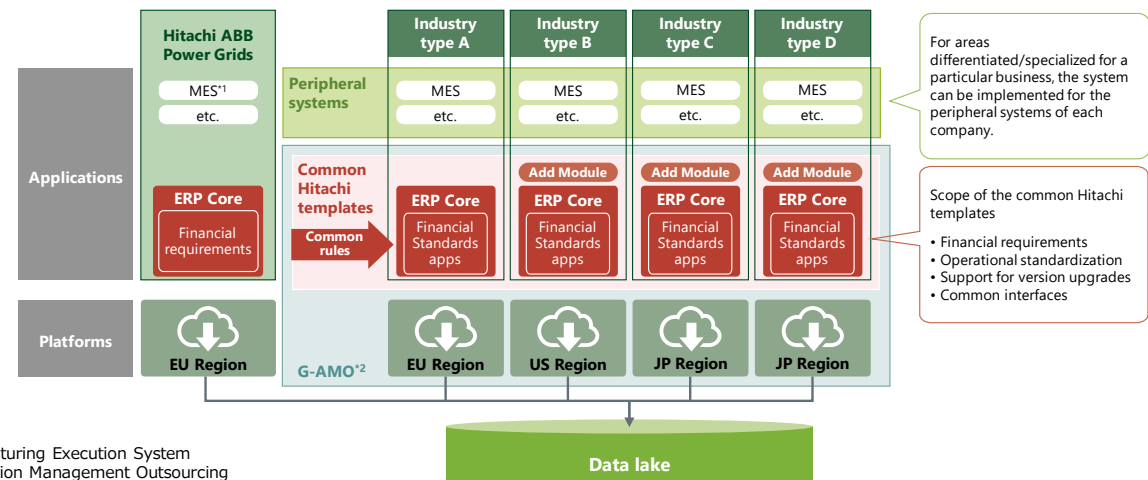
Promotion of IT-GBS and consolidation of commodity IT

Regarding IT departments, in order to improve the rate of strategic IT investments through cost reductions, we have been moving forward with the construction of the IT-GBS^{*3}, a global operations platform. More specifically, we are coordinating with the IT departments outside Japan in our efforts to thoroughly make use of shared services globally and to consolidate the commodity IT services of Group companies, aiming to integrate services and operations to achieve the IT-GBS. In the future, we plan to use the core business systems and infrastructure service platform of Hitachi ABB Power Grids as a global shared platform to achieve IT operations that support global business activities.

*3 GBS: global business service

Hitachi Group S/4 HANA® instance configuration diagram

- Integration and consolidation of ERP instances within the Hitachi Group for each industry type
- Wide distribution of common Hitachi templates (which are based on the global operations of Hitachi ABB Power Grids) following the standardization of operations



*1 MES: Manufacturing Execution System

*2 AMO: Application Management Outsourcing

Main Strategy:

Strengthening earnings through the use of IT and digital technologies

We are moving forward with efforts to establish and widely distribute digital tools and solutions for business reforms and business automation.

We continue to strengthen activities oriented towards improved business efficiency, such as the sharing of case studies and knowledge and the expansion of templates.

No. of work hours reduced through the introduction of RPA

380,000 hours

Results for FY 2020

Promotion of business automation through RPA and expanded business benefits through process mining

To promote the automation of operations through RPA, the Hitachi Group is preparing shared platforms that allow us to see the effects of consolidated management, as well as guidelines for stronger governance. In addition, the people responsible for promoting RPA within the Group also hold RPA user meetings.

The RPA user meetings are held based on themes such as introducing knowledge aimed at achieving stable operation and introducing user RPA initiatives. A total of seven such meetings have been held so far, and about 1,200 people have participated, contributing to the steady expansion of business automation initiatives within the Hitachi Group.

As a result, RPA has been introduced to a cumulative total of 94 departments as of the end of FY 2020, and through

automation, we have reduced work hours by about 380,000 hours as of FY 2020. We are aiming for even greater reductions in work hours in the future.

