

SDGs Action Book



Supporting the SDGs, Creating a Sustainable Future with Customers

Working for Social Solutions with Co-Created Innovation

There has been rapid development in new technologies in recent years, including 5G, the fifth generation mobile communications standard, artificial intelligence (AI), big data, and the Internet of things (IoT). Through increased analysis and utilization of the data accumulated through these technologies, it has become possible to create and provide new value in a broad range of fields, from enhanced convenience for people's daily lives to greater productivity in industry. These various providers are working to create diverse and innovative new services to help resolve social issues in Japan, like regional revitalization and the declining birthrate and aging population, through the utilization of ICT in collaborative partnerships that transcend existing sector and format demarcations.

At the same time, society directly faces a number of major challenges, including how to address increasingly complex and sophisticated cyber security threats, how to deal with increasingly severe natural disasters, and how to implement measures to counter the spread of COVID-19. In these efforts, information and communications, and the expectations for them, continue to increase, in terms of both safe and secure social system operations and realizing healthy, enriched lifestyles.

The NTT COMWARE Group utilizes ICT technologies developed in the IT division of the NTT Group, which has continuously provided communications connecting customers 24 hours a day, 365 days a year, to take on the challenge of creating new value and resolving social issues through co-created innovation that generates new business with customers.

Helping to Achieve the SDGs through Business Activities

In 2016, the NTT Group formally announced its agreement with the United Nations' Sustainable Development Goals (SDGs), a shared set of goals for realizing a sustainable society.

In 2017 we revised the NTT COMWARE Group CSR Policy and clarified how the SDGs connect to the four main CSR themes we had engaged in. We also revised our quantitative CSR indicators, which serve as key performance indicators for each theme. Through efforts to meet these targets, we are working to help achieve the SDGs as well.



With corporations increasingly expected to embody both social and business value, a concept known as “creating social value,” or CSV, in fiscal 2019 we began participating in the B2B2X business model being promoted under the NTT Group’s medium-term management strategy, Your Value Partner 2025, and also designated Managing Value for Smart World as our brand statement. We have also set targets and indicators, and are strengthening activities, directly connected to business activities, specifically, the cultivation of ‘agile’ human resources who conduct practical, flexible development. Details on our CSR initiatives are published in the NTT COMWARE Group Sustainability Report.

This SDGs Action Book, being published for the first time, introduces our specific initiatives related to the SDGs by focusing on examples of our contributions to them. For example, NTT COMWARE’s Deeptector®, an image recognition AI that uses deep learning, replaces testing and inspections that rely on people’s visual judgment with artificial intelligence, for the ultimate aim of resolving social issues. From product inspections at manufacturing facilities facing the issue of securing and training inspectors to inspections of infrastructure that relieve inspectors of the need to work in dangerous places—the opportunities for utilizing Deeptector® continue to expand, and it has been very well received by customers. It is my hope that the practical examples included here helpfully illustrate our concept of co-creation between customer businesses and our technologies and services.

Creating a Sustainable Future ‘Connected’ by Free Thought

NTT COMWARE adopted a year-round casual dress code in spring 2020. Equivalent policies for summer and winter, which were instituted as a climate change measure rooted in daily life, were extended for the full year, not only to further reduce carbon emissions but also to inspire various innovations by encouraging freer styles for freer thought.

Our corporate message, “Connect hearts, deepen social networks,” has been, and will continue to be, important. We ourselves will practice telework and other working styles during and after the pandemic to identify issues of concern to society and generate innovation; we will take on the challenge of creating a sustainable future that looks beyond even the SDGs.

Measures to Address COVID-19

Current Measures

In response to the spread of COVID-19 in Japan and other countries, NTT COMWARE created a response headquarters and implemented various response measures with the participation of the management team as appropriate. Specifically, at the end of January, when the first case was confirmed in Japan, we strengthened its monitoring as a business risk requiring close attention. To maintain the safety of employees, ensure business continuity and communications, and fulfill our mission as a provider supporting daily living in society, which encompasses electricity, gas and water utilities, medicine, transportation, financial services, logistics, and more, we closely monitored domestic and international developments and worked to prevent infections by implementing timely measures that included staggered working hours, utilization of remote work, rigorous facility sanitation and health management, and active use of remote tools like online meetings.

