Data Book

NTT Group

CONTENTS

■ Related Information

NTT Group CSR website

https://www.ntt.co.jp/csr_e/
Provides the latest information on NTT Group CSR activities in a timely fashion. The latest information can be viewed on the site's homepage

NTT Investors website
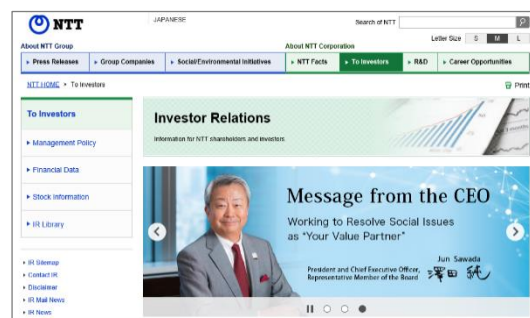
https://www.ntt.co.jp/ir/
・ Annual Report（Japanese & English）
  The Annual Report includes information on NTT Group's most important CSR initiatives in addition to the financial information that has been provided to date. Edited largely for shareholders and investors, it reports on and explains NTT Group's opportunities for growth and response to risks
・Securities Report（Japanese & English）
・Shareholders' Newsletter "NTTis"（Japanese only）
・Corporate Governance Report（Japanese & English）

■ Inquiries

Editorial Policy

The composition of this Data Book closely corresponds with items in the NTT Group CSR Priority Activities in order to report comprehensively and in an easy to understand manner to stakeholders, including investors who value ESG. While the report covers the status of NTT Group overall as much as possible, the scope of data is clearly noted when it is limited to a part of the Group.

For detailed information on the business strategies of NTT (hereinafter "the Company") and operations, please refer to Annual Report 2019. For details on ongoing efforts related to sustainability and CSR and achievements at NTT Group companies, please refer to the Sustainability Report or CSR report published separately by each company.

■ Reporting Period
 April 1, 2018 to March 31, 2019 (fiscal 2019)
  • Certain activities implemented after March 31, 2019 and the outlook for the future are also included.

■ Decision Making Process for Published Content
 To determine the content requirements for the publication, the CSR Committee, chaired by the representative director and senior executive vice president, discussed the basic annual policy for the Sustainability Report in March 2019, and then the senior vice presidents for Research and Development Planning and for General Affairs acted on their authority under the organizational rules to confirm and approve the content for the environmental and nonenvironmental sections, respectively.

■ Reference Guidelines
 ・ GRI Standards, Global Reporting Initiative
 ・ Environmental Reporting Guidelines 2012, Japan Ministry of the Environment
 ・ ISO 26000: Guidance on Social Responsibility

■ Legend
 ・ "Nippon Telegraph and Telephone Corporation" is abbreviated as "NTT," "Nippon Telegraph and Telephone East Corporation" as "NTT East" and "Nippon Telegraph and Telephone West Corporation" as "NTT West."
 ・ In principle, notations for status of incorporation have been omitted from the names of NTT Group companies.
 ・ Figures in the numerical tables have been rounded and therefore may not necessarily add up to the total figures.
 ・ The names of companies, products and services are the registered trademarks or trademarks of each company.

■ Third-Party Assurance
 NTT Group obtained third-party assurance from Sustainability Accounting Co., Ltd. with regard to indicators for the fiscal 2019 results of "Ensure Reliable Communications" and "Unite the Energies of Team NTT," and for the indicators of CO_2 emission volumes (Scopes 1, 2, and 3), waste disposal volumes, and water intake (clean water) within the fiscal 2019 results of "Protect the Global Environment," from the NTT Group CSR Priority Activities. (see page 009-010)

Scope of Disclosure

Domestic Group companies

(A) Main companies		
Nippon Telegraph and Telephone Corporation (NTT)		Companies held by NTT, operating in fields other than NTT's intrinsic businesses
Regional Communications Business	NTT East	NTT East Group
	NTT West	NTT West Group
Long Distance and International Communications Business	NTT Communications	NTT Communications Group
Mobile Communications Business	NTT DOCOMO	NTT DOCOMO Group
Data Communications Business	NTT DATA	NTT DATA Group
Other Businesses	NTT Facilities	NTT Facilities Group
	NTT COMWARE	NTT COMWARE Group

(A) Main companies

NTT, NTT East, NTT West, NTT Communications, NTT DOCOMO, NTT DATA, NTT Facilities, NTT COMWARE

(B) Domestic Group companies: 247 companies

(C) Domestic and overseas Group companies: 920 companies

(D) Main companies + operating companies

(Operating companies: 18 companies)

NTT East Group, 6 companies (NTT EAST-HOKKAIDO, NTT EAST-TOHOKU, NTT EAST-KANSHINETSU, NTT EAST MINAMIKANTO, NTT EAST SERVICE, NTT-ME)

NTT West Group, 5 companies (NTT NEOMEIT, NTT MARKETING ACT, NTT BUSINESS SOLUTIONS, NTT FIELDTECHNO, NTT BUSINESS ASSOCIE WEST)

NTT FACILITIES Group, 7 companies (NTT FACILITIES CHUO, NTT FACILITIES HOKKAIDO, NTT FACILITIES TOHOKU, NTT FACILITIES TOKAI, NTT FACILITIES KANSAI, NTT FACILITIES CHUGOKU, NTT FACILITIES KYUSHU)

(E) Companies subject to NTT Group plans to double the number of female managers

((D) + the companies below)

NTT Urban Development, NTT FINANCE, NTT BUSINESS ASSOCIE, NTT BUSINESS ASSOCIE EAST, NTT Electronics, NTT Advanced Technology, NTT LOGISCO, NTT ADVERTISING, NTT TechnoCross, InfoCom Research, NTT LEARNING SYSTEMS, NTT TRAVEL SERVICE, NTT CLARUTY

* In cases where the scope of environmental performance statistics has not been specifically stated, they refer to domestic companies.

Basic Information

NTT Group Formation

(As of March 31, 2019)

	NTT Group	Nippon Telegraph and Telephone Corporation (Holding Company)
Total Assets	¥22,295.1 billion	¥7,989 billion
Consolidated Operating Revenue	¥11,879.8 billion	¥750.7 billion
Consolidated Operating Income	¥1,693.8 billion	¥612.8 billion
Number of Employees	303,351	2,562
Consolidated Subsidiaries	919	-

	Mobile Communications Business	Regional Communications Business	Long Distance and International Communications Business	Data Communications Business	Other Businesses
Operating Revenues in billion yen	4,840.8	3,152.3	2,278.7	2,163.6	1,240.3
Operating Income in billion yen	1,013.6	360.7	100.1	147.7	85.6
Capital Investment in billion yen	593.7	541.0	244.3	179.2	138.7
R&D Expenses * in billion yen	91.0	82.7	18.0	15.1	102.5
Number of Employees	26,629	79,534	48,020	123,884	25,284
Consolidated Subsidiaries	103	45	370	306	95

* Intersegment transactions: ¥98 billion

List of Memberships

(As of September 30, 2019)

- Keidanren (Japan Business Federation, general incorporated association; vice chair)
- Telecommunications Carriers Association (incorporated association; chairman)
- Association of Radio Industries and Businesses (general incorporated association; director)
- Telecommunication Technology Committee (incorporated association; vice chairman)

- Tokyo Employers' Association (honorary chairman)
- ITU Association of Japan (general incorporated association; council member)
- ICT Ecology Guideline Council

Major M&A during the Past Year

- MagenTys Holdings Ltd. (UK)
  May 2018: NTT DATA EMEA Ltd., a subsidiary of NTT DATA, made MagenTys Holdings Ltd. a subsidiary. MagenTys Holdings Ltd. provides consulting services in the digital field.
- gen-ius dms GmbH (Germany)
  June 2018: NTT DATA EMEA Ltd., a subsidiary of NTT DATA, made gen-ius dms GmbH a subsidiary. gen-ius dms GmbH provides automotive dealer management systems.
- Sybit GmbH, (Germany)
  August 2018: NTT Data's subsidiary itelligence AG made Sybit GmbH a subsidiary with the aim of strengthening services, such as e-commerce, and Customer Relationship Management (CRM), which is an SAP strategic area.

NTT Group CSR Charter

NTT Group has been working to achieve sustained growth through the resolution of social issues by referring to the NTT Group CSR Charter as its basic principles. The charter consists of a statement of our commitment to corporate social responsibility, and the four CSR goals that outline specific priority aspects of our CSR activities.

CSR Message

We as the NTT Group will take initiatives in solving social issues through our business activities, as "Your Valued Partner", and will contribute to creating a safe, secure and sustainable society.

CSR Theme

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.

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

Protect Environment
We will reduce our environmental impact throughout our business, 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.

United NTT
We, as NTT, will always work with a high ethical perspective, respect for human rights and awareness of our partners as well as creating a safe working environment with respect for diversity and individual growth, and the creation of healthy communities.