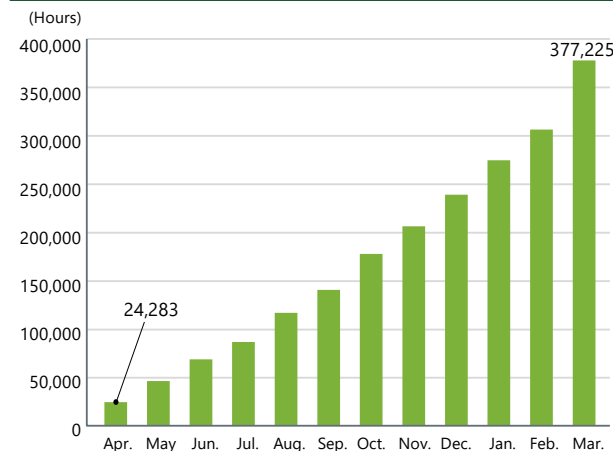
Moreover, the Hitachi Group has also started to use new solutions with the aim of reaping even more business benefits.

The first of these solutions is process mining, which is used to visualize and analyze processes based on the logs of business systems in order to identify business issues that have a greater impact on business benefits. Process mining allows us to objectively identify current business issues more quickly, and can be a helpful tool in effecting various business improvements other than business automation, such as in system migration.

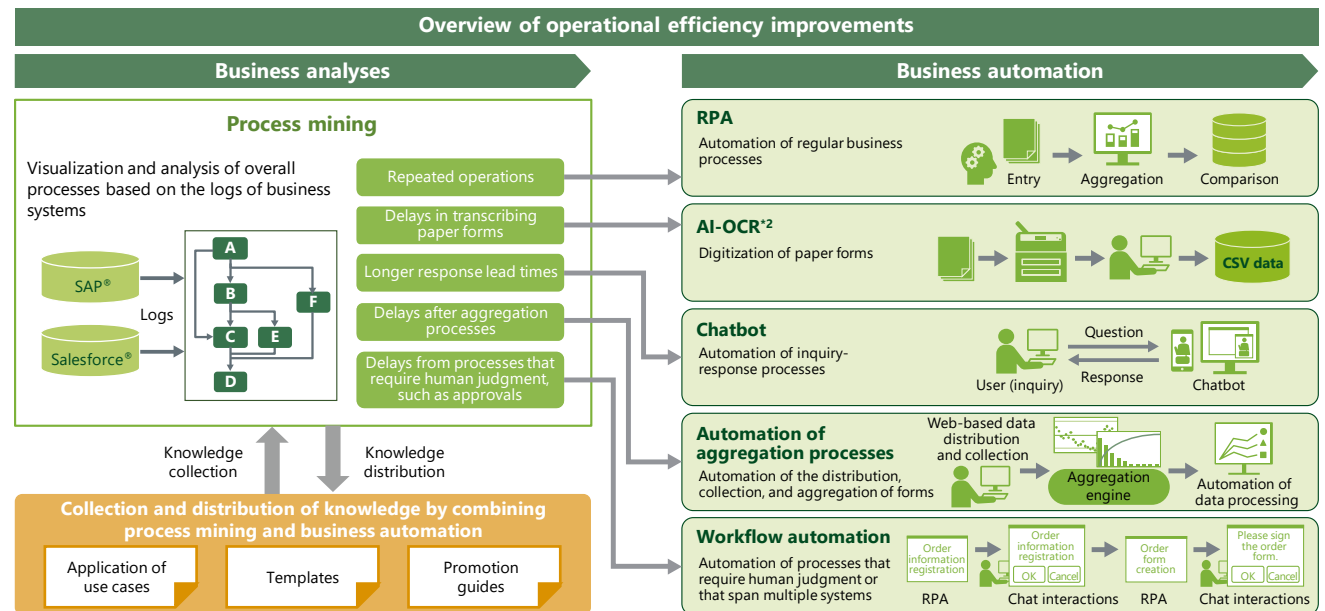
Regarding the second, in order to expand into a new area of automation, we expanded our lineup of business automation solutions by adding solutions for automating aggregation processes (the distribution, collection, and aggregation of forms) and those for automating workflows (processes that require human decision-making or that span multiple systems). Through these solutions, we will be able to apply business automation to a wide variety of business issues in the future.

Going forward, we will continue to firmly establish an improvement cycle that uses process mining, as well as strengthen efforts to improve business efficiency, for example, through the sharing of case studies and the expansion of templates for business analyses and business automation.

No. of work hours reduced through the introduction of RPA*1 (FY 2020 cumulative total)



*1 Calculated based on log data obtained from servers managed through the common RPA platform



*2 AI-OCR: Optical Character Recognition functionality that incorporates the use of AI

Providing an IT Environment to Support an Increasing Focus on Remote Work

The number of people working from home throughout the Hitachi Group increased dramatically due to the spread of COVID-19 infections, and a number of problems occurred in relation to communication from a work-from-home environment. IT departments resolve problems within a limited amount of time and keep systems running stably while about 130,000 people in Japan work remotely using concurrent connections.

