

Our Mission/Our Core Beliefs

Corporate Message/Tagline/ Fundamental CSR Policy

Message from the President & CEO

Our Business and Sustainability

Special Feature: Collaborating with an NPO on Global CSR Activity



Contributions to Society



Contributions to the Global Environment



Respect for Human Resources



Continuous Strengthening of Corporate Governance

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Our Mission

Creating communication methods that open up new possibilities for people and our world.

We aim to create a world that maximizes the potential of people, organizations, and societies, giving them the opportunity to shine. In such a world, every person can lead rich and contented lives, cooperating in harmonious freedom. This is why we'll keep striving to create innovative, user-friendly communication methods that optimize the flow of information in our society.

Our Core Beliefs

Take the Initiative

Everyone has the potential to create.

Break out of your comfort zone and start challenging yourself in small ways. This is the first step toward creating something no one has imagined before.

Inspire Each Other

Engage in honest discussion for a better tomorrow.

Be sincere when debating with those who share your goals and respect their viewpoints. This will inspire a group synergy that helps you achieve unprecedented results.

Respond to Society's Needs

Pay attention to society and your clients to create the future they need.

Ask yourself whether you are truly doing what is best for your clients and society. It is through answering and then surpassing their expectations that you can create the future they want to see.

Developing NTT Communications' New Mission Statement

In 2019, NTT Communications laid out its new mission statement and core beliefs for achieving further progress in a time of great change.

President Shoji called on all employees to participate in a discussion about a new corporate mission, and the Mission Statement Project was subsequently launched in December 2018. Chosen from among all our employees, those involved in the project worked toward creating a new mission statement after a number of discussions with the president and management team members.



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Corporate Message

Connecting into Tomorrow

This message expresses our intention to constantly mediate between today and tomorrow, to continually create a desirable future while contributing to society today.

The term "tomorrow" expresses our determination to spearhead into the future by creating innovative and unprecedented communication methods.

Tagline

Go the Distance.

The tagline expresses our commitment to seek out and offer new value by going beyond time and distance and creating innovative and unprecedented communication methods.

There is also an underlying meaning to persevere, alluding to our resolution to surpass the expectations of our clients and society, be true to our core beliefs, and realize our mission with the integrity we have embraced for a long time.

Fundamental CSR Policy

As a partner that links the present to the future, the NTT Communications Group contributes to the realization of a safe, comfortable and abundant society by working to solve social issues and create new value for society on a global scale through ICT.



Contributions to Society

We shall contribute to the resolution of social issues in Japan and overseas through the development and provision of innovative ICT while providing highly reliable services for the sustained development of society. As a group of companies that provides key infrastructure that supports society and protects our lifestyles, we shall provide secure environments for communications that are fortified against cybersecurity threats and resilient to natural disasters.



Contributions to the Global Environment

We shall endeavor to solve environmental problems on a global scale through initiatives to use ICT to reduce the impact of society on the environment, while lightening the environmental burden of our business activities as a Group.



Respect for Human Resources

We shall create work environments that invigorate each and every employee, while respecting the diversity of our employees and other stakeholders. Moreover, we shall contribute to the creation of an abundant society by changing ourselves for the better and seeking to break free from our own limitations.



Continuous Strengthening of Corporate Governance

While valuing opportunities to communicate with all our stakeholders, we shall contribute to the sustainable development of society by engaging in business with high ethical standards and respect for human rights.



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We are committed to realizing a Smart World to resolve social issues and achieve the SDGs.

NTT Communications celebrated its 20th anniversary in July 2019. I would like to express my deepest gratitude to our customers and to all of those associated with our business for your support over the years that has made this possible.

NTT Communications was founded 20 years ago with the mission to transform long-distance, international and Internet communications. Since then, we have been opening new possibilities for individuals and companies by taking on the challenges of advanced communications infrastructure and ICT solutions as a leader in international communications, including long-distance and Internet services. Consequently, we are sustaining social development while achieving growth alongside our customers and stakeholders in Japan and abroad.

Today the Sustainable Development Goals (SDGs) are being upheld around the world, and momentum is building behind efforts for realizing a sustainable, diversified, and inclusive society. This in turn has led to higher expectations for ICT solutions as a decisive response to resolving social issues. On our part, we have sought to bring about a sustainable society by harnessing ICT in order to address social problems in various areas, in Japan and abroad, such as improving the energy efficiency of data centers and telecommunications buildings to reduce our carbon footprint and to realize a rich global environment, providing services based on Al technology to raise our productivity, and conducting feasibility studies to enhance educational quality and to create learning opportunities in the Philippines.

Furthermore, we will contribute to public health and wellbeing through <u>our participation in the</u> <u>deleteC project, which is intended to make cancer a curable disease</u>, as well as activities by the Shining Arcs rugby team.

We consider the current era, in which society stands at the threshold of a major sustainable transformation, as a second founding for NTT Communications, and we have therefore renewed our commitment to meeting public expectations by creating a new corporate culture under the slogan "REBORN."

Guided by our new corporate mission of "Creating communication methods that open up new possibilities for people and our world," we will continue to explore and create brand-new forms of communication that open additional opportunities for humankind and bring future happiness. We are resolved to serve society, contribute to the SDGs, and fulfill our responsibilities by rising to the challenge of realizing a Smart World as a "DX Enabler™" leading the digital transformation of society.

Tetsuya Shoji

President and CEO
NTT Communications Corporation

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Providing Services in Areas that Sustain Society

In our bid to become the partner of choice, we consistently provide cutting-edge services toward realizing the digital transformation (DX) of our customers. We support customer businesses with a world-class telecommunications network, including submarine cables, data centers, and IP backbone.

