Hitachi Review

May 2025 Technical Information

Services & Platform Managed Services

Digital Systems & Services

#Innovation Creation #Co-creation and Open Innovation #Sustainability #Productivity Improvement #Generative AI #Security #IoT/Data Utilization #Digital Solutions #IT Products

1. Hitachi Platform Solutions for Using Generative AI to Accelerate Customer Business Growth

The flexible, safe, and secure modernization of systems is urgently needed to keep up with changing customer needs and behavior patterns and to be competitive in the market. Use of generative artificial intelligence (AI), in particular, is spreading rapidly around the world, with the services & platforms and managed services category covered here being no exception. Hitachi's Cloud Services Platform Business Unit established its Application & Platform Office for Generative AI in April 2024 to provide a comprehensive range of services and solutions for generative AI platforms. These activities are summarized below.

(1) Generative AI platforms

With the availability in recent years of cloud systems that provide people with easy access to generative AI, an increasing number of businesses are starting to look at how they can be used to improve productivity. Generative AI is also seen as a means of strengthening the sustainability of businesses facing the prospect of workforce shortages. Unfortunately, concerns still stand in the way of full-scale deployment and some initiatives are likely to remain stalled at the verification stage. Hitachi, meanwhile, was quick to adopt the technology in-house to build up its own experience and has already launched services that incorporate this know-how. To facilitate the use of generative AI, Hitachi has put measures in place to support each of the steps involved in full commercial deployment, from planning through to system implementation and ongoing operation.

(2) Data infrastructure

Hitachi is continually incorporating new technologies into its products as it develops and supplies the products essential to building mission-critical data platforms. In the future, Hitachi intends to continue supplying the diverse products needed to bring about a sustainable society, including use of generative AI, building on its range of data platform products for use in hybrid cloud environments, and working toward carbon neutrality in data centers.

(3) System integration

To achieve a digital society in which everyone can gain safe, secure, and convenient access to new systems, there is an urgent need to move beyond legacy infrastructure to provide flexibility and agility in the core systems that support customers' key activities. Hitachi draws on its long experience in the implementation and operation of mission-critical systems, utilizing new technologies and expertise to support the modernization of customer IT systems with an expectation that greater use will be made of generative AI in the core systems of the future, including the modernization of online transaction systems and the migration of on-premises data platforms in anticipation of multi-cloud operation. Likewise, Hitachi's biometric authentication technology developed over many years has been adopted by social infrastructure operators with activities encompassing a wide range of businesses. Used in a range of different customer services, the technology provides a way to overcome the digital divide that threatens to become an issue of concern in services used by large numbers of consumers.

(4) Managed services

Issues such as cloud expenditure and the optimization of usage volumes that were not pertinent in an on-premises environment are likely to come to the fore as greater use is made of the cloud and use of generative AI proliferates. In an effort to enhance business value for customers who use the cloud, Hitachi is devising operational improvements with a view to cost optimization by cloud experts.

(5) Partnering and digital workforce

The initiatives described above are not something that can be achieved overnight. Rather, they are accomplished through collaborative creation with customers and by working with leading technology partners. As putting Hitachi's extensive digitally skilled workforce to work is essential to supporting these activities, Hitachi also engages in ongoing workforce development. In particular, the intention is to further enhance off-the-job training in AI by working alongside partners.

Generative AI has seen rapid progress over recent times and its use is becoming vital for many customers. This section deals with the services & platforms and managed services category and presents articles on the services and solutions supplied by Hitachi and other related initiatives for supporting the mission-critical systems of such customers.

2. Promoting Partnerships with Advanced Technology Partners in the Generative AI Era

Through partnerships with leading technology partners in various fields, Hitachi will contribute to the realization of a sustainable society while making a positive social impact. Looking ahead, it expects technologies related to the rapidly expanding field of generative AI and the growing demand for data centers to become increasingly vital to achieving this goal.

[02] Leading Technology Partners in the Generative AI Era

* The corporate logos are shown in alphabetical order.

In recent years, Hitachi has announced partnership spanning multiple years with several partners. These include NVIDIA, a supplier of graphics processing units (GPUs) and other infrastructure vital to AI; Microsoft, which has collaborated extensively with Hitachi across various domains including metaverse and generative AI; Google Cloud*, which offers a rich portfolio of large language models and cutting-edge generative AI services; Amazon Web Services (AWS*), with whom Hitachi has built a long-standing partnership in hybrid cloud solutions; Singtel, a major Asian telecoms company involved in fifth-generation (5G) and other next-generation telecommunications; and Equinix, a global provider of digital infrastructure and services.