No. of concurrent remote access connections **130,000** connections
As of the end of April 2020

Hitachi's IT response to COVID-19 and preparation of remote work environments

The Hitachi Group recommended remote work from an early stage, and poured effort into preparing the necessary environments. In February 2020, when COVID-19 infections began spreading more widely overseas, we planned for an increase in remote work environments and prepared for larger numbers of people working from home. Even so, due to the Tokyo stay-at-home order in March and the declaration of a state of emergency in April, many employees of the Hitachi Group and its subsidiaries in Japan were required to begin working from home. As a result, remote access was concentrated at four times the typically expected rate, and we neared the limits of our capacity to support remote work environments. As our capacity became strained, we experienced communication packet loss and latency, and greater risks of drops in the quality of the online meeting services that support work-from-home communication, such as the sound cutting out or being delayed.

In order to address these problems, we implemented emergency measures, such as scaling out by using cloud-based VPNs that could be procured relatively quickly compared to on-premises solutions, as well as by permitting the use of smart devices that have strong internet-related security measures to connect directly to online meeting services (cloud services).

These measures resolved the problems, and we were able to achieve stable operation from the latter part of April 2020. We did not encounter any significant issues upon the second declaration of a state of emergency in January 2021, and were able to provide stable remote work environments.

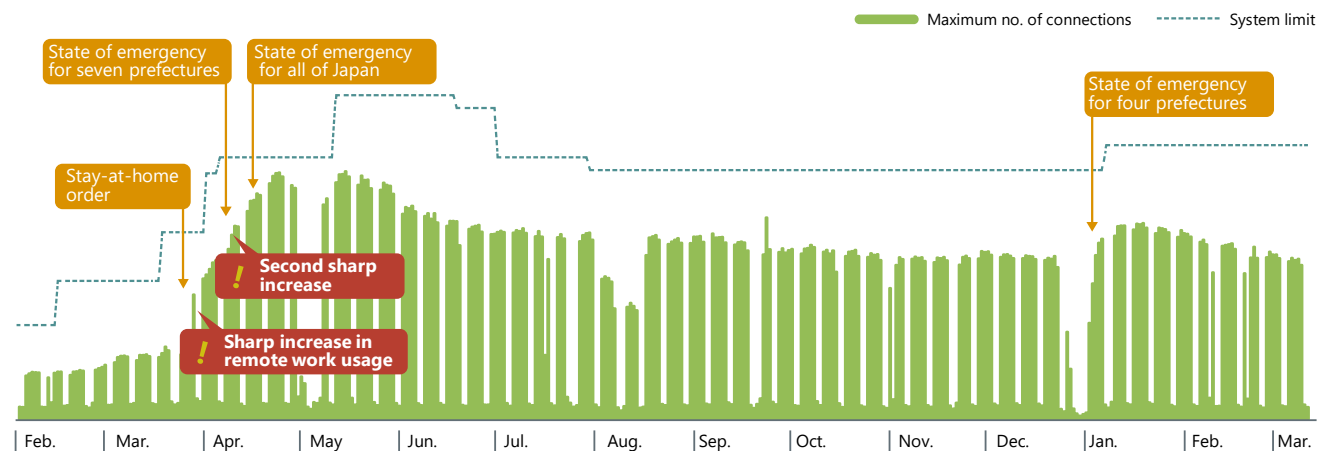
We are also engaged in measures aimed at normalizing remote work and new working styles. Hitachi offers thin clients as PC devices for remote work, which are being used by many remote workers. However, even though no data can be stored on the thin clients themselves and other strong security measures are in place for these devices, we were unable to provide smooth online meeting services because thin client server resources are shared across multiple devices.

We then developed a security service involving volatile PC data*1 by using a rich client format that can use the client device's resources but that also has strong security, whereby no data is retained on the device after shutdown. We have been distributing this solution for remote workers.

In addition, we are moving forward with preparations for remote work environments that ensure that working from home is no less productive than coming into the office. Such preparations entail shipping PCs, displays, and smart devices to employees' homes; expanding the types of online meeting services that are available; and communicating information about IT services for remote work.

*1 Security service involving volatile PC data: a service provided by the Systems & Services Business Division of Hitachi, Ltd.