Global Tier 1** Provider

As a world-leading provider, we want to deliver the world's highest level of infrastructure.

Global High-Speed Communications Network

Between Asia and

Between Asia and Oceania

1,790₆₆

3,742_{Gbps}

(as of March 31, 2019)

We provide direct connections to major service providers in Asia, Oceania, North America, and Europe via the world's largest high-speed, large-capacity broadband network of 3,742 Gbps between Asia and Oceania. At the same time, we maintain reliable communication environments and stable operations based on single autonomous system (AS) networks and Service Level Agreements (SLA).

ICT Total Solutions for Businesses

+0+ 120-

(as of March 31, 201

We have established bases in over 120 locations in more than 40 countries and regions, staffed by experts on the ICT environment of each place.

Global Network Services

190+Countries/Regions
(as of March 31, 2019)

We provide global network services that extend across 190 countries and regions worldwide.

Personal Services

7,305,000 OCN Member

We provide the largest Internet connection service in Japan and promote society's conversion to ICT.

Global Data Center Service Offering the Highest Levels of Quality

20+

450,000m²+

Countries/Region

ierver Room Space

(as of March 31, 2019)

Our Nexcenter brand provides high-quality data center services across the globe by operating over 300 facilities based on unified standards, with more than 450,000 m² of server room space. We seek to unify our service specifications further, in collaboration with Group companies, in order to realize even greater customer convenience. Moreover, we are expanding our data center business, primarily in the United States, Europe, and the Asia-Pacific region including Japan, to respond more flexibly to the scope and speed of service that customers require.

Recognition for
Our Global Network Services

Leaders

Magic Quadrant for Network Services, Global

Our one-stop global network services exist because of our advanced technological capabilities and wealth of know-how unique to a telecommunications carrier. NTT Communications was ranked among global leaders in the 2019 Magic Quadrant for Network Services, Global, chosen by U.S.-based Gartner Inc.

- *1 Tier 1: An Internet service provider that controls its own worldwide broadband IP backbone and is capable of ensuring the quality of its network without depending on an upper tier provider.
 *2 Gartner Magic Quadrant for Network Services, Global, Neil Rickard, Bjarne Munch, Danellie Young, February 25, 2019, G00354862.
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Our Goals for Society

The NTT Communications Group is committed to addressing social issues through ICT. We believe that identifying the diverse potential risks inherent within the global society and striving to avoid or mitigate such risks are an essential part of our business activities. While we prepare for global risks as the responsibility of an ICT company that is sustained by stakeholders around the world, we also view this responsibility as an opportunity to focus on the four priority issues for realizing our goals for society.



Supporting the UN's SDGs as the NTT Group

In fiscal 2016, the NTT Group announced its support for the UN's Sustainable Development Goals (SDGs). As a member of the NTT Group, we also began promoting efforts to contribute to the SDGs in fiscal 2016. We have been training employees to raise awareness of CSR and the SDGs and will seek to achieve these goals through business activities, including the CSR Priority Activities linked to them.

SUSTAINABLE GALS

























Source: The Global Risk Report 2018, World Economic Forum

Environment

Abnormal weather

• Failure to mitigate or adapt to climate change

• Environmental disasters associated with human activity

• Destruction of biodiversity and ecosystems

Natural disasters

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Identification and Improvement of Materiality

As economic and social conditions continue to evolve, we will engage in CSR activities that meet society's expectations by inviting outside experts to regularly verify and update priority areas and activities under the Fundamental CSR Policy. Since fiscal 2017, based on the relevant SDGs for each priority area, we have identified actions that could contribute to the realization of each goal while also promoting PDCA cycles in each priority activity.



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Aiming to Create a Robust
Management Foundation Suitable
for a Leading ICT-based Company

Toru Maruoka Senior Executive Vice President



As a leading ICT company responsible for sustaining vital digital communication, NTT Communications believes it is important to live up to expectations by maintaining and strengthening a stable, long-term management foundation. To that end, we will thoroughly comply with laws, social norms, and Company rules while also practicing risk management and consistently pursuing honest business activities based on respect for human rights as an enterprise that exemplifies sound corporate ethics.

Furthermore, in view of the nature of our business, the establishment of our management foundation requires a clear focus on ensuring information security. We are aware that cyber terrorism, which has become increasingly sophisticated, poses a fundamental threat to society. The upcoming Tokyo 2020 Olympic and Paralympic Games will be an opportunity for the NTT Group to demonstrate a united effort in strengthening security management and developing security experts. Our mission as a company that is responsible for telecommunication services is to implement the utmost preparations based on a robust ICT platform.

As a company that sustains a safe and secure networked society, we will continue to forge everstronger relationships of trust with our stakeholders by laying and constructing a sustainable management foundation in harmony with society.

Relevant SDGs









Contributions to the Global Environment

Aiming for a Sustainable Environment that Ensures Harmony between Humans and the Earth

Hidemune Sugawara Executive Vice President



For example, advances in cloud computing are increasing demand for our data centers and telecommunications buildings, which constitute a key business area. We are managing energy to reduce power use and raise the efficiency of these facilities by automating the control of air conditioning and developing systems for visualizing the status of electricity, air conditioning, and temperature.

In January 2019, we relocated to a new headquarters that uses thermal sensors to improve the efficiency of air conditioning as well as LED and human sensors for more efficient lighting. We are thoroughly committed to practicing the 3Rs (reduce, reuse, and recycle) in our business activities while also seeking to expand our ICT solutions such as Al and IoT in manufacturing and other areas of business to realize a low-carbon society.