In addition, with the virus putting serious restrictions on economic and daily activities throughout society, the NTT Group implemented various support measures, including educational support and assistance for municipalities, corporations and business owners. As a part of this, in June, NTT COMWARE began providing follow®, our cloud-based work management system, free of charge. The current initiatives of the NTT Group are overviewed on the site at right.



NTT Group Measures to Address the COVID-19 Pandemic

Going Forward

In business operations, since the state of emergency was lifted nationwide at the end of May, we have worked to maintain standard levels of quality and productivity in both development and maintenance based on the NTT Group’s overall policies and the specific requirements of municipalities. At the same time, trends going forward still need to be watched closely, and we will continue to flexibly take measures based on government and municipal policies while keeping top priority on preventing the spread of infections and ensuring the safety of employees.

Satoshi Kurishima

Satoshi Kurishima

President,

NTT COMWARE CORPORATION

Management for Co-Creating Value with Society

NTT COMWARE has provided optimal solutions to customers out of a sincere desire to support Japan's communications infrastructure and transform how people live. As a business integrator, we will pursue quality and credibility for our solutions, think and act together with our clients, and co-create new business value as their true partners.

NTT COMWARE Vision (rev. 2017)

NTT Comware's Identity

NTT COMWARE will pursue quality and credibility of our solutions and contribute to the formation of a communication-rich society by "co-creating" business value with our clients.

Corporate Message

Connect hearts, deepen social networks

Principles of Action, Policies & Principles of Action

To help our clients' continuous development and to "co-create" their new business value, we will think and act together with our clients.

To enhance our corporate value, we will become and foster professionals.

To develop and stabilize our society, we respect diversity, play a role as a member of our society, and observe its rules.

To achieve the best team performance, we will take on jobs that, despite their necessity, no one else does.

To make our dreams come true, we believe in our potential and will continue to do XX.

As a Member of the NTT Group

NTT Group has been working to achieve sustained growth through the resolution of social issues based on the NTT Group CSR Charter. The charter consists of our CSR Message, a statement of our commitment to corporate social responsibility, and four CSR Themes, which specify the priorities of our CSR activities. The Group as a whole works on this basis to promote CSR.

Based on the NTT Group CSR Charter, NTT COMWARE has formulated a CSR Policy (next page) that reflects its business activities and guided by this policy works to resolve societal issues.

NTT Group CSR Charter



NTT Group CSR Charter: https://www.ntt.co.jp/csr_e/groupcsr/csr_policy.html

CSR: Our Commitment and Contribution to Society

NTT COMWARE's CSR emphasizes actions based on its own business characteristics in line with the NTT Group CSR Charter. SDGs are focused on as a yardstick for this. To continue to contribute to society and its sustainability, the NTT COMWARE Group will continue to carry out multifaceted CSR activities on a united front while keeping a close watch on the changes taking place in society.

CSR Message

We, as NTT COMWARE Group, will take initiatives in solving social issues through our business activities by providing the best possible services and reliability rooted in a strong ethical outlook and robust technological capabilities to create business value together with our clients and will contribute to creating a safe, secure and sustainable society.

CSR Theme

Main Related SDGs



Enrich Society

We will contribute to creating a more prosperous and smarter society with a sustainable development focus and by solving various current social issues and new social issues resulting from future innovation around the world by enabling our clients' digital transformation.



Protect Environment

We will reduce environmental impacts throughout NTT COMWARE Group businesses and will take the initiative in reducing the current environmental issues of society by using Information and Communication Technology (ICT) to help resolve this worldwide challenge.



Safety & Security

We will provide reliable ICT solutions that support society and help ensure safety, information security and privacy, that are resistant to physical or cyber attacks and that are designed for fast recovery from any disasters.



United NTT

We, as NTT, will always work with sound health in body and mind, a high ethical perspective, respect for human rights, and an awareness of our partners. We will endeavor to ensure a safe working environment with respect for diversity and individual growth while helping build healthy communities.





9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Society's Expectations

SDG 9 calls for innovation to be promoted throughout society in order to realize a society where people can live progressive, comfortable lives now and in the future. ICT companies in particular are expected to take the initiative in contributing to this goal through development and practical application of advanced technologies that positively impact society and individual communities.