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

NTT Group Initiatives toward Achieving the Sustainable Development Goals (SDGs)

NTT Group has worked to resolve issues in society and has contributed to the achievement of a sustainable society through products and services that utilize ICT. In recent years, however, global-scale societal issues have become more severe, making Group-wide initiatives to resolve these all the more important.

In response, NTT Group announced in September 2016 its endorsement of the UN's Sustainable Development Goals (SDGs). Our Group companies have identified the correlations between their businesses and the 17 goals of the SDGs, and are making efforts toward their achievement.

As an example, every year we hold the NTT Group CSR Conference to instill awareness of CSR in employees. There we identify correlations with the 17 goals of the SDGs, while Group companies share cases in which they have resolved societal issues through business activities, as superior CSR initiatives. Through this, we instill in employees a recognition that daily business activities and CSR are one and the same. In addition, we revised the training content to be based on SDGs, and are enhancing Group employees' awareness of the subject through e-learning.

We will continue building our momentum toward achieving the SDGs through a variety of initiatives. We will do our best to do so not only through the use of our own products and services, but also by realizing a smart world and Society 5.0 through collaboration with partners on technologies and knowledge

NTT Group's Material Issues

In revising the NTT Group CSR Charter and reviewing the CSR Priority Activities, we took the following steps based on the principles and processes regarding material issues in the GRI G4 Sustainability Reporting Guidelines.

3 STEPS for Materiality

STEP 1
Identify CSR Issues

We identified 41 CSR Issues based on due consideration of GRI and other guidelines, external assessment of ESG aspects and new social requirements such as the SDGs.

STEP 2
Assign Priorities

We assigned priorities to the CSR Issues identified in Step 1 based on the two axes of "relevance to stakeholders" and "relevance to NTT Group" to identify the 18 NTT Group CSR Priority Activities representing the materiality that drives our CSR efforts.

STEP 3
Confirm Validity

The validity of the CSR Priority Activities was confirmed by the Group CSR Committee and CSR Committees.

STEP 1 Identify CSR Issues

We identified 41 CSR Issues based on extensive consideration of various guidelines, including the GRI G4 and ISO 26000 (social responsibility) guidelines, external ESG assessments, such as the Dow Jones Sustainability Index (DJSI), as well as new issues related to sustainability, such as the SDGs.

External Assessment
- DJSI
- FTSE
- MSCI

External Environment
- SDGs
- IoT
- Big Data
- Cyber attacks

Guidelines
- GRI G4
- ISO 26000
- SASB

41 CSR Issues

Industry Benchmarks
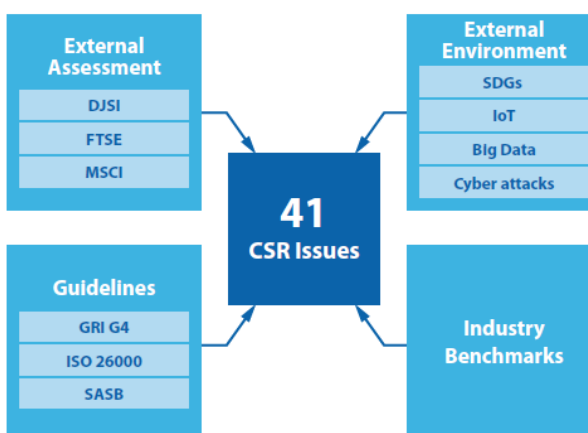
STEP 2 Assign Priorities

The 41 CSR Issues identified in Step 1 were categorized under the four CSR Goals of the NTT Group CSR Charter and their underlying foundations. The four CSR Goals were evaluated along the two axes of "relevance to stakeholders" and "relevance to NTT Group," and the results were mapped on the matrix to identify the NTT Group CSR Priority Activities.

In assessing priorities, we sought to reflect the expectations of a broad range of stakeholders by also taking into account the results of the NTT Group employee satisfaction survey and feedback from customers.

Activities categorized as the underlying foundations of the four CSR Goals have been positioned as activities requiring steadfast effort.

Enrich Society

High ▲

Relevance to Stakeholders

Pursue customer satisfaction ◯

Contribute to society
through ICT and data usage
Reinforce and globalize
research and development

Relevance to NTT Group   High

Protect Environment

High ▲

Relevance to Stakeholders

Use ICT to contribute to the environment ◯

◯ Reduce the environmental
impact of business operations

◯ Effectively
use resources

Relevance to NTT Group   High

Safety and Security

High ▲

Relevance to Stakeholders

◯ Personal
information
protection

Ensure stability
and reliability of
communications
services

Reinforce
information
security

Relevance to NTT Group   High

United NTT

High ▲

Relevance to Stakeholders

◯ Respect human rights

Reinforce value
chain management

◯ Ensure employee safety
/Promote health management

◯ Promote diversity

Create attractive workplaces

Promote a united
Group effort on
social contribution
activities

Relevance to NTT Group   High

Underlying Foundation of the Four Communication Activities

- Reinforce corporate governance
- Ensure diversity of directors
- Appropriateness and transparency of directors' compensation
- Establish sustainability governance
- Efforts to encourage long-term ownership of shares
- Risk management
- Formulate and comply with compliance guidelines

- Brand management
- Manage intellectual property
- Determine materiality and manage PDCA cycle
- Enhance reliability and disclosure of ESG data
- Control negative incidents and disclose information
- Engage with stakeholders
- Participate in various initiatives

STEP 3 Confirm Validity

The identified CSR Priority Activities were examined by the Group CSR Committee attended by the CSR Committee Chairpersons of major NTT Group companies and the CSR Committee chaired by the representative director and senior executive vice president and comprised of heads of each department and office. The committees confirmed the validity of the CSR Priority Activities based on how well they reflected the expectations of stakeholders and whether they covered all the issues that are of importance to NTT Group. Consequently, the following items were determined as new CSR Priority Activities.

Enrich Society
CSR Priority Activities
- Contribute to society through ICT and data usage
- Pursue customer satisfaction
- Reinforce and globalize research and development

Protect Environment
CSR Priority Activities
- Use ICT to contribute to the environment
- Reduce the environmental impact of business operations
- Effectively use resources

Safety and Security
CSR Priority Activities
- Reinforce information security
- Personal information protection
- Ensure stability and reliability of communications services

United NTT
CSR Priority Activities
- Promote diversity
- Respect for human rights
- Reinforce value chain management
- Ensure employee safety
- Promote health management
- Create attractive workplaces
- Promote a united Group effort on social contribution activities

Goals of CSR Priority Activities

NTT Group has established CSR Quantitative Indicators (KPI) based on the NTT Group CSR Priority Activities identified as material issues in order to promote CSR in a uniform manner across the entire Group.

CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators	KPI	Target Achievement FY	Relevant page
Enrich Society					
Contribute to society through ICT and data usage	Evolve into the B2B2X business model which uses digital services and data management	Number of B2B2X projects	100 projects	FY2022	019
	Leverage the characteristics of 5G to create new value with a broad range of partners	5G service-related indicators[1]	To be set at the commercialization stage		
	Promote personalization to support changing lifestyles	Number of places where payments can be made and points can be used[1]	Two million places	FY2022	
	Provide ICT services available for a broad range of customers, including the elderly and persons with disabilities	Number of UD-capable products and services provided	Expand	-	
Pursue customer satisfaction	Provide high value-added products and services and fine-tuned support	Reductions in waiting and customer service times at DOCOMO shops[1]	Decrease by half compared to FY2018	-	021
		Number of improvements made based on suggestions from customers	More than in the previous fiscal year	-	
		Response rates at our call centers	Better than in the previous fiscal year	-	
Reinforce and globalize research and development	Globalize and expand the competitiveness of research and development to generate world bests, world firsts, and amazing results	Number of patent applications	More than in the previous fiscal year	-	022
		Number of academic papers published outside the company	More than in the previous fiscal year	-	
		Number of successful practical applications[1]	More than in the previous fiscal year	-	
Protect Environment					
Use ICT to contribute to the environment	While reducing CO_2 emissions of the Company, contribute to the reduction of CO_2 emissions of all society, including value chains, through the utilization of ICT	Amount of contribution to the reduction of CO_2 emissions of all society	At least 10 times the Company's emissions	FY2031	039
Reduce the environmental impact of business operations	Improve power efficiency to reduce the environmental impact of business operations	Power efficiency of communications services (power efficiency per data transmission)	At least 10 times higher than in FY2014	FY2031	039
			At least two times higher than in FY2018 [1]	FY2026	
		Ratio of EV adoption in Japan[1]	100% 50%	FY2031 FY2026	
Effectively use resources	Control the final disposal ratio of waste and work toward the effective use of resources	Final disposal ratio of waste	under 1%	FY2031	044
Safety and Security					
Reinforce information security	Train security experts	Number of security experts	-	-	052
Personal information protection	Prevent leaks of personal information	Number of incidents of personal information leaks	0	-	055
Ensure stability and reliability of communications services	Provide stable communications services free of major communications problems	Stable service provision rate	99.99%	-	057
		Number of major accidents	0	-	

CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators	KPI	Target Achievement FY	Relevant page
United NTT					
Promote diversity	Aggressively promote the active participation of women	Ratio of female managers	6.0%	FY2021	061
	Expand employment of people with disabilities	Employment rate of people with disabilities*2,*3	2.2%	-	
Respect for human rights	Conduct business activities with respect for human rights at all business locations by introducing the United Nations Guiding Principles on Business and Human Rights (Ruggie Framework) and other international principles	Number of confirmed human rights violations	0	-	063
		Percentage of participation in training concerning human rights*4	More than in the previous fiscal year	-	
Reinforce value chain management	Appropriate management of environmental and social risks, including value chains	Number of confirmed high-risk suppliers	0	-	066
Ensure employee safety	Enhance safety measures and the safety mindset of employees in order to prevent accidents causing injury or death and industrial accidents	Number of industrial accidents	0	-	069
		Number of accidents causing injury or death during construction work *5	0	-	
Promote health management	Create an environment that raises each individual employee's motivation and dynamism while enabling them to continue to work healthily and energetically	Implementation rate of specified health guidance	31%	-	070
		Ratio of non-smokers*1	79%	-	
Create attractive workplaces	Provide workplaces where employees can work with good spirits	Employee satisfaction	Better than in the previous fiscal year	-	072
Promote a united Group effort on social contribution activities	Employees actively participate in volunteer activities	Number of times employees participated in social contribution activities	More than in the previous fiscal year	-	076
		Number of times employees participated in activities through the Group's internal volunteer site*1 [Number of people registered]	2,000/year [10,000]	- [FY2021]	

*1 Newly established in fiscal 2020
*2 Results as of June 1 of the following year
*3 45.5 or more employees
*4 Includes e-learning and other similar types of training
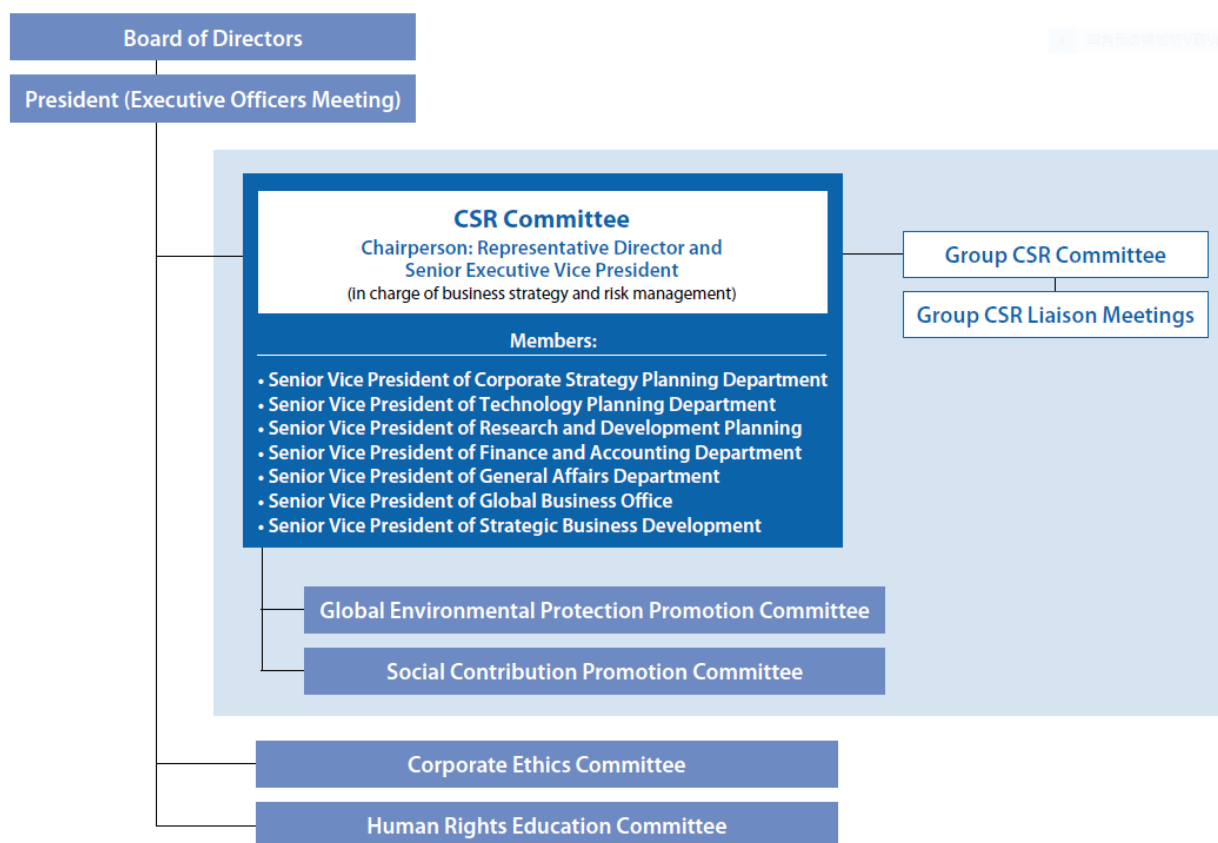*5 Construction by partner companies and directly managed construction

CSR Management

CSR Management System

In fiscal 2006, NTT established the CSR Committee, under the Executive Officers Meeting and chaired by the representative director and senior executive vice president, to ensure the sustained and appropriate implementation of CSR management, including economic, environmental and social themes. The committee meets at least once a year to discuss and formulate the Group's basic CSR strategy, initiatives and measures, as well as to determine the content of information disclosures. In addition, two internal committees have been established to cover individual themes: the Global Environmental Protection Promotion Committee and Social Contribution Promotion Committee.
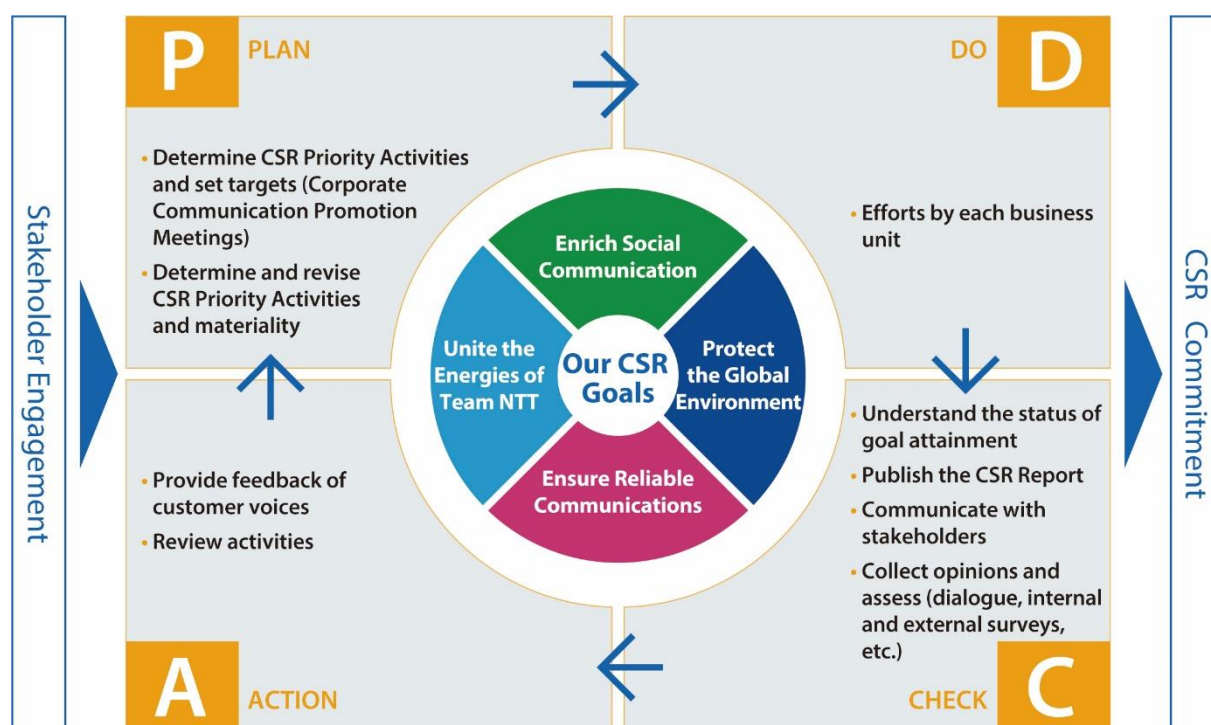
Also, since fiscal 2016, we have carried out Group CSR management by holding meetings of the Group CSR Committee (chairperson: representative director and senior executive vice president) and comprising chief CSR officers (senior executive vice presidents and the executive vice presidents of NTT Group's eight major companies in Japan). In addition, CSR promotion officers at each company hold Group CSR Liaison Meetings on a regular basis to share common challenges and successful examples from each Group company and to monitor progress on the implementation of our CSR Priority Activities with respect to PDCA cycles and further promote a sense of unity across the Group.