We will strive to develop a sustainable society through the unique functions of an ICT company to pass on a healthy global environment for generations to come.

Relevant SDGs













Promoting ICT Innovations to Solve Social Issues

Shuichi Sasakura Senior Vice President



As ICT spreads throughout society as a social infrastructure, expectations are growing for the application of ICT innovations to address social issues. NTT Communications will play its role in bringing about this future by ensuring the robustness of ICT infrastructure facilities and utilizing ICT to meet the expectations of customers and society as a whole.

Our goal is to realize a society in which everyone is interconnected through secure and comfortable ICT networks. As a member of the NTT Group, a Gold Partner in telecommunication services for the upcoming Tokyo 2020 Olympic and Paralympic Games, we are preparing to welcome visitors from around the world with Japanese-style "Omotenashi" hospitality based on an ICT infrastructure that draws upon the leading international communications services. I am convinced that the technology and experience we acquire in the process will become a major asset for us.

Furthermore, we are accelerating the pace of our initiatives for generating innovations that contribute to resolving social issues. For example, our Things Cloud® platform is used for introducing IoT to companies in diverse industries according to their needs and has significant potential for boosting productivity across all of society. We will consistently take on the challenge of innovation through ICT as our social mission and contribute to achieving the SDGs and realizing a sustainable society.

elevant DGs

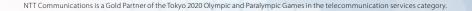














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Realizing Diverse Working Styles that Allow Everyone to Actively Participate

Kyoko Yamamoto, HR Senior Vice President



If we are to consistently meet the ever-diversifying needs of our customers in the fast-changing world of ICT, we must develop a collaborative, co-creative working environment for employees with varied backgrounds and personal attributes. The NTT Communications Group moved its headquarters in January 2019 to a new building with an advanced office environment to stimulate creativity under its Diversity & Inclusion strategy by encouraging interaction among diverse personnel across job

The layout and facilities of the new office environment were intentionally designed to enrich internal and external communication as an ideal stage for generating synergies through the exchange of diverse views and values. Meanwhile, we are seeking to support every employee by developing a workplace environment that facilitates the demonstration of individual personalities and mutual enhancement. This includes further expanding our remote working and flextime systems as well as introducing a new specialist employee system as an employment model for engineers involved in specialized work.

Looking ahead, we will steadfastly promote diversity and work style reform so that everyone can enthusiastically engage in their jobs by enriching the personal and professional dimensions of their lives. We will transform diversity into a competitive edge to accelerate personal growth and ultimately contribute to the development of a sustainable society.







Promoting CSR Activities Suitable for an ICT Company to Help Build a **Sustainable Society**

Tomohiro Ando. **Executive Vice President**

individuals.



The SDGs were adopted at a UN summit meeting in September 2015 as shared international objectives and have now entered our awareness as a social issue to be pursued by countries and organizations as well as

The Fundamental CSR Policy of the NTT Communications Group consists of four elements that also serve as our priority areas: society, the environment, human resources, and corporate governance, the last of which serves as the foundation of the first three. Each area is clearly expressed to ensure that employees have a sound understanding of the Company's direction and to encourage personal efforts to create value for society and confirm a thorough commitment to social responsibility. Since the NTT Group's declaration of support for the SDGs in fiscal 2016, we have pursued our initiatives by linking the Priority CSR Areas with relevant SDGs.

We harness advanced technologies to provide ICT solutions that may hold the key to resolving the complex, diverse issues faced by contemporary society such as climate change, a declining birthrate and an aging population, and information security. Today, as the world is coming together to create a better future, the joy of contributing to society through business activities holds significant value for our employees.

The NTT Communications Group will continue to achieve sustainable growth to fulfill its heavy responsibility as a leading ICT company responsible for vital social infrastructure. Under the Group's newly established mission statement, we work in concert to pursue CSR activities that meet public expectations and needs and contribute to creating a sustainable society.

SUSTAINABLE GALS DEVELOPMENT



































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Addressing Educational ****** Challenges in the Philippines

As part of its initiative to help resolve international social problems through business, NTT Communications kicked off activities in June 2018 for addressing educational challenges in the Philippines. Although the nation has shown remarkable economic growth, poverty remains a serious

> issue with roots in social inequality. Therefore, there is a pressing need to address educational issues to end this vicious cycle of poverty.









1 Underdeveloped Internet infrastructure in

2 Most households cannot pay school expenses

1 Low rates of advancement (44%) and

Unclear prospects after graduation

· Unclear prospects after graduation

2 Difficulty maintaining motivation to continue

· Low basic academic skills hamper self-driven learning

1 Most parents do not fully understand the value of

• Do not approve of attending school on weekends

• Long distance between home and school • Daily needs prevent the continuation of schooling

graduation (63%)

· Piecemeal progress in use of Wi-Fi, smartphones, and 2 Frequent typhoons and other natural disasters

Challenges in the Open High School Program of Cagayan de Oro City, the Philippines

- Shortage of OHSP instructional staff
- 2 Under-performing operations
- Excessive workloads
- · Insufficient follow-up for individual
- 3 Lack of motivation
- 4 Shortage of educational materials

Students

- University 1 Few opportunities to apply their education
 - 2 Difficulty finding a good job after graduation

Local Companies

- 1 Need to secure competent
- 2 Lack of information about the Philippine market

Applying ICT to Solve Educational Issues

The Republic of the Philippines is a nation in Southeast Asia comprising more than 7,000 islands. It has maintained relatively high economic growth among the major ASEAN countries, supported by its steady population growth and robust consumption. At the same time, it has been noted that the country must address the need to educate future human resources if it is to sustain its growth. In this context, the government launched major reforms of its educational system in 2017, including a transition from Asia's last remaining 10year academic system to the 12-year system that is the global standard. One of these efforts is the Open High School Program (OHSP), which provides weekend schooling for students who are unable to attend high school or have been forced by circumstances to give up their education. The program helps them to graduate from high school. However, it is primarily supported by teachers without pay and faces difficulties securing instructional staff and teaching materials.