INDUSTRY, INNOVATION AND INFRASTRUCTURE

NTT COMWARE's Focus in Value Creation

With a motto of "Be a business integrator creating the future via co-created innovation," the NTT COMWARE Group has continually developed solutions, together with our customers, that help create a more comfortable, more convenient society. While drawing on NTT Group synergies, we currently utilize IoT and AI to offer highly varied services that bring innovation to business and daily life.

Action Highlight 01

Auto Leasing Innovation with “Business Agent AI”

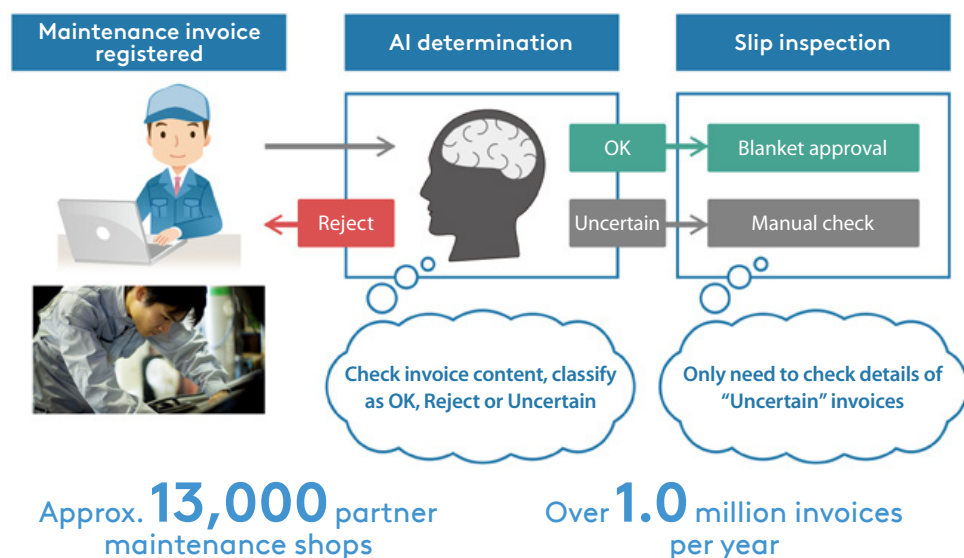
How to efficiently process enormous volumes of invoices and accounting slips is a common issue in a wide range of industries. Various attempts are therefore underway to utilize AI in order to increase efficiency and reduce labor requirements. NTT COMWARE, together with Nippon Car Solutions Co., Ltd. (NCS), has developed an AI-based system for automating the billing process*.

NCS receives and processes over one million invoice slips every year from its over 13,000 partner maintenance shops. Utilizing rule-based AI to check the invoices, which had previously been performed via visual inspection by experienced personnel, has not only improved productivity, which goes without saying, but also allowed personnel to focus on more in-depth reviews where necessary.

This “business agent AI” won the IT Award 2019, presented by the Japan Institute of Information Technology, a first for the auto leasing industry, and its further application and extension to other industries is drawing attention.

* The technology developed as business agent AI for inspection of vehicle invoice slips has been jointly patented with Nippon Car Solutions as of June 16, 2020.