In fiscal 2019, NTT declared that "NTT Group's business operations = CSR" and that we will "be a Group who resolves social issues through business operation" in the NTT Group Medium-Term Management Strategy "Your Value Partner 2025." We will work to realize sustainable improvement in corporate value with CSR promotion at the core of Group management.
NTT Group Medium-Term Management Strategy   https://www.ntt.co.jp/ir/library_e/presentation/2018/181106e_2.pdf

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Board of Directors

President (Executive Officers Meeting)

                    CSR Committee                              Group CSR Committee
         Chairperson: Representative Director and
             Senior Executive Vice President                  Group CSR Liaison Meetings
         (in charge of business strategy and risk management)

                         Members:
         • Senior Vice President of Corporate Strategy Planning Department
         • Senior Vice President of Technology Planning Department
         • Senior Vice President of Research and Development Planning
         • Senior Vice President of Finance and Accounting Department
         • Senior Vice President of General Affairs Department
         • Senior Vice President of Global Business Office
         • Senior Vice President of Strategic Business Development

              Global Environmental Protection Promotion Committee

              Social Contribution Promotion Committee

         Corporate Ethics Committee

         Human Rights Education Committee
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NTT Group's PDCA Cycle for Promoting CSR

NTT Group CSR Conferences

In order to share superior CSR initiatives horizontally across NTT Group, we have held the NTT Group CSR Conference every year since fiscal 2014. This initiative involves having each operating company implement various measures in line with the CSR Priority Activities that are set for the entire Group each year, monitor these using KPI, and then announce their results in a conference setting. Furthermore, in addition to the best measures being commended as "superior CSR measures" at the conference, the single best measure is also awarded a President's CSR Award by the NTT Group Presidents' Meeting.

In February 2019, the conference for the fiscal year ended March 31, 2019 was held, the sixth such conference, and it was attended by 240 employees, including board members from each Group company. The conference opened with an address by Senior Executive Vice President Akira Shimada, who explained one of the visions of the Group's new Medium Term Management Plan, saying, "Solving society's problems through business activities will contribute to a smart world and achieve the SDGs." He followed this by declaring, "Our keywords are digital transformation and CSR."

Next, the personnel responsible for the superior CSR measures, which had been selected in advance from entries from Group companies in Japan and overseas, gave presentations about their CSR measures. There were six measures in the CSV section and five measures in the social contribution section. Alongside Group companies from Japan, both sections featured participation by three NTT DATA Group companies from overseas and Dimension Data, who also joined in last year. This resulted in a conference that had a real global flavor.

This year also featured a talk by sustainability management consultant Peter D. Pedersen. Mr. Pedersen talked about issues including the increase in the global population and the problem of plastics in the oceans. He also shared his expectations of the NTT Group, saying, "It is becoming crucial for companies to address sustainability in their management strategies."

In a survey conducted after the conference, nearly all participants answered that their understanding of CSR had deepened, suggesting the time spent was meaningful for raising CSR awareness among employees. In addition to holding the conference in the next fiscal year and beyond, we also aim to further spread CSR awareness among employees by improving the content of initiatives and enhancing measures that involve employee participation.

NTT Group CSR Conference https://www.ntt.co.jp/csr_e/groupcsr/conferences.html
Superior CSR Initiatives https://www.ntt.co.jp/csr_e/sustainability_action/index.html

Stakeholder Engagement

The Fundamental Principle

NTT Group is guided by the NTT Group CSR Charter in our goal of working to solve social issues through our business and realize a sustainable society. As a global conglomerate with an extensive and complex wide-ranging value chain, we provide products and services through our operations which impact well beyond those stakeholders in immediate contact with us. However, these stakeholders have a wide variety of needs and expectations regarding our operations. Stakeholder engagements serve as our way to understand and take into consideration the needs and expectations of our stakeholders in the way we conduct our business. Stakeholder input, particularly on social and environmental issues, can help to improve our competitiveness and accountability, while guaranteeing our social license to conduct operations in our various business regions.

Engagements with stakeholders form the building blocks of trust-based, value-generating relationships. In order to properly develop these relationships, it is essential to have a global, strategic approach to stakeholder engagements. These guidelines, which are based in part on the AA1000 Stakeholder Engagement Standard (AA1000SES) and AA1000 Account Ability Principles Standard (AA1000APS), cover all of our worldwide operations, and have been created to assist those in all Group companies and subsidiaries facilitating stakeholder engagements, and ensure consistency globally in all of our engagement processes. In doing so, we aim to promote effective, efficient, and ultimately value-creating engagements between NTT Group and its stakeholders. It goes without saying that all engagements shall be conducted according to relevant laws, regulations and legal requirements.

Generally speaking, engagements should allow NTT Group to:
- identify emerging environmental/social trends and reflect them in strategy formulation
- identify and develop countermeasures for potential risks
- manage our brand reputation more closely
- identify opportunities for potential new businesses, collaboration and innovation
- improve community relations and support for operations, in particular by involving stakeholders in decisions to ensure their needs are taken into consideration
- improve our understanding of sensitive issues and of stakeholders' opinions of us
- make more sustainable business decisions based on stakeholder input

Engagements should also allow stakeholders to:
- better understand NTT Group's strategy and projects, including the business context of individual operations
- provide feedback regarding their needs and expectations

Before the Engagement

In advance of any engagement, the purpose, scope, ownership, target, level and methods of the engagement should be determined. An assessment of the potential risks associated with engaging with specific stakeholders should also be conducted.
- The purpose refers to the objective of engaging with the relevant stakeholders.
- The scope refers to the subject matter of the engagement, the parts of the company and organization to be involved in the engagement, and the time frame of the engagement. This should also include an indication of the expected resources and capabilities required of the company.

However, the purpose and scope may require the input of stakeholders and as such may be subject to change as appropriate during the course of the engagement.
- The ownership of the engagement refers to the employee (s) within the organization deemed to have overall responsibility for planning and carrying out the engagement.
- The target refers to the relevant stakeholder groups who are to be the target of the engagement. These stakeholder groups should be identified and prioritized taking into account the following:
  - Stakeholders' interests and responsibilities
  - Stakeholders' diversity of expertise and capacity to engage
  - Stakeholders' level of influence
  - Stakeholders' willingness to engage with NTT Group
  - Stakeholders' dependency on NTT Group
  - Value to NTT Group of engagement with the specific stakeholder
  - Risk to NTT Group of engagement with the specific stakeholder

Given the pace at which industries and business environments can change, stakeholder mapping should be conducted on a regular basis to ensure relevance and value to NTT Group. The maps created can be used in preparation for each engagement to help identify and prioritize stakeholders relevant to each engagement.

The Level and Methods of Engagement can be Classified According to the Following Categories:

Level of engagement	Examples of engagement methods
Monitor	Tracking of media and one-way communications to the company
Inform	Provision of information from the company to stakeholders through letters, bulletins, websites, speeches, reports, etc., with no invitation to respond
Consult	Two-way exchange of information between the company and stakeholders through surveys, focus groups, workshops, etc., with an expectation of responses from both sides
Involve	Two-way exchange of information between the company and stakeholders, with stakeholders more actively involved in decision-making, through establishment of advisory panels or multi-stakeholder dialogues
Collaborate	Joint ventures and partnerships on specific projects

Risks of engagement with specific stakeholders should also be assessed. Potential risks may include an unwillingness to engage on the part of stakeholders; disruptive stakeholders; creation of unrealistic and unfulfillable expectations of the company on the part of stakeholders; and inter-stakeholder conflicts. These could potentially result in criticism of the company and damage to the company's reputation; a waste of the company's resources.

During the Engagement

Once the engagement is underway, the expectations of both sides regarding the respective inputs and outputs of the engagement should be discussed and established. In particular, this refers to:

· Levels of contribution and clear definition of roles of participants
· Details of the process, including timelines and methods
· Provision of instructions and required materials in good time for participation in and meaningful contribution to the engagement process
· Boundaries of disclosure of required information, including confidentiality requirements
· Communication of results of the engagement

Some of the above may of course require revision of original plans for the stakeholder engagement as made by the company. Any such revisions should be made taking into account the original intentions of the company as well as the requirements of participating stakeholders. Efforts should also be made to ensure a balanced participation from all stakeholders, especially in the case of multi-stakeholder events from the perspective of both minimizing risk and maximizing value to the company.

After the Engagement

The first priority after concluding the engagement should be the communication of the results of the engagement, both internally and to participating stakeholders, and externally to the wider public where necessary, through website and/or report publication. Such communication should include an indication of the purpose, scope, method and participants of the engagement; a summary of the content, including issues and concerns raised during the process; and the company's response to the outcomes of the engagement.