Collaborating with an NPO that Operates in Southeast Asia

Meanwhile, NTT Communications has been aspiring to help resolve global social issues as a company broadly pursuing business in the global community. Since around April 2016, we have been exploring ways to act on our belief that we can apply our strengths in ICT to contribute to society.

Practical issues, however, have made it difficult for our employees to focus on overseas social problems steadfastly. Therefore, we sought to collaborate with a partner who could provide ample experience and knowledge in undertaking social contribution activities overseas and was also aligned with the principles and polices of our initiative. After meeting with about 40 organizations, we decided to collaborate with e-Education, an NPO that shared similar policies. e-Education has been actively addressing educational issues in 14 countries around the world including Southeast Asia.





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In June 2018, we launched a project to resolve educational issues by ICT in the Philippines in Cagayan de Oro City, one place where e-Education operates. The Philippines is a nation with which we have developed a favorable relationship through our business. Moreover, it is pursuing educational reforms as a country with the fastest economic growth in Asia.

NTT Communications invited employees to participate in this project. The 32 members selected were then divided into six groups, and each of these worked to come up with ICT solutions that could lead to improving educational outcomes in the Philippines and presented them to the local Department of Education. Also, at this time many hearings with the Department of Education in Cagayan de Oro City were being conducted by our partner, e-Education. And these revealed a shortage of teachers in the city due to the tendency of competent instructors to leave the island. Students, on their part, found it hard to remain motivated, as they were forced by economic and other circumstances to place priority on meeting daily needs or had difficulty traveling long distances to school. Consequently, the issues related to the educational environment proved to be extremely wide-ranging.

The six project groups took local circumstances into account as they developed solutions that paid close attention to daily needs and local community perspectives. Three proposals were ultimately selected in November 2018. Six members representing the three selected groups visited the Department of Education in February 2019 to present their proposals and exchange ideas.

Giving Concrete Shape to the **Proposals**

In June 2019, a presentation was made to the city's Department of Education under the theme "Beyond - Going beyond current issues toward the future," which sought to address specific issues such as classes, time, teaching materials, and distance by offering solutions based on ICT to create learning opportunities (see diagram). The presentation was very well received for its practical content, and a blueprint was drawn up to launch the project quickly by starting small in Cagayan de Oro City, with the expectation of gradually introducing the program to more schools as it demonstrated signs of success.

These efforts concluded the initiative's first phase, and NTT Communications has already added new members to embark on the second phase. With the continued cooperation of e-Education, we plan to conduct feasibility studies and confirm effectiveness to evaluate

and revise the model toward a full-scale launch in 2020. While many issues remain, such as developing the Internet infrastructure and creating an environment for motivating teachers, we intend to pursue the next step in close collaboration with the Department of Education, teachers, students, and other stakeholders to enhance our activities in line with local circumstances.

Our initiative for transcending national borders to improve the educational environment in the Philippines cannot be achieved without the willingness of each employee to take on challenges. Through this activity, NTT Communications will seek to expand the possibilities of ICT solutions and further contribute to resolving social issues.

VOICE

Leveraging Technology to Create a **Brighter Future for Children**

"I can't go to school on weekdays because I work from five in the morning to eight at night. But I really want to study, so I travel an hour each way to attend school just on Saturdays."These are the words of a fifteen-year-old student. I wonder how many of you were unable to go to school during the week because you had

In the Philippines, as many as 20% of children are unable to attend school for one reason or another. The application of technology may enable us to save many if not all of these children. I look forward to creating a future for children by applying the power of technology with NTT Communications, Japan's leading ICT company.



Takeru Sakai Country Manager e-Education

Romeo B. Aclo Project Focal Person Supervisor/Consultant

Specific Issues and Proposed Functions

Proposed Functions Value Provided by NTT Communications Issues Students are prevented from attending School due to housework, fatique, or Online supplementary Enables students to attend OHSP classes without classes having to travel to school, through distance learning ng to travel long distances Enables students to make a reservation for specific Students have few opportunities to review and confirm what is learned Online reservation of classes at their convenience so they can study what supplementary classes in class they did not understand Enables students to study at their own pace Textbooks are in short supply and preparation of educational material Digitalization of standard by promoting iPad-based learning of standard teaching materials se considerable burdens textbooks; also reduces the burden on teachers Provides consistent support for maintaining and Students are prevented from going to school due to inconvenient or Mobile classes improving academic ability by enabling students (remote classes) difficult commuting options who live far from schools to receive schooling



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Targeted

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CSR Priority Activities

infrastructure

- Innovation that supports a networked society
- Ensuring stable and reliable services as mission-critical infrastructure

Our Approach

- Robust network security for customers
- ◆ Continuous improvement in customer satisfaction
- Collaboration with suppliers
- Social contribution and fostering of communities





Applying ICT to Protect People and Companies from Natural Disasters and Providing Safe and Secure Environments

Humankind's social, economic, and environmental systems are rapidly changing, continuously increasing the contributions of ICT as well as public expectations. As an innovative corporate group, we are taking on the challenge of realizing a sustainable society.