Business Agent AI for Invoice Slip Inspection



Action Highlight 02

LIKEUP Provides Real-Time Information Relevant to User Behavior

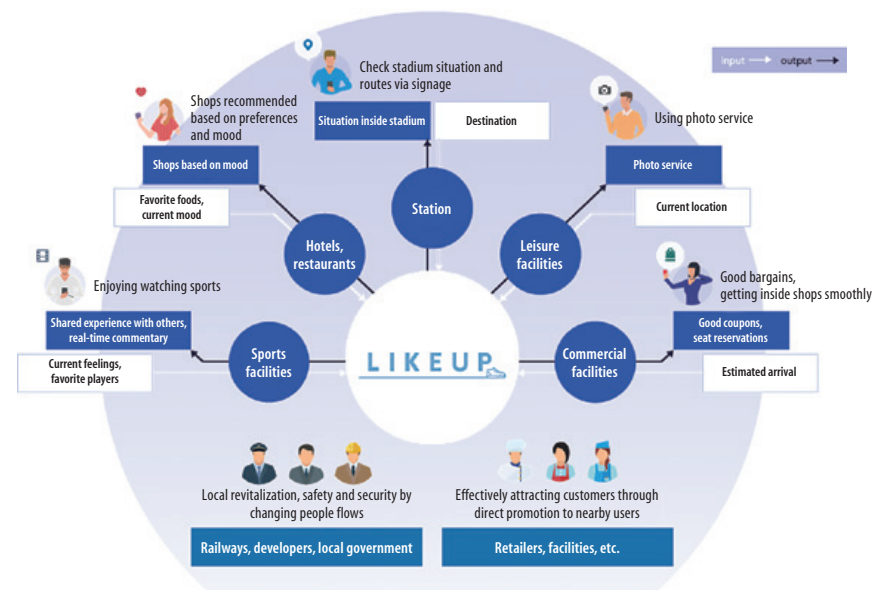
NTT COMWARE launched the LIKEUP service in June 2020 to help people avoid congestion and enjoy an optimal walking experience. The service guides behavior by predicting needs and actions based on user attributes, times, positions and surrounding conditions to provide sightseeing and transit information in real time that is relevant to users.

Utilizing a proprietary developed UX engine, LIKEUP helps alleviate congestion and create a pleasant bustle by improving area circulation in train stations and other facilities. The service drew rave reviews from users in trial testing and has been initially deployed along the Keiyo Line as a part of the Machibura*¹ Concierge service of Keiyo Line Plus, an app that provides “KEIYO TEAM6”² information. LIKEUP provides congestion predictions for Kaihinmakuhari Station as well as sightseeing, event and transit information for the surrounding area.

*¹ “Machibura” means walking about town

*² An area promotion initiative provided by JR Keiyo Line in partnership with six area sports teams (Bardral Urayasu, Chiba Jets Funabashi, Obic Seagulls, Chiba Lotte Marines, Chiba Zelva, and JEF United Chiba).

LIKEUP Service Vision





11 SUSTAINABLE CITIES
AND COMMUNITIES



SUSTAINABLE CITIES AND COMMUNITIES

Society's Expectations

SDG 11 emphasizes building sustainable, resilient infrastructure throughout society in order to ensure people can live safely and comfortably. There are many social issues that still need to be addressed, and social expectations continue to increase for the development of innovations that can help make improvements, as well as for rendering these innovations as services.

NTT COMWARE's Focus in Value Creation

The NTT COMWARE Group, as a member of the NTT Group, which provides information infrastructure, bears significant responsibility with respect to SDG 11. Actively utilizing AI and IoT technologies to create solutions that help strengthen the resilience of social infrastructure is, we believe, an important initiative alongside maintaining the stability and reliability of information infrastructure.

Action Highlight 03

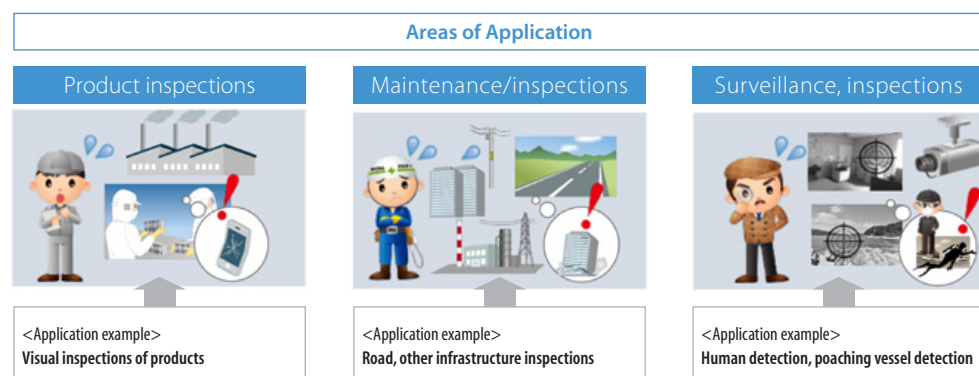
Image Recognition AI Deeptector® Expands Into Social Issues

NTT COMWARE has promoted solutions to social issues using AI with a focus on testing and inspections for the production activities and social infrastructure that help make society safe, secure and prosperous. Leading the way in this effort is Deeptector®.