Trends in the limit on remote access and the maximum number of connections during the spread of COVID-19 infections in 2020 and 2021



Providing an IT Environment to Support an Increasing Focus on Remote Work

We are expanding various services and transforming IT platforms to accommodate the normalization of remote work and working styles in the era of the “new normal”.

In addition, we are establishing mechanisms to support business continuity through IT in response to emergencies resulting from large-scale disasters, pandemics, and cyberattacks.

Next-generation IT architecture based on zero-trust security

Regarding the Hitachi Group’s IT platforms, to encourage flexible use of public cloud services and collaborative creation with external business partners, we have been moving ahead with migration to an internet-centered architecture, an effort that began even before the spread of COVID-19 infections. This effort took on increased importance following the rapid increase in remote work at the company due to the spread of COVID-19 infections and the subsequent declaration of a state of emergency.

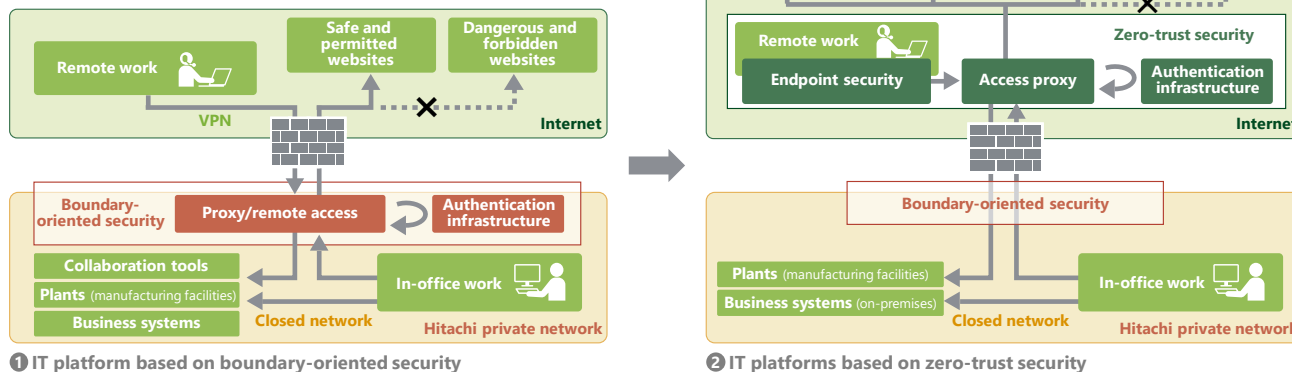
The concept of “zero-trust security” is an important aspect of internet-centered architecture. In the past, when Hitachi Group employees were generally expected to work in an office, the fundamental approach was to have client devices, business systems, networks, and other components reside within the company, and to implement boundary-oriented security,

whereby strict security measures such as firewalls were applied at the boundary separating the company from the outside.

However, now that remote work and the use of cloud services have become the normal way we work, there are limits to how well the boundary-oriented approach can guarantee sufficient security. As such, we are migrating to an IT platform where the fundamental element is having “zero-trust security” implemented for individual devices and business systems. As one part of this approach, we are moving ahead with the introduction of measures including strong authentication infrastructure based on knowledge, devices, biometrics, and risks; access proxies that enable secure connections to both cloud-based and on-premises information assets; and endpoint security that prepares against zero-day exploits and detects suspicious activity.

Hitachi IT platforms based on zero-trust security

- For conventional IT platforms, which assume in-office work and the use of internal company systems, the issue is that employees must have access to these internal resources when working remotely.
- In order to support remote working styles and the use of cloud services, we are migrating towards a “zero-trust security” concept based around the use of the internet.



1 IT platform based on boundary-oriented security

2 IT platforms based on zero-trust security

*1 IaaS: Infrastructure as a Service *2 SaaS: Software as a Service

IT-BCP

For emergencies such as large-scale earthquakes, other disasters, pandemics, and cyberattacks, we are formulating and operating BCPs^{*3} that enable us to support business continuity for the Hitachi Group through IT.

With respect to disasters, in addition to installing and operating servers at robust data centers (considered a basic measure), we are defining disaster-response levels according to the recovery time objectives and recovery point objectives of each service. In combination with this, we are implementing measures such as secondary servers and data-backup environments and working on data security. In cases where cloud services are used, we are also defining and operating disaster-response levels in the same way. We conduct regular drills according to these BCP measures to prepare for emergencies.

As for cyberattacks, we identify the nature of anticipated attacks and establish the corresponding response procedures from initial response to recovery as we work to offer safe system operation and rapid recovery. Furthermore, in order to improve and normalize BCPs, we regularly review our response procedures, including drills for responding to anticipated cyberattacks and preparations against new threats.