By combining these partners' advanced technologies with its operational technology (OT) capabilities and digital expertise, Hitachi will continue to enhance its Lumada platform, drive innovation across diverse fields, and strive to deliver new value to its customers and society.

* See the list of “Trademarks”.

3. Rollout of Common Platform for Generative AI with Core Role for AX-PJ

Hitachi is stepping up the use of generative AI throughout the company as it embarks on its AI transformation project (AX-PJ) for comprehensively reforming its business practices. At the heart of this project is its common platform for generative AI.

The platform provides a standardized environment that makes it easy for anyone to develop and execute generative AI applications. It includes knowledge and support tools to assist with development and share knowledge and assets, an execution platform for generative AI inference processing, and a generative AI model training environment for building LLMs tailored to specific applications. Making these available as shared assets and rolling the platform out across all Hitachi Group sectors [Connective Industries (CI), Green Energy & Mobility (GEM), and Digital Systems & Services (DSS)] and group companies will boost productivity by encouraging the use of generative AI in numerous different departments and business processes. Example use cases include the GenAI System Development Framework for more efficient system development and integration, use in product development, and customer service applications at the TWX-21 call center and Hitachi Support 360. In the future, Hitachi intends to utilize knowledge acquired from use of the technology within the group to develop new services that will resolve challenges facing customers and wider society that are driven by factors such as workforce shortages.

[03] Use of Common Platform for Generative AI throughout Hitachi Group and Leveraging of Acquired Knowledge for Benefit of Customers

4. Services for Building and Operating Domain-specific LLMs and for Use of Generative AI in Business

Hitachi is running approximately 1,000 in-house trials on the use of generative AI in IT and operational technology (OT) applications. The demand for generative AI has in recent times come not only from productivity improvement and business efficiency initiatives but also from skills transfer and measures for dealing with the lack of staff resulting from workforce shortages, and from core business activities for boosting corporate competitiveness.

[04-1] Collaborative Creation Project with Shizuoka Bank (translated from 2024/10/15 news release)

At Shizuoka Bank, for example, generative AI is being applied to system development by incorporating Hitachi knowledge and expertise into an advanced open core banking system. While the development process is made up of various steps including design, implementation, and the different stages of testing, the work will start with trial use in the implementation and unit testing stage. Commercial operation will begin in FY2025 and the scope will then be progressively expanded).

Based on these requirements and Hitachi's own in-house experience, Hitachi will offer two services to support routine use of the technology in business operations. The service for building and running domain-specific LLMs*1) will build AIs that can act like an expert who has learned from experience and specialist knowledge accumulated in the company, equipping them with the ability to respond to queries that call for a mix of specialist knowledge. The service is already being deployed within Hitachi in applications that include assisting with maintenance by training on specialist product knowledge and supporting reviews conducted at the design stage of system development. The service for the use of generative AI in business, meanwhile, provides an environment for running generative AI that suits the level of the task being dealt with. It is available either on the cloud or as an on-premises system depending on requirements such as the data security level.

By making these services available outside Hitachi, the goal for the future is to contribute to the widespread adoption of generative AI for business in all areas of society and to the resolution of workforce shortages.

*1 Generative AI, Lumada: Hitachi

[04-2] How Domain-specific LLMs are Used

RAG: retrieval-augmented generation
SE: system engineer

[04-3] Professional Service for Use of Generative AI

GPU: graphics processing unit
*) Hitachi iQ with NVIDIA DGX

* See the list of "Trademarks".

5. Hitachi iQ Supporting Corporate AI Infrastructure

The utilization of generative AI that reflects the specialized knowledge unique to individual businesses, such as combining it with customer-specific data, is becoming increasingly important.

Hitachi Vantara's AI infrastructure solution, Hitachi iQ, can provide right-sized on-premises infrastructure for AI that suits the scale of the business. It is available in a wide range of options, from an enterprise model to mid-range and entry-level models. By combining the latest NVIDIA GPU/AI platform with Hitachi storage, it also delivers the high performance required for generative AI. The enterprise model is suited to heavy-duty training and other high-speed processing of large volumes of data, with features that include NVIDIA DGX BasePOD* certification. The mid-range model, meanwhile, keeps the up-front investment to a minimum while still allowing for flexible scale-out as needed to suit the size of the training or inference workload. By encouraging the use of highly confidential corporate data for generative AI, this supports business innovation by customers.