Deeptector® is image recognition AI that uses deep learning. It takes the place of the human eye to assist with processes normally performed by visual inspection. As a solution for maintaining the quality of testing and inspections performed by people, as well as improving working conditions and securing manpower, business has expanded in particular for road defect testing and visual product inspections. Based on this track record, Deeptector® has been honored as a technology and service that greatly contributes to social solutions, winning the IT Award 2019* presented by the Japan Institute of Information Technology, and also the AI Division Semi-Grand Prix Award at the 13th ASPIC IoT, AI, Cloud Awards 2019, which is sponsored by the ASP-SaaS-IoT Cloud Consortium.

* Recipient of IT Award in the area of social problem solving

Deeptector®: Expanding Possibilities for Social Solutions



IT Award ceremony

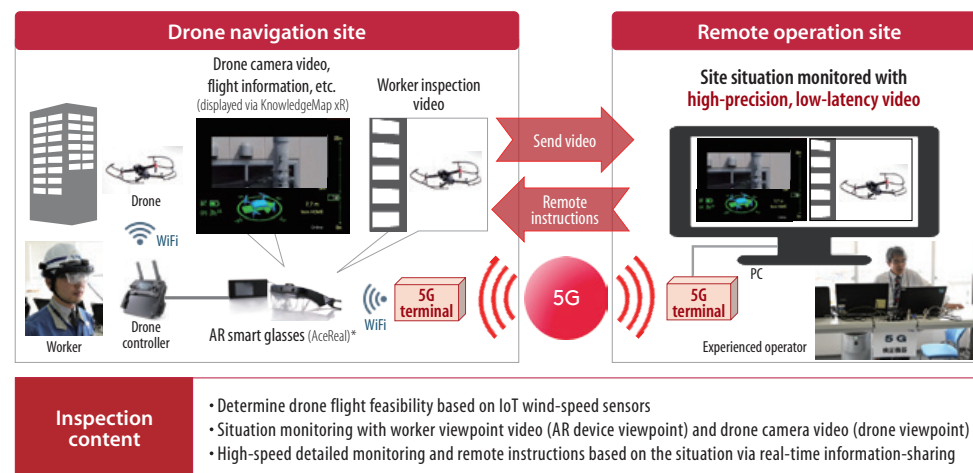
Action Highlight 04

Remote Inspection of Exterior Building Walls Using 5G/Drone/AR Smart Glasses System

With the start of 5G in Japan, the next-generation high-capacity, low-latency telecommunications standard, NTT DOCOMO, at the end of 2019, began remote inspections of exterior building walls utilizing drones and AR smart glasses on our own buildings as a part of verification testing for potential businesses using 5G. NTT COMWARE also participated in the same test using KnowledgeMap® xR, software for drone data acquisition and display.

Inspection work on high-rise structures like buildings and towers is highly important from the standpoint of social infrastructure maintenance, and because the work is dangerous, expectations are high for the system as a way to reduce labor requirements. The testing was conducted jointly by multiple companies at the same site, including a building inspection company, electronic device manufacturer and software developer. This served to further improve practical usability and heightened expectations for further productivity improvements in the form of parallel handling by multiple sites and simplified communication of required know-how.

Remote Building Wall Inspection: Testing Overview



* AceReal is a remote support solution that uses AR smart glasses (wearable computer with augmented reality (AR) technology) from SUNCORPORATION.

13 CLIMATE ACTION



Society's Expectations

Global warming is a major concern to all of humankind, but it is still not being addressed effectively. SDG 13 points to problems like the frequency of extreme weather events around the globe and calls for fast action to be taken. Given the nature of their activities, ICT companies consume electricity on a large scale, so their efforts to reduce carbon in their businesses, products and services receive much critical scrutiny.

CLIMATE ACTION

NTT COMWARE's Focus in Value Creation

As a leading ICT company, the NTT COMWARE Group has carried out medium-term initiatives under its "Green by ICT" slogan. We began at an early stage to strengthen measures for lowering business carbon and addressing climate change, considering this the responsibility of a company that contributes to society with network- and cloud-based solutions. We continue to promote these measures.