*3 BCP: Business Continuity Plan

Thorough Compliance with IT Controls:

Controls such as internal IT risk measures

Throughout the entire Hitachi Group, including companies that have been integrated as a result of M&As, we are working to ensure information security, compliance, and business continuity for internal IT, and are encouraging the standardization and sharing of IT. We are establishing IT rules and standards for the criteria behind IT control requirements and IT standardization, and moving ahead with corrective measures through self-diagnostics and internal audits.

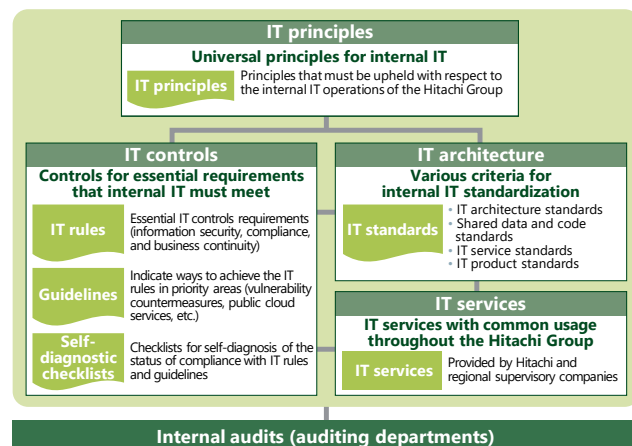
Self-diagnostic implementation rate **95%**
 From the percentage of self-diagnostic results submitted regarding IT controls for FY 2020

IT rules and standards

To support global business through internal IT, it is essential that we ensure that requirements in areas such as information security, compliance, and business continuity are met and that we reduce both IT risks and IT costs through the standardization and sharing of IT. Throughout the Hitachi Group, it is not only the case that we have different Group companies in different businesses and at different scales in various regions around the world, but we are also integrating new entities into the corporate group through M&As. In order to ensure the governance described above for these types of Group companies, it is important to define requirements that can be uniformly accepted.

In the Hitachi Group, universal principles that can be accepted by the IT departments of all Group companies, regardless of region, business, or scale, are defined as "IT principles" (see p. 2). In order to encourage Group companies to achieve these IT principles, we have defined common IT rules and standards for the Hitachi Group that cover the essential requirements for IT controls centered around IT risk measures and criteria for IT standardization.

Hitachi Group IT controls framework



Initiatives for stronger IT controls

In order to reduce internal IT risks, we require compliance with IT rules that define essential requirements for IT controls, centered around aspects such as information security, compliance, and business continuity for Group companies. In order to encourage compliance with IT rules, we have defined checklists for confirming the status of compliance with IT rules and guidelines, and have introduced a system whereby Group companies are required to regularly perform self-diagnostics of their internal IT systems and take corrective actions as needed. Furthermore, through internal audits conducted by auditing departments, deficiencies are detected and requests for corrective action are sent out to Group companies, leading to more thorough compliance with IT controls.

The self-diagnostic system is not limited to Group companies within Japan, but rather applies to Group companies outside of Japan as well. In order to ensure that this system is used widely among Group companies, after clearly explaining the system to the applicable companies in each business group in advance, we implemented controls whereby the self-diagnostics are performed at subsidiaries under the responsibility of the relevant business group. As a result of these efforts, the rate of companies performing self-diagnostics was 60% across the entire Hitachi Group in 2012, but this rate increased to 95% in FY 2020. As we continue to aim for 100%, we are enhancing our efforts through cooperation with the parent companies of the business groups.

In addition, Hitachi is providing Group companies with the services needed to comply with the IT rules and guidelines (such as authentication and antivirus measures). In light of the increase in cyberattacks in recent years and with respect to measures to address particularly high-risk software vulnerabilities, we have begun offering services to help Group companies carry out the measures as we clarify the response procedures and guidelines. For Group companies that struggle to implement sufficient measures on their own, we will offer these services in an effort to raise the standard of measures implemented.

On the other hand, while business integration is increasing as a result of M&As, we are strengthening our efforts towards reducing IT risks for integrated Group companies. Specifically, in the aforementioned self-diagnostic checklists, we have selected certain items (such as countermeasures against vulnerabilities) that integrated companies must conform with as a matter of high priority. We ask that the parent company of the business group making the acquisition implement control by ensuring that the integrated company carries out self-diagnostics for these high-priority items and implements measures to address any deficiencies by the deadline.