It is also important to conduct both an evaluation of the outcome of the engagement, and a review of the engagement process itself, in order to improve the efficiency and outputs of future engagements. The evaluation of the outputs should include the development of some indicators (KPIs) to assess the value of the engagement and its results.

This review should be conducted internally. Regarding the review of the engagement process itself, an internal review should be conducted and feedback should be sought from participating stakeholders regarding how they felt about their involvement, and a plan for improvement should be developed based on the results of these.

Identifying Stakeholders

Our stakeholders are organizations or individuals who have an interest, in one way or another, in the business activities or decision making of NTT Group. Major stakeholders of NTT Group include customers (individuals and corporations), shareholders and investors, employees (employees, their families and retired employees), local communities, business partners, ICT companies and industry associations, and, central government and administrative agencies.

NTT Group will fulfill its responsibilities and the expectations of its various stakeholders related to these businesses.

Customers (Corporations and Individuals)

All customers, both corporate and individual, who use services provided by NTT Group

NTT's Approach	**Methods of Engagement (examples)**	**Why We Engage**
As we strive to be chosen as "Your Value Partner," each individual employee will strive for an even higher awareness of CSR to provide safe, secure services that are high in quality and convenient from the customer's standpoint.	· Customer information service · Customer satisfaction surveys · Website, social media · Annual reports	NTT Group endeavors to enhance customer satisfaction and become "Your Value Partner" for our customers by understanding their needs and standpoints in order to provide higher quality services and products.

Shareholders and Investors

Individual and institutional investors including the shareholders and creditors of NTT Group

NTT's Approach	**Methods of Engagement (examples)**	**Why We Engage**
We will return profits to shareholders while maintaining a sound financial standing and enhancing our corporate value. We will also endeavor to disclose information related to the Group in a timely, appropriate and fair manner.	· General Meeting of Shareholders, earnings reports · Explanatory presentation for individual investors · Explanatory presentation for institutional investors · Annual reports	We endeavor to disclose information in a timely, appropriate and fair manner to return solid profits to shareholders while maintaining a sound financial standing and enhancing our corporate value.

Employees (Employees, Their Families and Retired Employees)

Employees who work at NTT Group and retired employees who support NTT Group's CSR ideals

NTT's Approach	**Methods of Engagement (examples)**	**Why We Engage**
We will pursue various employee initiatives to create safe and healthy workplaces in which everyone can realize their full potential and be rewarded in their work and daily lives. We will also value communication with retired employees.	· Employee satisfaction surveys · Regular interviews · Dialogue between labor and management · Corporate ethics helplines · CSR Conference	We create safe and healthy workplaces for our employees and support their daily lives so that each individual employee can realize their full potential and carry out their work with a strong awareness of CSR.

Local Communities

People in local communities who are connected to us through the core businesses of NTT Group companies

NTT's Approach	**Methods of Engagement (examples)**	**Why We Engage**
We will advance alongside local communities by implementing social contributions and disaster countermeasures through our ICT business.	· Support and collaboration through social contribution activities · Negotiations with local residents on construction work, system development and other activities · Support through donations and sponsorships	We seek to contribute to the further development of a flourishing and vibrant community and to understand and identify the issues faced by local communities in order to implement social contributions and disaster countermeasures through our ICT business.

Business Partners

Business partners who offer their cooperation in various ways as NTT Group provides its services

NTT's Approach	**Methods of Engagement (examples)**	**Why We Engage**
We will seek to work together to create and implement services that address a variety of social issues.	· Inquiry forms · Disclosure of procurement policies and guidelines · Questionnaires of suppliers · Briefing for suppliers	By procuring products with due consideration to the environment and human rights, and by forging partnerships based on fairness, we will fulfill our social responsibilities as a company and achieve sustainable growth alongside our business partners.

ICT Companies and Industry Associations

Other ICT companies and people in industry associations who are striving to develop Japan's information and telecommunications

NTT's Approach	**Methods of Engagement (examples)**	**Why We Engage**
We will engage in discussions on the direction and initiatives for the information and telecommunications industry, not only in Japan but from a global perspective, and seek to address diverse social issues together.	· Participation in industry associations and related initiatives · Participation in conferences	We will engage in discussions on the direction and initiatives for the information and telecommunications industry. By doing this, we will invigorate the entire industry and contribute to society by promoting development and progress in information and telecommunications.

Central Government and Administrative Agencies

Central and local governments and administrative agencies that make policy decisions on information and telecommunications, employment and the economy, the environment, and other issues

NTT's Approach	**Methods of Engagement (examples)**	**Why We Engage**
We will fulfill our responsibility as an information and telecommunications company by adhering to the policies of the central government, administrative agencies and local governments.	· Response to laws and regulations · Policy proposals · Participation in joint projects between the government and private sector	We will respond to and comply with central and local government and administrative agency policies. Therefore, we will carry out business activities in an appropriate manner and contribute to resolving social issues faced by the Japanese people and local governments.

Main Initiatives

NTT Group has a mechanism for receiving inquiries and requests from various stakeholders including investors, shareholders and employees.

Engagement with Shareholders, Investors, and Other Relevant Organizations

In response to requests from investors, we hold briefings for institutional investors called "NTT IR DAY." Over the past few years, we have also been holding briefings for individual investors to cultivate a better understanding of NTT Group, and increasing the number of individual shareholders. We held 18 of these briefings in fiscal 2019, with a total of approximately 3,000 individual investors attending these events. The 33rd annual General Shareholders Meeting was held in June 2018 with approximately 6,000 shareholders in attendance. We disclose major questions and resolutions from the General Shareholders Meeting by publishing them in the shareholders' newsletter NTTis.

Furthermore, we have actively communicated with ESG rating institutions since fiscal 2016 and have sought to enhance NTT Group's CSR efforts and disclosure of ESG data. In November 2018, NTT DATA and NTT DOCMO held a joint meeting with the US-based Sustainability Accounting Standards Board (SASB) to discuss the CSR efforts of each NTT Group company and enhancing the transparency of information disclosure through publications such as the Sustainability Report. NTT Group plans to continue maintaining regular communication with ESG rating institutions and investors promoting ESG investment.

Initiatives for Enhancing Communication

Institutional investors:
- Held financial results briefings every quarter (four times)
- Participated in IR conferences in Japan and overseas (seven times)
- Held NTT IR Day (once)
- Held individual briefing sessions in Japan and overseas (over 400 in total)

Individual investors:
- Held company briefings (15 times)
- Held online company briefings (twice)
- Participated in an individual investor fair (once)

In addition to these initiatives, we promote activities that incorporate feedback from sources including contact centers for consumers in order to improve business operations and build systems for improving or developing products.

IR Events: Presentations   https://www.ntt.co.jp/ir/library_e/presentation/index.html

Opinions and Reflections from Readers of the Sustainability Report

NTT welcomes opinions and reflections on the Sustainability Report and the CSR efforts of NTT Group from various stakeholders through an inquiry form on our website.

In fiscal 2019, a discussion was held with the members of the Takano seminar group from Kansai University's Faculty of Societal Safety Sciences concerning NTT Group's CSR efforts. Following this, a sponsored lecture on the theme of "corporate social responsibility and educating consumers" was given in which we explained the NTT Group Medium-Term Management Strategy and how we have positioned CSR, and which also introduced things like specific cases where ICT has been used to solve social issues and initiatives in which volunteers from across the Group make social contributions.

Enrich Society

P019 — Contribute to Society through ICT and Data Usage

Number of B2B2X projects **39**

Number of UD-capable products **12**

P021 — Pursue Customer Satisfaction

Call center response rate **86.5%**

Number of improvements made based on suggestions from customers **399**

P022 — Reinforce and Globalize Research and Development

Number of patent applications **1.06** publications/person

Number of academic papers published outside the company **0.76** publications/person

Enrich Society

CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators	KPI	Target Achievement FY	Result (FY)		
					2017	2018	2019
Contribute to society through ICT and data usage	Evolve into a B2B2X business model which uses digital services and data management	Number of B2B2X projects	100 projects	FY2022	-	-	39
	Leverage the characteristics of 5G to create new value with a broad range of partners	5G service-related indicators*	To be set at the commercialization stage				
	Promote personalization to support changing lifestyles	Number of places where payments can be made and points can be used*	Two million places	FY2022	-	840,000 places	1.05 million places
	Provide ICT services available for a broad range of customers, including the elderly and persons with disabilities	Number of UD-capable products and services provided	Expand	-	11	14	12
Pursue customer satisfaction	Provide high value-added products and services and fine-tuned support	Reductions in waiting and customer service times at DOCOMO shops*	Decrease by half compared to FY2018	-	-	-	-
		Number of improvements made based on suggestions from customers	More than in the previous fiscal year	-	446	496	399
		Response rates at our call centers	Better than in the previous fiscal year	-	Response rate: approx. 80.9%	Response rate: approx. 88.6%	Response rate: approx. 86.5%
Reinforce and globalize research and development	Globalize and expand the competitiveness of research and development to generate world bests, world firsts, and amazing results	Number of patent applications	More than in the previous fiscal year	-	1.02 applications /person	1.01 applications /person	1.06 applications /person
		Number of academic papers published outside the company	More than in the previous fiscal year	-	0.74 publications /person	0.76 publications /person	0.76 publications /person
		Number of successful practical applications*	More than in the previous fiscal year	-	0.059 publications /person	0.064 publications /person	0.070 publications /person