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Takeru Miura Manager, Corporate Sales Department Solution Business Division NTT Resonant Incorporated



ICT Tools to Confirm the Safety of Individuals during Disasters

The massive damage caused by frequent natural disasters such as earthquakes and typhoons not only disrupts daily activities and corporate operations but also threatens our very lives.

NTT Resonant, Inc., a member of the NTT Communications Group, was reminded of the vital role of communications during the Great East Japan Earthquake of 2011 and renewed its efforts to provide disaster-prevention solutions for protecting lives and bolstering the ability of companies

to develop effective business continuity plans. We began in 2012 by working with NTT and national broadcaster NHK to set up the J-anpi site, which continues to operate today by searching for information on the safety of individuals. We facilitated the confirmation of safety of individuals even in areas where phone service had been disrupted. This we did by linking our service with disaster messaging boards operated by telecommunication carriers and safety information gathered by local governments. The number of J-anpi registrations has increased tenfold since the Kumamoto Earthquake in 2016.

Disaster Prevention Apps that Protect and Support People and Companies

In 2014, we used the contents and know-how of the goo portal site to launch the goo Bosai App, a free comprehensive disaster prevention portal app. Upon request from local governments, the app was customized to create specialized disaster prevention apps for local governments that gather information for specific regions, thereby contributing to the safety and security of local communities. We also launched a project to distribute disaster prevention information to signage systems at public facilities. In addition, we set up Disaster Response Management, a solution that combines the disaster prevention app with a Web-based system as a BCP measure for companies, and we assist in the continuation and recovery of operations in the event of a disaster.

We will continue to develop disaster prevention systems based on ICT toward our goal of turning disaster-prone Japan into the world's safest country.



Osaka City Disaster

Sukumo City Disaster

government emergency radio

system and conveys text-based

information, enabling people in

areas with poor radio reception

Prevention App

The app is linked to the

to receive information.

The app

of rivers and

Prevention App

J-anpi site

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Contributing to the SDGs through IoT

what lies ahead.

and Cloud Solutions



IoT has made it possible to collect data that could no be gathered in the past. By using the cloud, which enables storing and analyzing vast amounts of data without using our own server, we can generate new services, products, and ideas for using goods.

NTT Communications'

Actions toward the SDGs

The NTT Communications Group

contributes to achieving the SDGs by

making extensive use of ICT to provide innovative services while continuously

taking on challenges with a firm eye on



We are building an infrastructure for the quick delivery of disaster-related information to as many people as possible by utilizing disaster prevention apps and digital signage in towns. Once 5G is introduced, we will strive to provide services that lead to greater security and safety by utilizing this high-speed, large capacity and massive machine-type communication environment



We will contribute to realizing greater public security and safety based on advanced ICT. In addition to collaborations within the NTT Group. we will share information and issues with local governments and other companies to advance our initiatives for disaster prevention.





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A Sustainable Green Future with Abundance

Our Ambition
A society in harmony with nature, preserving the planet's abundance

- ◆ A low-carbon society with a light environmental footprint that thoroughly recycles resources
- ◆ A society that respects biodiversity and protects abundant natural resources

Targeted SDGs











Our Approach

- **⊠** Realizing a low-carbon future
- **☑** Implementing closed-loop recycling
- ✓ Planning a future of co-existing with nature

The reduction of CO₂ emissions has been hailed as a necessary means of addressing abnormal weather patterns around the world and to combat global warming. However, not enough has been done. With a pressing need to do more, the NTT Communications Group is moving proactively to deploy low-carbon technologies as a provider of services that utilize ICT equipment.

In order to leave future generations an abundant global environment, such as by promoting a closed-loop economy and by coexisting with nature, NTT Communications is also aggressively implementing a multitude of initiatives while fulfilling its responsibilities as a leading global ICT company.

CSR Priority Activities

- Realizing a low-carbon future
- ◆ Implementing closed-loop recycling
- Planning a future of co-existing with Nature



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Harnessing Deep Learning to Ensure Stable Production and Environmental Compatibility of Next-generation Plants

Expectations are rising for the use of ICT to bring about a low-carbon future. As a leading ICT company, we relentlessly strive to provide next-generation solutions one step ahead of the times.



Koji Ito

Senior Manager, Al Technical Unit, Technology Development

Handing Down Technologies at a Chemical Plant

The issue of energy conservation in manufacturing is important for the industry as well as for mitigating global climate change. In addition, the labor shortage caused by the declining birthrate and aging population has recently raised concerns over a decline in technological skills. Handing down technological know-how is a particularly challenging issue for controlling chemical plants where complex and varied chemical reactions take place that depend on the knowledge and experience of veteran engineers. To address this, we developed the Digital Twin for plants jointly with a measuring instrument manufacturer that applies deep learning, the core technology of Al. To state simply, this is a mechanism for simulating the behavior of a real plant by replicating its "twin" in digital space. It is an effort to apply deep learning to create a model from the massive amount of process data and identify the optimal parameters for controlling the plant.

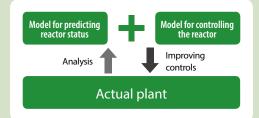
Saving Energy by Optimizing Plant Behavior

In March 2019, we simulated the chemical plant's behavior using its Digital Twin. We then ran an automatic search for the optimal parameter values out of approximately 2,500 patterns, which matched the values arrived at by an experienced consultant. This shows that the Digital Twin could be used to improve the controls of an actual plant.