Support for the Environment and Diversity

In coordination with the initiatives of the entire Hitachi Group, the IT departments are actively engaged in solving issues related to the environment and diversity.

In addition, we are aiming to further change how employees think and develop their mindsets.

Support for the environment

In response to environmental issues that are growing more serious around the world, Hitachi has made the environment one of its primary management themes, and is engaged in activities with the goal of cutting CO₂ emissions in half (compared to 2010 levels) across the entire value chain by 2030, and cutting CO₂ emissions fully (becoming carbon neutral) at our business office. Furthermore, in 2021, Hitachi took up its position as a principal partner of COP26^{*1}, and is working under a comprehensive system for improving environmental value.

By making use of IT and DX to improve operations and management, IT departments are reducing the environmental burden (resource consumption) at each life cycle stage, and by leveraging IT to reform operations, we are contributing to society by supporting the initiatives of the Hitachi Group as a whole.

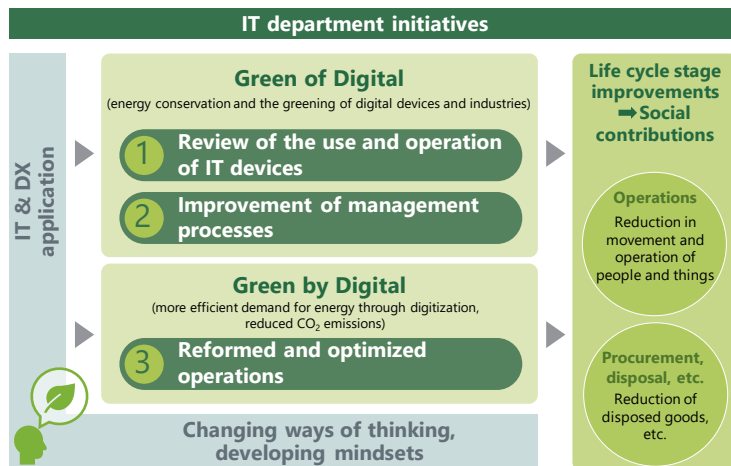
The IT departments are adopting three approaches in their efforts as they seek to further increase employee awareness and develop mindsets.

First, under "1. Review of the use and operation of IT devices", we are moving forward with reductions in servers through consolidation among Group companies and reducing the number of data centers to reduce electrical power consumption by about 27% in FY 2021 (compared to FY 2010 levels).

Next, under "2. Improvement of management processes", in accordance with environmental measures and guidelines pertaining to procurement across all companies, we are taking environmental aspects into account in the thorough implementation of planning, conception, and operation of common IT services for all companies.

Lastly, under "3. Reformed and optimized operations", we are using IT to support the activities of the paperless promotion project at all companies. Through measures such as introducing new operational workflows and digital signature services, in FY 2020, we contributed to reducing the annual paper consumption throughout the Hitachi Group in Japan by approximately 40% (approximately 260 million sheets) compared to FY 2018. We will continue to expand these efforts in the future.

*1: COP26: the 26th United Nations Climate Change Conference, held in November 2021



Note: The categories of "green digital" and "digital green" are from the "Green Growth Strategy through Achieving Carbon Neutrality in 2050" issued in December 2020 by the Ministry of Economy, Trade and Industry.

Support for diversity

In the Hitachi Group, we place great importance on the growth of sales and earnings, stock prices, and the expansion of geographic presence, as well as improving satisfaction among employees, customers, and stockholders. In particular, to improve value in both the financial and non-financial aspects of Hitachi and thus lead to sustainable growth, we believe that diversity and inclusion (hereinafter, "D&I") initiatives and activities are essential for us as a group.

From this perspective, our D&I initiatives are unified with the management strategy for the Hitachi Group, and the IT departments are actively moving ahead with the goal of achieving sustainable growth for both companies and employees.

Specifically, from a medium-to long-term perspective, we are making progress towards not only increasing the ratio of female managers, but also making managerial appointments that are balanced with respect to nationality, gender, and experience (that is, experience outside the Hitachi Group) to increase the diversification of decision-making levels.

In addition, regarding employees hired directly after their university graduation, we are making efforts to ensure a certain number of non-Japanese and to improve the ratio of women to men, as well as to increase the number of mid-career hires.

In order to develop an inclusive culture, we are working to achieve more active communication in the future while we aim to achieve a culture (mindset and cultural climate) that allows a diverse range of people to thrive, through a fair and independent career-oriented support structure.