*Newly established in fiscal 2020

Contribute to Society through ICT and Data Usage

Relevant GRI Standards ● 103-1,2 ● 203-1,2

Relevant SDGs

Policies and Concepts

In recent years, various social issues have come to the fore: rapid increase in the global population, growing severity of natural disasters, worsening of food supply and environmental problems, and in Japan, low birthrates and an aging population are leading to the rapid shrinking of the working-age population. In order to solve these problems, big social and economic transformations are being demanded in every society and economy, and the advancement of digital transformation utilizing ICT (Information and Communications Technology) is required in every situation. NTT Group has been applying our various management resources and capabilities, including the human resources, research and development, and ICT base we have cultivated through our business activities, to solve social issues. Going forward, we will position ourselves as Your Value Partner by collaborating not only with our customers and telecommunications carriers, but also with companies in different industries and local governments with the aim of utilizing the power of ICT and data to contribute to society.

Organization for Implementation

NTT Group has made promotion of the B2B2X business model one of the pillars of our growth strategy and we have established a B2B2X Strategy Committee with the president as chairman to facilitate Group collaboration while expanding projects. We are also deepening discussion about future deployment of the B2B2X business model at regularly held Board of Directors meetings and reporting on progress at general meetings of shareholders.

Main Initiatives

Promoting the B2B2X Business Model

The promotion of the B2B2X business model is an initiative aimed at shifting from our previous model, where NTT Group provided individuals and companies with direct services, to a new model which delivers added value to end users through support for service providers in a range of fields. Currently, we are expanding the B2B2X model and working to solve social issues through projects such as revitalizing local economies and responding to low birthrates and an aging population through collaborations with a variety of companies and organizations, and working with local governments to establish Wi-Fi environments that are easy to use, even for foreign visitors to Japan. Going forward, as we advance personalization and the realization and deployment of 5G, we will support our customers in their digital transformations and contribute to the realization of a smarter society.

B2B2X Business Model
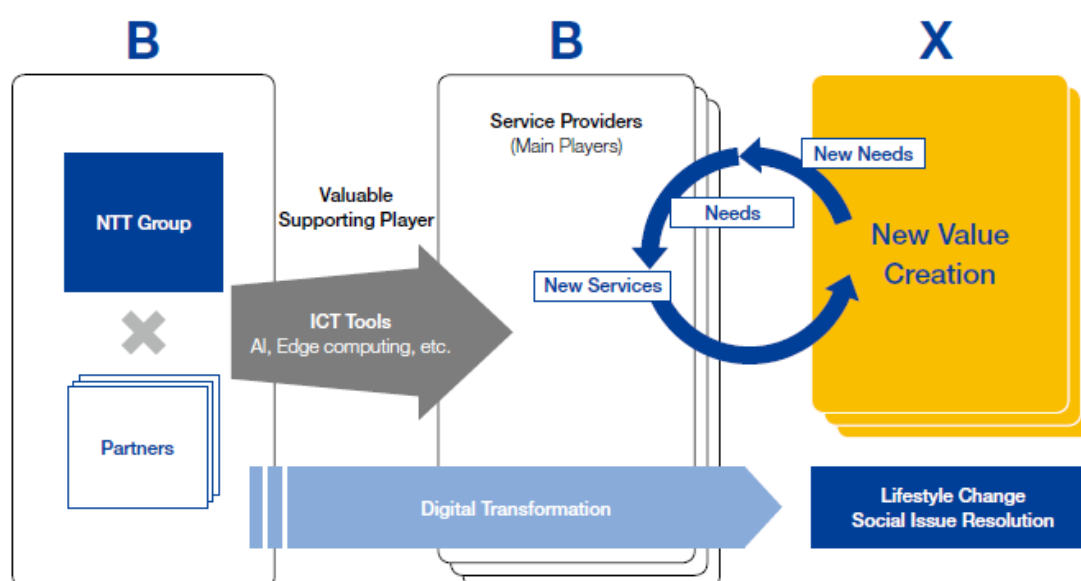
Utilize the Unique Characteristics of 5G to Create New Value with a Broad Range of Partners

To bring about and deploy 5G service, we have expanded initiatives in the DOCOMO 5G Open Partner Program aimed at creating new usage scenarios with a broad range of partners. Also, in our 5G field tests we are advancing initiatives aimed at realizing 5G usage in a broad range of environments, and achievements include becoming the first in the world to successfully realize a data transfer speed of 27Gbps to mobile terminals, exceeding the 20Gbps required by 5G.

Supporting Transforming Lifestyles by Advancing Personalization

With the aim of advancing personalization, we are strengthening our video content business to respond to the diversifying lifestyles of customers. We are also providing a Basic Share Pack and Basic Pack which are well suited to customers who only use small volumes of data, as well as Welcome Sumaho Wari, a discount for customers switching from cell phones to smartphones for the first time.

Initiatives for Universal Design*

NTT Group actively encourages the broader adoption of universal design, which ensures that products and services are easy for all customers to use, regardless of age, gender or physical abilities.

* Products and services that can be used by senior citizens, children, persons with special needs, and foreign visitors facing language barriers (includes expanded functions)

<u>Examples of Universal Design Products and Services in Fiscal 2019</u>

- Simple Flick, an app that assists with smartphone operation to make them easier to use for customers with special needs in their upper limbs
- Mieru Call, a service for customers with a hearing impairment
- At Narita International Airport, tablet-type remote-controls specialized for the toilets and a congestion notification service that uses IoT
- Installation of an internet environment in ICT-based urban development being carried out in Sakai City.

Establishment of the NTT Group Web Accessibility Policy

NTT Group is working to ensure and improve the accessibility of its websites for a wide spectrum of customers, including senior citizens and persons with disabilities.

Specifically, the Group established the NTT Group Web Accessibility Policy. The policy for official websites of the Group companies with head office functions in Japan is set according to JIS X 8341-3:2016[1] and each works to comply[2] with Level AA.

[1] JIS X 8341-3:2016: "Guidelines for older persons and persons with disabilities—information and communications equipment, software and services—Part 3: Web content" of Japanese Industrial Standards

[2] Refers to compliance with the description defined in the "Compliance Performance Announcement Guidelines for JIS X 8341-3:2016. March 2016 Edition (published on March 22, 2016)" of the Web Accessibility Infrastructure Committee, Info-communication Access Council. This means that we have established and disclosed an accessibility policy and confirmed that the pages fulfilled all the requirements through the tests implemented and based on JIS X 8341-3:2016.

About the Web accessibility efforts of NTT Group   https://www.ntt.co.jp/apolicy/ (Japanese only)

User-Friendly Service Lineup

We offer a broad range of discount services for various users, including senior citizens and persons with special needs, to facilitate access to ICT services.

Special discounts on dedicated lines for educational facilities (NTT East and NTT West)

Since January 2001, NTT East and NTT West have offered special fees for schools on FLET'S services suitable for using the Internet at a fixed sum in an effort to promote educational use of the Internet.

NTT East   https://business.ntt-east.co.jp/service/schoolplan/ (Japanese only)

NTT West   https://flets-w.com/limited/school/ (Japanese only)

Discounts on mobile phone use for persons with special needs (NTT DOCOMO)

NTT DOCOMO offers plans including a 1,700-yen discount on basic plans such as the Kake-hodai (unlimited calling) plan, 60% discounts on FOMA payment plans and monthly fees on various services, partial elimination of charges for some subscription procedures, setting of video phone call charges at the same level as voice call charges, and no charge for dialing and obtaining information via the 104 directory assistance.

https://www.nttdocomo.co.jp/charge/discount/hearty/about/index.html (Japanese only)

Pursue Customer Satisfaction

Relevant GRI Standards ● 102-33 ● 103-1, 2

Relevant SDGs

Policies and Concepts

NTT Group serves various customers, from general consumers to corporate customers, providing a broad range of products and services.

NTT Group's main business fields, the communications and ICT industries, continue to innovate, producing new products and services. Mobile devices such as smartphones and tablets continue to evolve almost daily, giving rise to a number of new services utilizing NTT Group's network. At the same time, with the evolution of technology and services, the amount of information needed to use them has also increased, and this has also increased opportunities for us to receive various confirmations, inquiries, feedback and requests from customers with regard to device malfunctions and questions about various fees and services.

NTT Group believes that helping eliminate customers' concerns or doubts about the services they use and maintaining a high level of satisfaction among all customers will give rise to relationships of trust with customers and lead to the acquisition of new customers.