In the future, Hitachi iQ will be more closely integrated with services provided by GlobalLogic and a range of other Hitachi Group companies to expand the scope of generative AI support for customers.

(Hitachi Vantara Ltd.)

[05] Hitachi iQ AI Infrastructure Solution

* See the list of "Trademarks".

6. Use of Generative AI in JP1 Cloud Service to Expedite Operator First Response to Alerts

JP1 Cloud Service, an operations management platform supplied on a software-as-a-service (SaaS) basis, now offers a generative AI assistant that can speed up the first response of operators to alerts. It shortens the time it takes for the operator to determine how best to respond to a system alert (notification of a fault or other event).

When tested at Hitachi, the AI assistant was found to give appropriate responses on how to respond to alerts more than 90% of the time*). When deployed for operations and monitoring within Hitachi Group, it also delivered an approximate two-thirds improvement*) in the time taken to decide on a first response.

With IT departments taking a leading role in the digitalization of corporate operations, an urgent need has arisen over recent years to improve the efficiency of operations that have been handled manually in the past. JP1 has been used to support the operation of mission-critical systems for many years. Through close engagement with this role of IT departments and incorporation of the latest technologies such as generative AI and the cloud into its operations management platform, JP1 is fostering innovation in companies and wider society by automating system development and operation.

*) Instances during testing when the assistant proposed actions that were in accordance with multiple response manuals (including cases where the generative AI was queried multiple times).

［06］Diagram of Alert Response Using Generative AI in JP1 Cloud Service

* See the list of “Trademarks.”

7. Promotion of Carbon Neutrality at Hitachi Data Centers

With climate change intensifying as the planet continues to warm, the promotion of carbon neutrality in data centers, which consume large amounts of electricity due to factors such as rising demand from generative AI systems, is an important challenge in achieving a sustainable society.

［07］Carport Photovoltaic Power Generation Equipment Installed on Data Center Premises

To address this challenge, work is underway at Hitachi data centers to achieve Hitachi’s long-term environmental goal of achieving carbon neutrality at its factories and offices by FY2030 ahead of schedule, aiming to achieve it by FY2027.

In addition to acquiring non-fossil fuel certificates in 2023, an “additionality” initiative for the deployment of new renewable energy equipment has involved the installation of a carport photovoltaic power generation system in a data center carpark that operates under an on-site power purchase agreement (PPA). With the launch of data center services that utilize renewable energy, work on data center carbon neutrality also includes support for environmental management by customers.

In the future, Hitachi intends to contribute to achieving a sustainable society by procuring renewable energy that has scope for “additionality.”

8. FinOps with Potential for Using Cloud to Maximize Business Value

The global cloud business has moved beyond simply adopting the cloud, and the practice of FinOps is becoming commonplace in the enterprise world. FinOps is an operational framework and cultural practice which maximizes the business value of cloud and technology. Unfortunately, awareness and understanding of the topic remain low in Japan, with engineers at many organizations still seeing the continuous improvement activities of FinOps for right-sizing cloud expenditures and usage as no more than a time sink.

Through its participation in the FinOps Foundation, a non-profit organization that is working toward the wider global use and standardization of FinOps, Hitachi is taking the lead in promoting a proper understanding of the topic and encouraging its wider use in Japan while also fostering cloud engineering experts with a thorough knowledge of FinOps.

In the future, Hitachi intends to contribute to the maximization of the business value that companies derive from their use of the cloud through the provision of its Hitachi Application Reliability Centers (HARC) service, which supports ongoing cost optimization by trained experts and use of the latest technologies and practical know-how that Hitachi has obtained through its participation in the FinOps Foundation.

［08］Overview of FinOps Framework

SaaS: software as a service
ITAM: IT asset management
ITFM: IT finance management

ITSM: IT service management
Source: FinOps Foundation, FinOps Framework Poster v4 (CC BY 4.0)

9. Hitachi Employees Recognized in All Categories with 2024 AWS Ambassadors a Highlight

A total of 29 Hitachi, Ltd. employees have received awards under the Amazon Web Services (AWS*) partner program across the four categories of AWS Ambassadors, Japan AWS Top Engineers, Japan AWS Jr. Champions, and AWS Japan AWS All Certifications Engineers. These awards recognize engineers with specialist technical expertise in AWS for their contributions both inside and outside the company.