Internal IT Management for the Hitachi Group

In the Hitachi Group, where a diverse range of businesses are being developed, the IT departments are working to achieve both advanced IT and shared Group IT that support businesses globally.

Organizational structure of the IT departments

Within the Hitachi Group, where a diverse range of businesses are being developed, we have IT departments for individual business segments in a structure that respects the independence of the various Group companies. This is because advanced IT is needed to maximize competitiveness in each business segment.

On the other hand, responding to IT cost adjustments, increasing security risks, and further global business expansion and reorganization requires a Group-wide IT governance structure and the realization of common measures that cover the entire Group overall.

Against this backdrop, in order to achieve the dual objectives of rapid decision-making for each business segment alongside the realization of common measures, the IT departments of the Hitachi Group are composed of a two-layer organization. Group Corporate HQ supervises the different business units within Hitachi and major Group companies overall, and the business units and Group companies supervise the IT departments of their subsidiaries.

In order to achieve common measures, Group Corporate HQ is providing shared services. In FY 2020, the IT-GBS center was newly established within the IT department at Group Corporate HQ, and is aiming to strengthen globally shared systems.

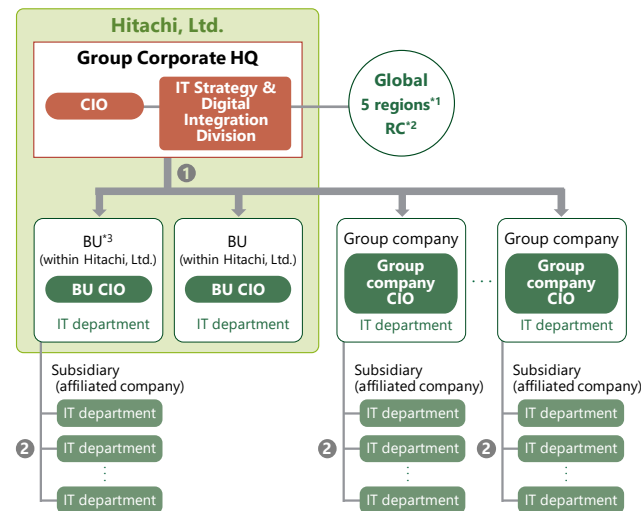
Global structure

The person in charge of supervising Europe and the Americas and the person in charge of supervising China and other parts of Asia are determined individually, and by establishing a chain of command, it has become possible to implement unified management of drafting plans and budgets for global IT plans. Moreover, the corporate IT departments and IT departments of local subsidiaries regularly deepen their sharing of information through confirmations of use cases involving global policies and specific measures as well as regional initiatives.

Within the global support areas, we support Group companies outside Japan under five regional sites, where we have established nine branch sites.

Organizational structure of the IT departments

- 1 The Group Corporate CIO supervises the entire Group in coordination with the CIOs of individual companies
- 2 The CIOs of individual companies supervise the IT departments of the subsidiaries under them



*1 5 regions: the Americas, Europe, China, India, and Singapore
*2 RC: Regional Company *3: BU: Business Unit

Selection for DX certification and the "DX Brand 2021 Grand Prix"

Hitachi has received certification under the Ministry of Economy, Trade and Industry's (METI's) DX certification system as a DX-certified business operator.

The DX certification system is a system by which Japan certifies companies according to basic digital governance and code items, and is intended to encourage DX throughout society as a whole, centered around companies. The DX initiatives at Hitachi, which involve a management vision, business strategies, organizational systems, and the preparation of IT systems and DX solution platforms, have been certified as having satisfied the certification criteria.

In addition, Hitachi was selected by the METI and the Tokyo Stock Exchange to be a Digital Transformation Brand (DX Brand) 2021 recipient as part of the DX Grand Prix.

The DX Brand designation involves the selection and announcement of companies that have built internal mechanisms for promoting DX that are tied to improving corporate value, and have demonstrated superb results in the application of digital technologies. Among the companies selected to be DX Brand companies, companies that transcend their industries to become leaders in the digital age are selected as DX Grand Prix companies.

Hitachi is deploying its internal initiatives for using forward-looking digital technologies and co-creation case studies involving customers as part of its Lumada offering, and is advancing DX globally. Hitachi received particular praise for points related to linking DX at the company and with customers to business expansion globally, based on factors such as initiatives both inside and outside the company that use Lumada, results from creating new businesses, strategies and platforms aimed at accelerating DX globally, and the establishment of organizational structures.