Organization for Implementation

NTT Group companies have built a system for making operational improvements that will lead to reductions in the time taken to respond to customers, enhancing products and services, and influencing development based on the "voice" of customers received through surveys, the Customer Services Center, and other departments,. In turn, we work toward developing and providing services closely in tune with the "voice" of our customers. Specifically, we work continuously to improve our year-over-year results for the KPIs of the reduction in waiting and customer service times at DOCOMO shops, the number of improvements made based on suggestions from customers, and the response rate of our call centers, which will give rise to a positive cycle of improvement.

NTT Group will keep on making efforts to raise the level of customer satisfaction, including service quality and on-site responsiveness required by customers, in conjunction with the business operations of individual NTT Group companies.

Main Initiatives

Customer Contact Points

Each Group company has set up a call center that responds to customer inquiries on products and services, requests for repairs, and complaints.

Major call centers of NTT Group receive over 180,000 calls each day and endeavor to respond promptly to customers. Each call center has set its own targets aimed at improving response rates and enhancing the quality of responses and support. They also engage in various efforts including telephone response competitions and training to enhance skills for providing better responses.

Reflecting the "Voice" of Customers

NTT Group listens to the "voice" of its customers, including their opinions and requests, through its call centers. Each Group company has constructed a system for reflecting the "voice" of customers in making operational upgrades and improving and developing products and services, and they are making an active effort in related activities as well.

For example, NTT Communications collects the "voice" of customers through various contact points in an effort to reinforce initiatives for enhancing services and improving operational processes. This includes not only annual surveys, but also soliciting customer feedback at the time of application and during various support processes.

For more information on these initiatives, please refer to each company's website, CSR Report, and other materials.

NTT East "Service with a Smile" activities   http://www.ntt-east.co.jp/smile/ (Japanese only)

NTT West "Customers First" activities   https://www.ntt-west.co.jp/withc/ (Japanese only)

NTT Communications "For Increased Customer Satisfaction"

https://www.ntt.com/about-us/cs/cs.html (Japanese only)

NTT DOCOMO "Initiatives That Utilize Feedback from Customers"

https://www.nttdocomo.co.jp/support/cs/case/index.html (Japanese only)

Reinforce and Globalize Research and Development

Relevant GRI Standards ● 103-1,2

Relevant SDGs

Policies and Concepts

As ICT companies leading the world, NTT Group's R&D engages in the research and development of new technologies that form the wellspring of new value creation in a variety of domains. In addition, together with our business companies, it plays the role of supporting the digital transformations of our customers and lifestyle transformations tailored to individuals and it is therefore recognized as a material issue as the source of NTT Group's competitiveness. NTT Group seeks to overcome numerous problems involving safety, disaster readiness, and the improvement of productivity through R&D and, as a result, strengthen industrial competitiveness and resolve social issues. Since ICT is put to use in a variety of fields, we are addressing the resolution of issues using R&D, acting not as NTT Group alone, but in partnership with counterparts in wide-ranging industries.
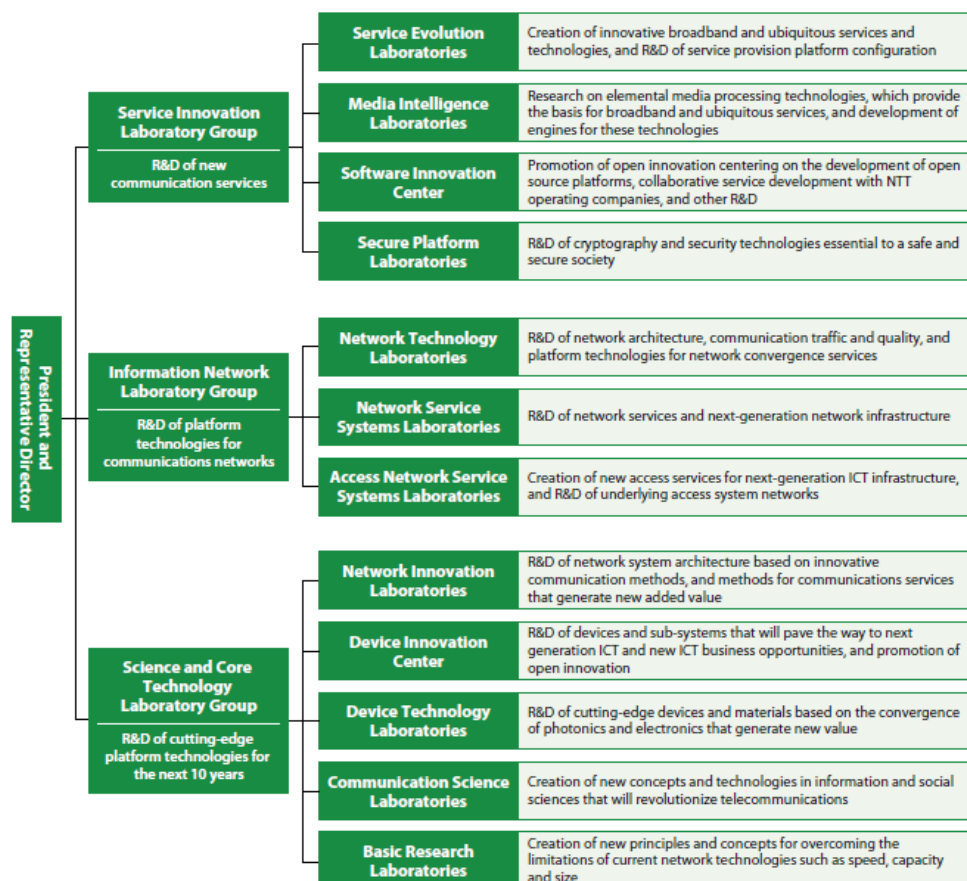
Organization for Implementation

With respect to R&D undertaken by NTT Group, NTT's three laboratory groups are responsible for conducting basic research that serves as the backbone of telecommunications, such as basic and component technologies related to services and networks, while each operating company conducts applied research that is more closely related to its business. NTT Group currently employs about 5,000 researchers and spends approximately 220 billion yen annually on R&D.

Also, we promote general producer activities, formulating marketing and business plans and forging alliances so that the results of research by NTT laboratories can be transformed into Group businesses. In these general producer activities, we seek to develop business in a timely manner by combining the wide-ranging basic technologies of NTT laboratories with external technologies in collaboration with Group companies and with various other companies to create new services.

In order for innovation to continually be an important driver of NTT Group well into the future, we will aim to contribute to the realization of a sustainable society by promoting innovations for social issues. These efforts will include patent applications and the publication of scientific papers.

Under the NTT R&D vision of developing leading technologies that contribute to the advancement of society, science and industry, NTT maintains approximately 2,500 researchers in the Service Innovation Laboratory Group, Information Network Laboratory Group, and Science and Core Technology Laboratory Group. These groups engage in a wide range of diverse research activities, from basic research to R&D that supports the business development initiatives of operating companies.

President and Representative Director	Service Innovation Laboratory Group — R&D of new communication services	Service Evolution Laboratories	Creation of innovative broadband and ubiquitous services and technologies, and R&D of service provision platform configuration
		Media Intelligence Laboratories	Research on elemental media processing technologies, which provide the basis for broadband and ubiquitous services, and development of engines for these technologies
		Software Innovation Center	Promotion of open innovation centering on the development of open source platforms, collaborative service development with NTT operating companies, and other R&D
		Secure Platform Laboratories	R&D of cryptography and security technologies essential to a safe and secure society
	Information Network Laboratory Group — R&D of platform technologies for communications networks	Network Technology Laboratories	R&D of network architecture, communication traffic and quality, and platform technologies for network convergence services
		Network Service Systems Laboratories	R&D of network services and next-generation network infrastructure
		Access Network Service Systems Laboratories	Creation of new access services for next-generation ICT infrastructure, and R&D of underlying access system networks
	Science and Core Technology Laboratory Group — R&D of cutting-edge platform technologies for the next 10 years	Network Innovation Laboratories	R&D of network system architecture based on innovative communication methods, and methods for communications services that generate new added value
		Device Innovation Center	R&D of devices and sub-systems that will pave the way to next generation ICT and new ICT business opportunities, and promotion of open innovation
		Device Technology Laboratories	R&D of cutting-edge devices and materials based on the convergence of photonics and electronics that generate new value
		Communication Science Laboratories	Creation of new concepts and technologies in information and social sciences that will revolutionize telecommunications
		Basic Research Laboratories	Creation of new principles and concepts for overcoming the limitations of current network technologies such as speed, capacity and size

Enhance and Globalize R&D

To advance innovative research and development that drives changes worldwide and to step up basic research, plans call for the establishment of research centers overseas, the global rollout of the results of R&D, and the globalization of research targets. Also, the Group will strengthen joint research with a varied range of research bodies, actively utilize the latest external technologies, and increase investment in research on new growth fields.