［09］Photo Shoot Held in Days Prior to AWS Partner Network Awards Ceremony

Hitachi has been putting a lot of effort into fostering cloud engineers, putting measures in place to support training and the acquisition of AWS qualifications, and treating them as a key resource for advancing digital transformation (DX). To further boost its work supporting the modernization of customer systems and their migration to the cloud, Hitachi also embarked in 2024 on a new strategic partnership with AWS. In the future, Hitachi intends to deepen its relationship with AWS and utilize its technical capabilities to support customers as they make their digital transformation.

* See the list of “Trademarks.”

10. Accelerating Modernization of Online Transaction Systems Maintaining Stability of Core Business Systems

Hitachi has launched its Hitachi Microservices Platform - Paxos Commit Transaction Orchestrator to accelerate the modernization of online transaction systems while maintaining the stability of key mission-critical systems that support the social IT infrastructure of finance, transportation, and electricity.

In the context of online transaction systems (e.g., financial transactions) where errors and data omissions can have social consequences, reliable data updates with ACID properties (Atomicity, Consistency, Isolation, and Durability) are paramount. Maintaining this reliability requires sensitive control of operations during IT system faults or outages. Conversely, distributed architectures such as Cloud and Microservices Architecture are becoming mainstream architectural practice in IT systems. These architectures are well-suited to modern IT system technologies, but in the event of faults or outages, control is more complex than in a monolithic architecture. Consequently, when developing online transaction systems in the cloud or microservices, it is essential to give meticulous consideration to failure control. This challenge hinders the modernization process, contributing to the legacy status of online transaction systems.

The adoption of Hitachi's new product will streamline the complex process of developing and operating an online transaction system in the cloud. It will also enable the use of cloud-native technology in online transaction systems. This new product will play a core role in Hitachi’s ongoing support for the modernization of enterprise systems.

［10］Hitachi Microservices Platform-Paxos Commit Transaction Orchestrator

*Hitachi’s uCosminexus OpenTP1

11. IT Modernization Trials and Customer Deployment in Readiness for Multi-cloud Operation

Hitachi has worked in partnership with Oracle Corporation Japan to trial multi-cloud configurations for core business applications. This involved an evaluation of processing performance and availability in terms of the likely requirements for such applications and ran on a multi-cloud configuration that combined Oracle Cloud Infrastructure* and Microsoft Azure*. The results indicated sufficient performance for high-volume transaction processing and demonstrated suitable tuning practices based on data volumes in batch processing*1. Hitachi will use these findings to improve its support for cloud migration and to help customers modernize the platforms on which they operate their businesses.

[11] Testing of Multi-cloud Configurations Suitable for Core Business Systems

Hitachi launched a service to support migration to the cloud in 2024 and has received positive feedback from customers on its implementation of platforms for putting data to use*2. Acknowledging this work, a Regional Best in Class Award in Customer Success was presented by Oracle in September 2024, recognizing Hitachi as a leading partner globally*3.

In response to the rapid rise in demand for multi-cloud configurations in core business systems, Hitachi intends to further strengthen its testing work with cloud vendors so that it can supply solutions that are highly regarded by its customers.

* See the list of “Trademarks.”

*1 “Support for Cloud Migration Strengthened by Results of Joint Testing of Multi-cloud Configurations for Core Business Systems Conducted in Partnership with Oracle Japan”in Japanese.

*2 “How Mizuho Leasing was Able to Build a Company-wide Platform for Use of Data in Just Three Months – A Behind-the-scenes Look at the Project”in Japanese.

*3 “Hitachi Recognized as Leading Partner Globally at 2024 Oracle Partner Awards, Receiving Regional Best in Class Award in Customer Success,”in Japanese.

12. Digital Identity Platform with Biometric Authentication

With solid progress being made on the application of digital technologies to social infrastructure, biometric authentication has attracted attention as a technology with broad applications that can also be used to address issues such as the digital divide in cashless payments, the provision of age-restricted products, and identity theft. With the goal of overcoming these societal challenges, Tobu Railway Co., Ltd. and Hitachi are working together to promote the wider adoption of a shared platform for digital identity that uses biometric authentication. The partners combined Hitachi’s technical capabilities in fields like finger vein authentication and public biometric infrastructure (PBI) acquired through many years of research and development with the knowledge that Tobu Railway has gained from operating a wide range of services, including railways, retail, hotels, and amusement facilities to launch the SAKULaLa* biometric authentication service at three Tobu stores from April 2024.