DXグランプリ2021
Digital Transformation

Internal IT Management for the Hitachi Group

The IT departments in each of the five global areas are contributing to the smooth and efficient management of business through various measures tailored to each region's particular characteristics and business strategies.

Contributions to regional business strategies in global areas

Hitachi America Ltd.

America's market is a major focus for Hitachi with 87 companies and over 27,000 employees. The IT department of Hitachi America Ltd. is a strategic, value-driven IT partner for Hitachi businesses in the region, and is leading DX with a new IT framework.



Jaya Ramaswamy

The IT department of Hitachi America Ltd. is driving key initiatives to enable a digital IT foundation for Hitachi businesses. These initiatives include modernizing and migrating an entire data center to the AWS cloud; assisting with a multi-cloud strategy to improve business agility and resiliency; implementing a digital core with SAP S/4HANA; driving global adoption of SFDC^{*1}, RPA, and emerging technologies through the CoE^{*2}; offering a unified user-customer experience through Service-Now; and building next-generation, secure infrastructure by using a zero-trust framework.

Hitachi Europe Ltd.

Hitachi's European business constitutes a key growth driver for sales and profits, not least through the integration of Hitachi ABB Power Grids, Ltd. and the focus on our region for COP26.



Jeremy Tjebbes

In support of business growth, Hitachi Europe Ltd. has continued to grow IT shared services across EMEA^{*3}, closing FY 2020 with record revenues across IT services and beating the budget by 13% to return £12.9M in revenue. By consolidating IT services and contracts, we have reduced costs for Hitachi and improved collaboration by sharing platforms and systems.

Brexit^{*4} and COVID-19 have presented challenges to Europe where business relies on open borders, and IT has been key to the success of Hitachi in overcoming these challenges. For Hitachi Europe, we have completed our data center exit. This has resulted in a significant shift to the cloud, and we are now in a position to help our colleagues across EMEA achieve the same.

Hitachi (China), Ltd.

In China, it is necessary for us to take region-independent measures from the perspective of not only Chinese government policy, such as controlling information assets, but also existing China-specific, de-facto standards in various kinds of business application systems. Also, with the gradual application of the China Cybersecurity Law and restrictions on storing important data or individual data on overseas servers, we are likely to see more serious business risks in the near future.



Bao Long

We have started to establish shared IT services in China that fully comply with the law by deploying systems that conform with the de-facto standards in China as well as by revising GWAN for China. These have been mostly provided successfully to many Group companies in China. In areas where global standards can be used, global measures will be used as is, while in areas where local conditions cannot be ignored, regional shared services will be used to centralize them. By developing a mechanism that enables efficient mutual cooperation with common global measures, Hitachi (China), Ltd. aims to contribute to the promotion of business in China.

Hitachi Asia Ltd.

In FY 2020, we contributed to the Hitachi business through the promotion of DX activities to support Hitachi's APAC strategy in creating Industry 4.0 transformation opportunities throughout the ASEAN region. This includes Programs to raise awareness on the importance of DX to business operations and Lumada services.



Aoki Mikio

We organized two webinars on the Digital Workplace and DX, reaching out to 37 companies in five countries to establish stronger connections and support. We promoted EDR^{*5} and IT asset management services to improve the effectiveness of IT governance and security and to establish secure IT environments in response to the new normal of work styles.

Hitachi India Pvt. Ltd.

One of the characteristics of Hitachi Group companies in India is that there are many manufacturing and IT-related companies.

We support these Group companies by sharing information on IT security and conducting educational activities to ensure that they can conduct business safely.



Shibata Hideyuki

In addition, we are preparing to provide digitization solutions for Group companies in cooperation with partner companies, and we provide appropriate IoT solutions by request. At Hitachi India Pvt. Ltd., we have made advanced progress in digitization in the accounting and human resources divisions, and our team supports this progress. Going forward, we will continue to provide optimal IT environments while analyzing in detail how the planned PDPB^{*6} will affect business IT in India.

*1 SFDC: A brand name for a series of products provided by Salesforce.com, such as sales support systems and customer management systems *2 CoE: Center of Excellence

*3 EMEA: Europe, the Middle East, and Africa *4 Brexit: "British exit" (the withdrawal of the United Kingdom from the European Union)

*5 EDR: Endpoint Detection and Response *6 PDPB: Personal Data Protection Bill (a bill in India about the protection of personal information)

 **Hitachi, Ltd. IT Strategy & Digital Integration Division**

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