In addition to optimizing operational behavior, the Al-based Digital Twin of the chemical plant can also be used to predict quality and detect signs of abnormalities. Since this leads to raising operational efficiency, the Digital Twin also provides advantages from the standpoint of building advanced energy management systems.

We plan to hone the results of our verification test further in order to enable the transfer of technology using Al and help bring about a low-carbon society.

Digital Twin of a Chemical Plant Based on Al



Realizing advanced energy management systems



Contributing to a low-carbon future

NTT Communications' / Actions toward the SDGs

The NTT Communications Group contributes to achieving the SDGs by making extensive use of ICT to provide innovative services while continuously taking on challenges with a firm eye on what lies ahead.

Contributing to SDGs by Realizing a Low-carbon Society through the Use of ICT



From a global perspective, we will focus on improving the energy efficiency of ICT-related equipment and plant facilities that place a significant burden on the environment and strive to preserve the global environment to pass on a green, healthy planet to the next generation.



We use solar power at telecommunications buildings and data centers in Tokyo. Looking ahead, we will continue to proactively use clean, renewable energies to reduce GHG emissions.



We are effectively applying deep learning to facilitate the predictive maintenance of mechanical parts in order to reduce waste by determining the optimal timing for replacing parts.



We are making an effort to preserve sustainable marine resources by performing environmental assessments prior to laying out a subsea communications cables and carrying out minesweeping upon construction as well as through our activities to preserve ecosystems such as corals.

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each other higher

- ◆ A society where diversity is respected in terms of individuality, attributes and beliefs
- ◆ A society where people can use their abilities to the fullest

Targeted





Our Approach

- ✓ Human resources development
- ✓ Creating workplaces where diversity thrives
- Maintaining and improving employee health

While carrying out the responsibilities of companies, employees independently aim for their own happiness and development and are partners that grow with those companies. At the NTT Communications Group, we have measures in place to nurture talented employees with a keen awareness of globalization to grow together with our employees. Over the past few years, attention worldwide has focused on diversity in management as more emphasis is placed on supporting the wellbeing of employees and turning diversity into a competitive advantage. As more women join the workforce and new working styles are adopted, NTT Communications is trying out various new measures, including personnel exchanges around the world.

CSR Priority Activities

- Human resources development
- Respect for Diversity and Equal Opportunities
- ◆ Maintaining and improving employee health

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Shohei Iwakura
Planning, Human Resources

Effectively Using Internal Assets to Invigorate and Facilitate Communication

Individuals with diverse personalities, attributes, and beliefs constitute the human resources of the company. We are implementing working style reform that respects each individual to create a diversified workplace environment in which every employee can fully demonstrate their talents and ultimately contribute to society.

Promoting Working Style Reform in Gradual, Consistent Steps

Vigorous, smooth communication is essential for developing a workplace environment in which employees with different backgrounds can respect each other and fully demonstrate their talents. Our Human Resources Department spearheads initiatives linking key internal assets with human resources to encourage creative ideas and generate new value through interaction among diverse personnel that transcends existing frameworks.

For example, we conduct in-house contests related to decoding security encryptions and IoT under the theme of "Humans × Technology," which draws competitors from Group companies to take on challenges during their free time. These efforts not only promote lateral relationships across business divisions, which had been a persistent challenge, but also lead to personal growth. Meanwhile, our "Humans × Rugby" projects have advanced health management and broadened exchanges between employees' families and the local community.

Realizing Diverse Working Styles for Diverse Human Resources

We are already seeing the results of measures that we implemented under the "Humans \times Office" concept, which took advantage of the relocation of our headquarters. We created a vast space on the 28th floor, dubbed the "Garage," with an area of 1,650 m² that is being used for events and seminars that employees themselves plan and organize to enhance their knowledge. As a result, more opportunities are available for employees to exchange information internally and externally, which raises expectations for ultimately generating new synergies.

We are working to realize a variety of working styles for diverse human resources by effectively deploying our assets with an emphasis on respecting human resources and through work style reform, including the expansion in our teleworking system, and diversity promotion through such actions as LGBT-themed events. In the process, we are invigorating the company as we seek new ways for achieving further success for our ICT solutions business that would contribute to a sustainable society.



Hands-on seminar by Digi Com



MaPaSunday



Stand-up meeting

NTT Communications' / Actions toward the SDGs

The NTT Communications Group contributes to achieving the SDGs by making extensive use of ICT to provide innovative services while continuously taking on challenges with a firm eye on what lies ahead.



As part of developing our workplace environment, we are creating and instilling a corporate culture in which a varied group of personnel can vigorously demonstrate their abilities through such efforts as holding events for more clearly understanding LGBT issues.



Acquiring broader knowledge and curiosity through active communication can increase employee motivation and enhance their abilities. In addition, providing support for a wide range of working styles, including teleworking, is beneficial to achieving a work-life balance and boosting morale.

Contributing to the SDGs by Developing the Office Environment



The office environment of NTT Communications is even open to other companies, which is conducive to generating further synergies. We will actively share current challenges with companies inside and outside the Group in our ongoing bid to create new solutions founded on advanced ICT services.