As of October 2024, the service has more than 5,000 users and is operating in eight retail outlets, including Tobu stores. Acknowledging that the service will need to increase both its user base and number of outlets if it is to become well-established in the infrastructure of society, the goal for the future is to have it adopted in an industry-agnostic manner across many different areas of daily life as a service that makes it easy for users to demonstrate their digital identity by means of biometric authentication.

[12] Applications for IDs Using Biometric Authentication

ID: identification

* See the list of “Trademarks”.

13. Next-generation VSP One Mid-range Storage with Revamped Architecture

As applications such as generative AI continue to drive growth in the volume of data handled by companies, there is demand for storage that can help users maintain and use large amounts of data with the reliability needed for business, and to do so efficiently and with concern for the environment.

The Hitachi Virtual Storage Platform One (VSP One) 2U Block Appliance is a next-generation mid-range storage product that features a revamped architecture and innovative storage technologies for more efficient management of large amounts of data. Specifically, the new product features both high data compression and high performance, with a new algorithm for high compression ratios that reduces data size by 75% on average*1 and enhancements to Hitachi’s proprietary compression accelerator hardware*2 and other functions that roughly double input/output (I/O) performance when engaged*3. Hitachi has also improved data protection functions and made changes that take account of the environment.

Hitachi Vantara Ltd. also intends to help customers make safe, reliable, and easy use of their data through further enhancements to its VSP One hybrid cloud data platform that unifies on-premises and cloud data.

(Hitachi Vantara Ltd.)

[13] Features of New VSP One 2U Block Appliance Storage

*1 Reduction in data size when data compression and elimination of duplication is enabled on VSP One B28 or B26. Performance is different on VSP One B23.
*2 Calculated based on per-TB power consumptions of VSP One B28 and previous model (VSP E790) in NVMe AFA maximum configuration

*1 Reduction in data size when data compression and elimination of duplication is enabled on VSP One Block 28 (B28)

*2 A proprietary technology that uses dedicated data compression hardware to maintain processing performance while improving compression ratios (patents: US patent numbers 11,294,578, 11,119,702, and 11,625,168)

*3 Comparison of throughput performance measurements [Random Read (32K) IOPS] from previous model (VSP E790) and VSP One B28 with data compression and elimination of duplication enabled

14. Factory Inspection Automation Service Using Autonomous DX Robot

With the goal of enhancing all aspects of facility operations, ugo, Inc., Hitachi Plant Services Co., Ltd., and Hitachi Systems, Ltd. have jointly developed a service for automating factory inspection using a DX robot. The service launched in May 2024.

The goals of the service are to have a DX robot move around the factory inspecting equipment and to analyze the collected inspection data to make plant operation more efficient. The ugo* hybrid DX robot used for this purpose supports both autonomous movement and remote operation. Used in tandem with the CYDEEN automatic meter reading service from Hitachi Systems, the sensors on the ugo robot can automatically collect meter readings and data on temperature, humidity, and other environmental conditions in the factory. When the collected data is combined with Hitachi Plant Services' expertise in the maintenance of large plants acquired from more than 60 years working in the field, the service can facilitate improvements in the efficiency of equipment operation, such as in the transfer of skills from experienced engineers, improvements to energy efficiency, and the provision of advance warning of faults.

(Hitachi Systems, Ltd.)

[14] 14 Automation of Factory Inspection Using a DX Robot

* See the list of "Trademarks".

15. Package for Assessing Utility of Generative AI

In response to rapid market growth, Hitachi Systems launched a package in December 2023 that helps companies interested in using generative AI assess the utility of the technology. The package runs on Microsoft's Azure* OpenAI Service and provides services through a simple user interface (UI) that is intuitive even for users unfamiliar with generative AI. For customers wanting to use generative AI to improve operational efficiency, it provides a quick (as short as one month) and low-cost way to configure a dedicated environment for assessing the utility of the technology that can access data held within their own systems.

In the future, Hitachi intends to pay close attention to requirements such as providing a WebUI model and product templates customized for specific industries (such as generative AI for local government or generative AI for the finance sector) and improving the performance of services that help customers to implement generative AI. By providing total support for encouraging use of the technology, extending from production environments through to bedding in use of the system and expanding its scope of operation, Hitachi will support customers in their use of generative AI and their work toward DX.