Action Highlight 05

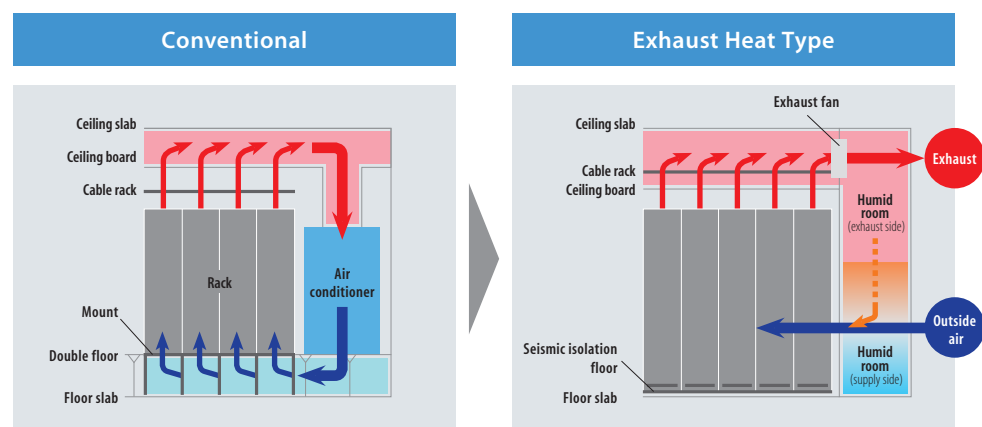
Promoting Lower-Carbon Data Centers

With cloud-based services having penetrated society, lowering the carbon of data centers is one of the most important tasks of an ICT company's environmental strategy.

NTT COMWARE has consistently focused on lowering the carbon of its data centers by promoting airflow control in server rooms, deploying advanced air conditioning management, and increasing the energy efficiency of data center devices. In particular, SmartCloud® data centers (exhaust heat type) use an air conditioning system that cools using only outside air—there is no cooling equipment—with server room humidity adjusted by airflow control alone. As a result, we have acquired expertise in energy-saving cloud data centers that lower air conditioning energy consumption to the full extent possible (achieved pPUE* of 1.1 or less as of 2012). We have applied this expertise to our housing data centers, visualizing temperature conditions, improving airflow, and automating air conditioning control, as we work to further reduce energy for data centers as a whole and improve the efficiency of their operations.

* Partial Power Usage Effectiveness: $pPUE = (\text{Data center floor's electricity consumption}) / (\text{Data center floor's ICT device electricity consumption})$. An indicator of a data center floor's electricity usage efficiency; the closer to 1, the better the efficiency.

Heat Exhaust Type / Conventional Type Comparison of Main Facilities



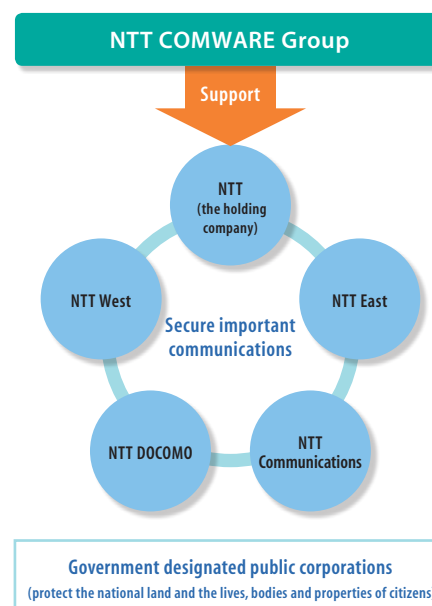
Action Highlight 06

Expedited Service Restoration Based on Weather Risk

As global warming has progressed, torrential rains, large typhoons and other extreme weather events have been occurring at a greater frequency around the world. In Japan in recent years, extreme weather has caused major damage, which has included essential utilities being cut off, and climate action has become an indispensable part of business risk management.

NTT COMWARE provides technical support for expedited service restoration on communications networks and actively deploys its expertise in further speeding up service restoration throughout the NTT Group. Specifically, we propose and implement expedited restoration measures based on previous experience and provide system failure information in real-time to NTT companies. As a result, we have been able to help quickly restore services even in large-scale natural disasters, like the torrential rains that afflicted western Japan in 2018 and the two major typhoons, Faxai and Hagibis, that hit in succession in 2019, contributing to the overall NTT Group mission of supporting social infrastructure.