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Our Ambition

A society built on coexistence and mutual trust between stakeholders and companies

- ◆ A society where corporate actions are closely aligned with laws, regulations, and ethics
- $\blacklozenge \ A \ society \ that \ benefits \ from \ corporate \ activities \ and \ daily \ dialogue \ with \ stakeholders$

Targeted SDGs









Our Approach

- **☑** Efficiency in governance
- **✓** Thorough compliance
- **☑** Ensuring information security

As we continue to provide global ICT services that have become embedded in social infrastructure, we must ensure that our management foundation covers all the required elements, which are diverse. They include an efficient and nimble business organization, an open corporate culture, and a risk management system capable of flexibly responding to emergencies such as accidents and natural disasters. At the NTT Communications Group, we take a thorough, Group-wide approach to ensuring efficient governance and solid compliance in order to continue contributing to the development of a sustainable society. In recent years in particular, we have been working diligently to prevent and thwart cybercrime, which has become a serious social problem.

CSR Priority Activities

- ◆ Thorough Compliance ◆ Respect for human rights
- Risk management
- Ensuring Information Security



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Cultivating High-level Experts to Lead Our Cyber Security Measures in the ICT-based Society

Amid the global advance of the ICT-based society, threats to cyber security are rising for individuals and companies alike.

NTT Communications will help realize a sustainable society through the construction of a safe and secure network infrastructure.

193,010 person

315,270

56,050

2020 (Year)



Director, CSIRT Operations, Information Security Division

Establishing a New Company for Cultivating Top Security Experts

Japan's Ministry of Internal Affairs and Communications estimates that the current absolute lack of experts to handle security risks faces a deepening shortage that will exceed 190,000 by 2020. The need to address this is particularly urgent with regard to international sports events that are expected to become targets of cyber attacks.

In the fall of 2014, the NTT Group announced its policy to cultivate 10,000 security experts for the Group by 2020. NTT Communications has also been strengthening its efforts to cultivate security

Model for IT Personnel on Business Report on Model Businesses by IT Venture Firms Aimed at Cultivating and Securing Personnel for Promoting Innovation" (March 2016)

ity
ter Security Incident Response Team). In January 2019, we

2018

Source: Data compiled by the Ministry of Internal Affairs and Communications

based on: Ministry of Economy Trade and Industry's "Survey Results on Trends

in IT Personnel and Future Estimates" (June 2016); and Mizuho Information &

Research Institute, Inc. "Part 2: Development of a Future Supply and Demand

Estimates of Shortage in Information Security Experts

161,140

274,310

Shortage User companies

132,060

238,680

IT companies

Shortage

Number

of experts

experts, led by our internal CSIRT (Computer Security Incident Response Team). In January 2019, we worked to shorten the training period for high-level personnel by jointly establishing NF Laboratories Inc. with FFRI, Inc., which boasts advanced technologies in cyber security.

Addressing the Pressing Social Need to Counter the Threat of Cyber Attacks while also Expanding Business

In 2018, even prior to establishing the new company, we had been working with FFRI to develop content and cultivate lecturers for seminars on advanced security technology such as malware analysis and reverse engineering. NF Laboratories Inc. became fully operative in April 2019. We are currently training internal personnel to become experts capable of handling various security incidents, and we plan to expand the program to NTT Group companies and gather diverse personnel to accomplish this mission.

As various sectors express concern over the shortage of and difficulty in hiring security personnel, we will be required to continue producing security experts beyond 2020. In addition to consistently expanding our security services and solutions business, we will supply personnel to enterprises and government institutions as our contribution to resolving the pressing social issue of countering the threat of cyber attacks.

NTT Communications' / Actions toward the SDGs

The NTT Communications Group contributes to achieving the SDGs by making extensive use of ICT to provide innovative services while continuously taking on challenges with a firm eye on what lies ahead.



We seek to strengthen the foundation for a continuously evolving ICT industry by providing advanced security services to construct and guarantee the reliability of a safe and secure information communication network infrastructure while also supporting future innovations.



As a company that provides global IC services, we will protect the network infrastructure from increasingly advanced and sophisticated cyber attacks and serve as the deterrence to significantly reduce the risks to the sustainable growth of the ICT society.

Contributing to the SDGs by Strengthening Information Security



Our global ICT services and solutions founded on robust information security technologies sustain the daily operation of safe and secure networks that are accessible from anywhere in the world, thereby reducing the international digital divide.

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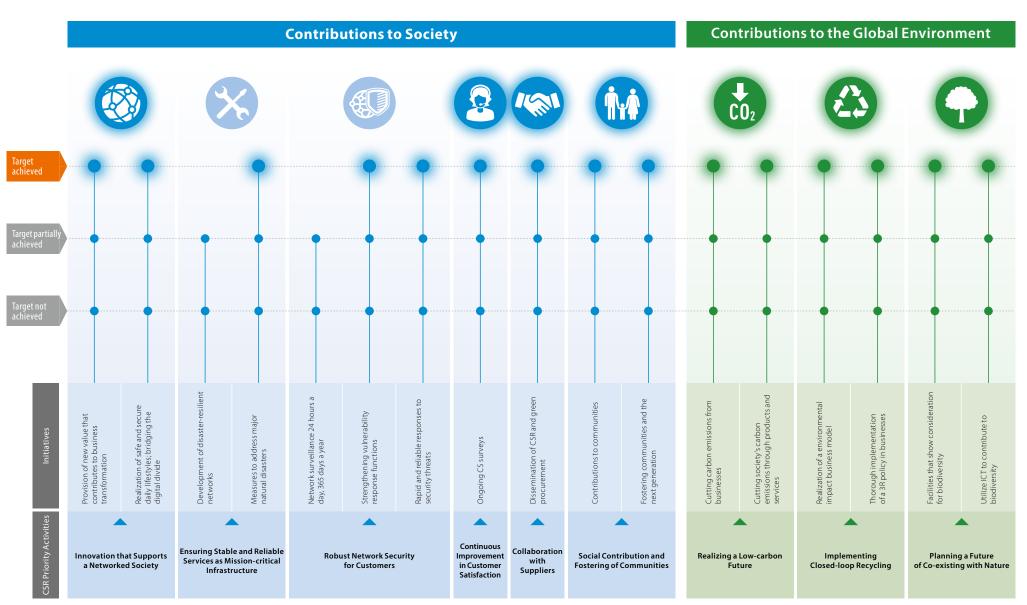
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Fiscal 2018 Targets and Results

A progress report on CSR activities pursued by the NTT Communications Group in fiscal 2018 is provided below.