(Hitachi Systems, Ltd.)

* See the list of "Trademarks".

[15] Block Diagram of Package for Assessing Utility of Generative AI

16. Support for Overcoming SE Workforce Shortage Prior to Government Cloud Migration Deadline

Drawing on knowledge of the government cloud that it has acquired from past work with local government, and with the aim of contributing broadly to the public interest, Hitachi Systems in August 2024 began helping local governments with their “lift” migration to the government cloud and providing support for operations and networking*1. This support extended to all municipalities, not just existing users of Hitachi’s ADWORLD*2 solution for local government.

Details of the support being provided are as follows.

(1) Lift support for government cloud and post-lift operations support
This involves specialist groups from different fields working together to provide a high-quality cloud environment, beginning with configuration (including virtual space, networking, and security functions) and including tasks like operating system (OS) set up. Hitachi Systems also serves as a system administration advisor, providing operational services that satisfy the many non-functional requirements of the Digital Agency and Ministry of Internal Affairs and Communications, including anti-virus security, OS patch installation, system monitoring, and providing a job execution environment.

(2) Hitachi Systems support in multi-vendor configurations
Here, Hitachi Systems fulfils the network account and system administration advisor role required when running a multi-vendor configuration, providing network management, management of upgrade servers, and configuration of an environment for data exchange.

(3) Support for connecting to the government cloud via leased lines
Hitachi Systems can offer leased lines for dedicated closed-network connections between local government offices and the government cloud, including line installation.

These services provide reliable lift, operations, and networking support for local governments grappling with migration to the government cloud, helping them complete the transition before the deadline, reducing the workload of local government staff, and facilitating improvements in administrative efficiency and convenience for residents.

(Hitachi Systems, Ltd.)

1 As of August 5, 2024, this support was only available for cloud services on AWS.

*2 A total solution incorporating the latest technologies together with the extensive experience in local government systems that Hitachi Group has built up over many years. It provides systems for the 20 processes designated for standardization that conform to the government-issued standard specifications.

［16］Hitachi Systems’ Government Cloud Solution for Migration, Operation, and Networking

LGWAN: local government wide area network
ASP: application service provider

17. Enhancements to SHIELD Cybersecurity Solution

In March 2024, Hitachi Systems expanded the range of services it offers through its SHIELD cybersecurity solution, which is part of the service system of the company’s managed service, referred to as "Hitachi Systems Managed Services".

The NIST CSF*2 provides systematic definitions for all aspects of security response policy, from routine operation through to when incidents occur. Based on this, Hitachi Systems has divided customer security operations into 25 tasks grouped into seven categories and organized the security responses that customers require in their operations into processes. To make it easy for customers to choose which security services they need, Hitachi Systems has also collated the services available in its SHIELD cybersecurity solution in a way that indicates how they relate to each of these processes.

As this involves Hitachi Systems offering a comprehensive range of options that extend from consulting to implementation support and operations and monitoring, it allows customers to deal with Hitachi Systems for all aspects of their security, resulting in reducing the total cost of security measures and shortening the time required to implement them.

For incident response in particular, Hitachi Systems has introduced three new services to speed up the time it takes customers to respond to incidents. These are a security operation center (SOC) service, vulnerability management service, and computer security incident response team (CSIRT) support service. Use of all three services in tandem should also deliver synergies through centralized incident management and efficient response.

By expanding the scope of its services beyond IT assets to also include OT asset security, and by contributing further to the protection of social infrastructure and to improving customers’ cyber-resilience, Hitachi Systems is seeking to grow its managed security service business.

(Hitachi Systems, Ltd.)

*1 Hitachi Systems Managed Services provides a suite of services in the following three categories.
(1) SHIELD cybersecurity solution for security implementation, monitoring, and operations.

(2) Gateway for Business Cloud, a multi-cloud solution for implementation, monitoring, and operations that encompasses multi-cloud environments, networks, data centers, and more.
(3) CC & BPO, a service that supports customer business operations through contact centers (CC) and business process outsourcing (BPO).

*2 A cybersecurity framework published by the National Institute of Standards and Technology (NIST).

［17］ Seven Categories the Comprehensively Encompass Security Operations

Hitachi Review

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