NTT COMWARE Group Role in Disaster Recovery



Actual operations during an extreme weather event





5 GENDER
EQUALITY



GENDER EQUALITY

Society's Expectations

SDG 5 seeks to realize gender equality in society so that opportunities are provided to people to demonstrate their abilities regardless of personal attributes like gender. Japan, however, has not made adequate progress by global standards. The government amended the Act on Promotion of Women's Participation and Advancement in the Workplace in 2019 and now requires companies with at least 301 employees to contribute as leaders through more concrete PDCA cycle implementation and disclosure.

NTT COMWARE's Focus in Value Creation

The NTT COMWARE Group complies with laws and regulations while putting emphasis on the safety and health of workers and respect for diversity. Promoting women's participation and advancement in the workplace is one of our key action items in this area. To accomplish it, we are enhancing internal programs and conducting systematic awareness-raising for employees, promoting the realization of a dynamic society where diversity is respected.

Action Highlight 07

Diversity & Inclusion: Activities of Women's Empowerment Network (WAVE)

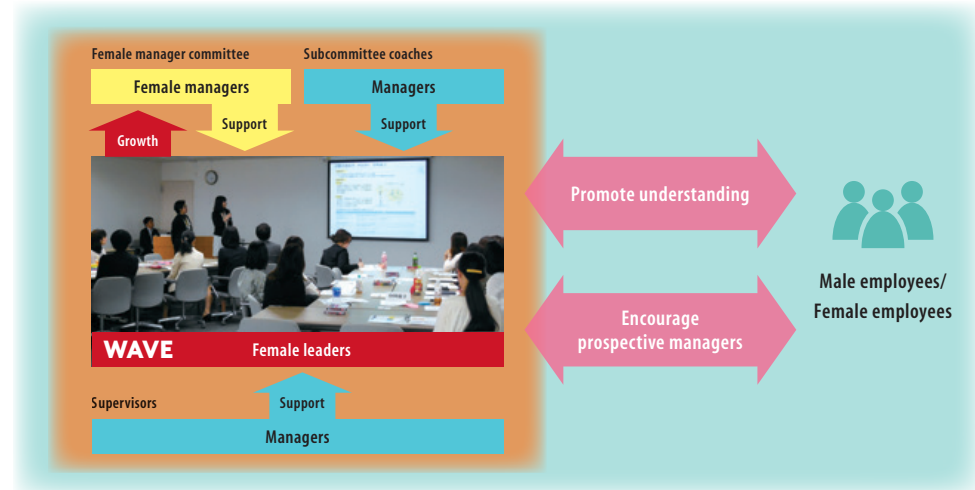
The NTT COMWARE Group has targeted 10.0% for its ratio of female managers by fiscal 2025, and to promote the target's achievement, activities are conducted through WAVE*, our women's empowerment promotion network. The activities are based in part on the revised Act on Promotion of Women's Participation and Advancement in the Workplace.

WAVE's members consist primarily of leader-level employees at each workplace (women employees a step before manager level). The members carry out activities while enlisting the people around them with the goal of helping establish a workplace environment where women can energetically excel while also striving to further their own careers.

In fiscal 2020, we actively held events and activities for the main purpose of promoting mutual understanding among employees. They included an "Experience Pregnancy" event in which participants donned a pregnancy-simulating jacket to experience something of what it is like to be pregnant. Roundtable discussions were also held with male employees who had gone on childcare leave, along with their partners and supervisors, and parts of the discussion were posted on the company's intranet.

* An abbreviation for "Woman Action Variety Enjoy." The name reflects the network's intention to generate various ideas from the perspective of women, joyfully take action and create a wave that engulfs colleagues.

WAVE System & Activities



Action Highlight 08

Cross-Industry Networking Event to Promote Insights

One characteristic of Japanese companies that contrasts with their Western counterparts is the well-established practice of long-term employment. Given this context, a cross-industry networking event was held in fiscal 2019 as a part of the WAVE network's activities, based on the idea that interacting with people outside the NTT Group could generate new insights. Interacting with women working at other companies in the same position as oneself serves to expand one's field of view and can be a springboard to further growth. At the event, participants reflected back on their careers using lifeline charts they had prepared beforehand and shared information, with personal experiences mixed in, on working styles and career development since joining their companies, in line with their individual life stages. The events served as an opportunity for all involved to gain new insights. Also, collaborative ideas drawing on their respective companies' strengths were proposed and presented, and various possibilities for collaboration by the companies were considered.