The expanded version of this report provides more information on our activity results and targets for each priority activity.



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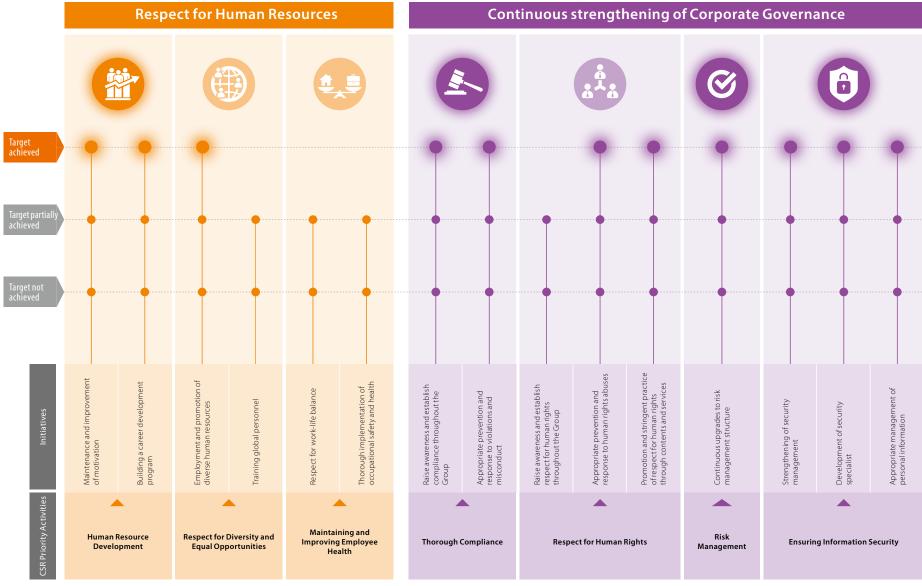
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The expanded version of this report provides more information on our activity results and targets for each priority activity.

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About the Reporting Media

CSR Website

The CSR website is updated with the latest information on a regular basis. Please access the site for information on the CSR activities of each NTT Communications Group company.



https://www.ntt.com/en/about-us/csr.html

PDF Report Downloads

The content of the NTT Communications Group CSR Report 2019 is presented in a comprehensive manner. The report consists of a highlight version and an expanded version. We aim to provide information effectively by catering to readers envisioned for each medium. As can be expected of a company that provides ICT services, the NTT Communications' CSR Report has been provided in electronic format since 2012. The highlight version presents the NTT Communications Group's more important CSR activities in a clear, straightforward manner for the general public. The expanded version presents numerous examples of the NTT Communications Group's CSR activities through a comprehensive look at specific CSR activities and detailed data.



https://www.ntt.com/en/about-us/csr/pdf/download.

Scope of the Report

This report covers the activities of NTT Communications Corporation and its Group companies, unless otherwise indicated

Period Covered

Fiscal 2018: April 1, 2018 to March 31, 2019 (Also contains information on activities conducted before or after this timeframe)

Issue Date Information

This report: October 2019 (Previous report: October 2018; next report scheduled for October 2020)

Reference Guidelines

GRI Sustainability Reporting Standards 2016/2018 Ministry of the Environment "Environmental Reporting Guidelines 2018" Ministry of the Environment "Environmental Accounting Guidelines 2005" ISO 26000: 2010 Guidelines on Social Responsibility

Corporate Overview (as of March 31, 2019)

Company Name

NTT Communications Corporation

Headquarters

Otemachi Place West Tower 2-3-1 Otemachi, Chiyoda-ku, Tokyo 100-8019,

Japan

Date Established

July 1, 1999

Paid-in Capital

230.9 billion yen

Number of **Employees** 6.150 (NTT Communications Group: 23.300)

Business

Domestic and international telecommunications services

Group Companies

in Japan

(as of October 1, 2019)

NTT Com Online Marketing Solutions Corporation, NTT Com Engineering Corporation, NTT Com CHEO Corporation, NTT Com Solutions Corporation, NTT Com Marketing Corporation, NTT Smart Trade Inc., NTTPC Communications, Inc., NTT World Engineering Marine Corporation, NTT Com DD Corporation, NTT Bizlink, Inc., NTT Resonant Inc., X-LISTING Co., Ltd., Phone Appli Inc., N. F. Laboratories, Inc.

Globally Recognized Achievements

- Became the first NTT Group company to receive the highest "Gold" rating in the CSR audit conducted by the French company EcoVadis.
- Recognized as the "Best Operator" at the 2018 World Communication Awards, which took place on October 31, 2018 in London, the United Kingdom.
- Received the Best Asian Telecom Carrier and Best International Wholesale Carrier awards at the Telecom Asia Awards 2019 on May 20, 2019.