WAVE System & Activities



Various Other Daily Contributions—For Readers Who Want to Know More

The NTT COMWARE Group contributes to the SDGs through many initiatives beyond those introduced thus far.



Collaboration with Mealthy Meal Guidance Service

SDG 3: GOOD HEALTH AND WELL-BEING

NTT COMWARE's image recognition AI Deeptector® is currently used in a meal guidance service provided by Mealthy Inc. Users send photos of their meals via a smartphone app and Deeptector® analyzes their content. Based on the meal data provided, meal guidance based on the user's specific needs is provided by a licensed nutritionist. Use of our AI tool has raised nutritionists' work efficiency threefold and has made it possible for high-quality meal guidance to be provided to more people at a lower cost.



Sports Clinics with Affiliated Athletes

SDG 4: QUALITY EDUCATION

NTT COMWARE's roster of employees includes elite-level athletes in beach volleyball and boccia. Along with their daily duties, these athlete-employees also hold sports clinics on an outreach basis, primarily for elementary schools in the Tokyo metropolitan area.

In fiscal 2019, eight outreach clinics were held for beach volleyball (Tokyo) and boccia (Tokyo and Chiba) to provide children the opportunity to experience these sports and possibly aspire to become players themselves in the future. A total of 664 elementary school students got to experience the sports alongside our elite athletes.





follow® Cloud-based Work Management Service Provided Free of Charge

SDG 8: DECENT WORK AND ECONOMIC GROWTH

follow® is a cloud-based service that provides a number of work management functions, including attendance management, vacation/leave management, man-hours management, and travel expense management. In any environment with Internet connectivity, users can submit applications and issue approvals via a computer, smartphone or other device, making the service well-suited to management of new working styles.

The service was provided free of charge for up to six months to customers that applied between June and September 2020 in order to help society prevent the spread of COVID-19 and develop new working styles during the pandemic.



Advertisement for free, limited-time use of follow®



Seminar on Understanding Disability

SDG 10: REDUCED INEQUALITY

For people with disabilities to excel, whether in business or in sports, the understanding and cooperation of the people around them is a major source of strength. NTT COMWARE in November 2019 held its 2020 Companywide Sports Booster Event, which included a seminar on understanding disability as well as an interactive parasport session. Two parasport athletes welcomed participants, and everyone deepened their understanding of disability through interactions in the seminar and clinic.



Yoko Aoki, Blind Marathon Runner
NTT Claruty Corp.



Eliminating Food Waste with "COMWARE Pork"

SDG 12: RESPONSIBLE CONSUMPTION AND PRODUCTION

NTT COMWARE conducts ongoing initiatives that include appropriately sorting office waste products and, since fiscal 2008, recycling food waste. As a result we have achieved "zero emissions" status for regular waste products for 12 straight years since fiscal 2008.

Our food waste recycling involves processing food waste from the NTT COMWARE Group's cafeterias and turning it into animal feed. The animal feed is then used to raise pigs for "COMWARE Pork," which is served in the Group's employee cafeterias.



SUSTAINABLE DEVELOPMENT GOALS

Connect hearts, deepen social networks





Refer to the following sites for more details on voluntary contributions connected to our CSR targets, as well as on our efforts to contribute with customers through our products and services.



CSR Site

Provides information on the NTT COMWARE Group's CSR activities, including ongoing initiatives focused on our four main CSR themes.



<https://www.nttcom.co.jp/csr/> (Japanese site)



Service Profile Site

Introduces our many products and services for realizing a better society with customers and end-users.



<https://www.nttcom.co.jp/solution/> (Japanese site)



NTT COMWARE

* Honorifics omitted from names (of individuals, groups, public bodies, etc.) in principle.

* Deeptector, KnowledgeMap, SmartCloud, and "follow" are the registered trademarks of NTT COMWARE CORPORATION in Japan.

* AceReal is the registered trademark of SUNCORPORATION.

* Other names of companies, products, etc., may be the trademarks or registered trademarks of their respective companies.

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