In July 2019, we opened the overseas basic research center NTT Research, Inc., in Silicon Valley in the United States. NTT Research operates three research laboratories and works to reinforce basic research as the source of innovation, coordinating with research laboratories in Japan.

Each research laboratory has a team and manager made up of globally active researchers. The laboratories are engaged in not only closed research for NTT research laboratories but also proactive joint research with universities and research institutes worldwide, as well as with the laboratories of other companies. We aim to achieve the peak of basic research and produce unrivaled world-class results that contribute to innovation. We will continue to globalize our research and development even further, by opening research centers in areas around the world, starting with Silicon Valley.

Main Initiatives

Research and Development to Promote the B2B2X Model

Promoting the B2B2X business model is a central pillar of NTT Group's initiatives contributing to the realization of a smart society. In the B2B2X model, instead of providing services to customers directly, NTT Group provides ICT tools, such as AI and IoT, to service providers, thereby supporting the delivery of various types of added value to customers.

NTT Group has been working to realize B2B2X models with many partner companies and local governments and we will evolve them further and advance a model that uses digital services and data management.

Conducting Commercial Performances of New Kabuki Using ICT

Shochiku Co., Ltd. and NTT concluded a business alliance for the three-year period from 2019 to 2021 for jointly conducting commercial performances of a new form of kabuki that incorporates state-of-the-art ICT such as Kirari!®. The first of these collaborations, hosted jointly by NTT-Shochiku Partners, a voluntary partnership established by both companies, was held in August 2019 as the "Minamiza Reopening Commemorative Event 'August Minamiza Chokabuki'" at the Kyoto Minamiza Theatre.

Through the performance, the two companies have accumulated knowledge in the entertainment field to enable them to respond to various business opportunities in new markets such as inbound visitors to Japan and the younger generation. We will continue to study the business potential of this venture through joint performances during the period up to 2021, and aim to expand the business by combining ICT with kabuki and other forms of entertainment.

Contributing to Manufacturing through Optical Fiber Technology
−Successful Long-Distance Transmission of High-Quality Laser-Processing Light

We have been working together with Mitsubishi Heavy Industries, Ltd. to promote the transformation of manufacturing technology in the social infrastructure industry. By applying communication-grade optical fiber technology with laser processing, we have succeeded in transmitting high-power single-mode laser light suitable for high-precision processing over distances of up to several hundreds of meters without loss of quality. Conventionally, such transmissions have been possible only up to several meters.

This research success opens the door to higher efficiency and precision in laser processing, while expanding the fields for its application. The technology is expected to spark innovation in manufacturing.

Cybersecurity Technology "InteRSePT®" Commercialized

We have developed cybersecurity technology with Mitsubishi Heavy Industries, Ltd. for control systems such as critical infrastructure. The technology can detect anomalies caused by unknown cyberattacks and respond in real time. Mitsubishi Heavy Industries has commercialized the technology as "InteRSePT®" and it is now available for sale. It features the ability to control communication in accordance with operation status and to isolate only the abnormal locations to remove harm, realizing a cybersecurity system that allows the system to continue operating.

Research and Development Aimed at Achieving Immersive and Natural Worlds
Further Evolving of Ultrahigh-Immersive Telepresence Kirari!®

NTT has further evolved its "Kirari!®" processing technology, which aims to create worlds that provide "just like being there," ultrahigh immersion experiences in real time that can be accessed anywhere. The newly developed techniques not only

enable the acquisition and transmission of the images of subjects from video broadcasts, along with 3D positioning information, but also allow them to be reproduced at the destination in a pseudo-3D display that generates the sensation that the subjects also move toward and away from the viewer. This results in the achievement of an audience experience in which the subjects appear to move in three dimensions at the destination.

For example, in a sports match, the technology can project a pseudo-3D display of an athlete onto a stage and give a real sense of the projected athlete moving nearer or further away through synchronization with the movements of the athlete in the actual event being broadcast. Further, collecting and synthesizing sounds from the event venue and using rows of speakers for sound output create auditory localization, whereby sound seems to "jump out" in front of the speakers. This effect, together with a multiangle image display that surrounds both sides of the stage, instantly creates a real sensation of "being there" as the match progresses.

Launching New "Point of Atmosphere" Research Program

NTT has also started a new "Point of Atmosphere" program of research that allows not only electronic terminals but also various everyday objects to be used as devices to convey information more naturally. This research will promote digital transformation (DX) without interfering with original human activities through natural interactions that harmonize with people and the environment. For example, several ICT devices in a room work together and provide an illusion that a raincoat hung on the wall appears to be trembling and the floor looks wet, thereby letting the resident know in this natural manner that it is going to rain today.

Promoting Cutting-Edge Research

With large capacity optical networks expected to evolve further to facilitate the widespread use of IoT and 5G services, we are newly developing our own digital signal processing and ultra-broadband optical device technologies, and we have become the first in the world to successfully test the long-distance transmission of a wavelength division multiplexed optical signal. We also successfully used two technologies for the wireless transmission of volumes that were about 100 times greater than LTE or Wi-Fi and five times greater than 5G. In addition to these, we are advancing cutting edge research, such as the joint development with a university of an ultra-high-speed integrated circuit that enables wireless transmission.

Increasing the Capacity of Networks

With the full-scale uptake of IoT and 5G services, increasing the capacity of mission-critical optical fiber communication networks has become an economic necessity. We have developed new proprietary technology for digital signal processing and ultrawide area optical devices, increasing the channel capacity per wavelength to the point that transmission speeds achieve a level more than 10 times that of current commercial systems, and achieving a global first of 1 terabit/sec of capacity in long-distance wavelength-division multiplexed transmission trials. Furthermore, we also succeeded in developing an ultrahigh-speed compact optical front-end module with integrated compact, wide-band InP optical modulator.

As another accomplishment, we realized high-capacity wireless transmissions at approximately 10 times the speed of LTE and Wi-Fi, and five times that of 5G, by using two technologies.

First, we succeeded in wireless transmissions at rates of 100 Gb/sec by using a method devised by NTT combining a principle called "OAM multiplexing" with MIMO technology. This generates multiple radio waves of different frequencies so that they can transmit simultaneously without interfering with the each other. The result is a dramatic increase in the volume of data that can be transmitted simultaneously, enabling large-capacity communications.

The second is the joint development with the National University Corporation Tokyo Institute of Technology of a technology that enables wireless transmissions of 100 Gb/sec in the 300 GHz band. It is easier to expand the transmission bandwidth or terahertz waves, including the 300 GHz band, although they require high-performance devices. We developed an ultrahigh-speed integrated chip (IC) for wireless frontend devices, leading to the world's first 100 Gb/sec wireless transmission in the 300 GHz band.

Optical Transistor Capable of High-Speed Operation with Ultralow Power Consumption

As Moore's law approaches its limit in electronic circuits, there are expectations for a new, high-speed, energy-saving computing platform that incorporates optical technology. Achieving this requires technologies that have hitherto been considered difficult to achieve with low energy consumption, such as opto-electronic signal conversion and high-speed signal processing in the optical area. NTT has been developing a semiconductor nanostructure called photonic crystals with which to realize various tiny optical devices. In this work, we used our nanotechnology to realize a nano electro-optic modulator (E-O converter) and a nano photodetector (O-E converter) with extremely small capacitance and low energy consumption. Moreover, through their integration, we also realized an O-E-O conversion optical transistor. These nano-optical technologies

have opened the way to realizing high-speed, low-energy integrated opto-electronic information processing.

Looking to the Future: IOWN

NTT R&D is envisaging the arrival of new smart societies that are not yet possible with today's Internet, with features such as mobility as a service (MaaS) for extreme fail-safe systems and entertainment services offering deep immersion. To realize such smart societies, we will require innovation that cannot be achieved merely by extending the trajectory of current technologies; we will need to realize ultra-low power consumption, high-speed signal processing, and the fusion of virtual worlds that can equal or surpass reality with sophisticated prediction technologies. NTT Group has proposed the Innovative Optical and Wireless Network (IOWN) concept to realize new smart societies, and we are making a committed effort to realize this concept.

IOWN comprises three main technology components: an "all-photonics network" that uses optical processing on not only networks but also device processing; "digital twin computing" that enables high-speed, real-time interaction between things and people in cyberspace; and Cognitive Foundation®, in which these and various other ICT resources are efficiently managed.

An all-photonics network incorporates new optical technologies at every level, from networks to devices, and even inside chips, to enable ultralow power consumption, ultra-high speed processing that has not been possible until now.

By allocating different wavelengths to different functions in a single optical fiber, it becomes possible to provide multiple functions that support social infrastructure without mutual interference, including information communication functions such as Internet and sensing functions.

NTT Group aims to solve social issues by aiding the shift from electronics into the world of photonics.

Digital twin computing is a significant advance in existing digital twin technology. By performing calculations such as conversions, combinations, and replications for various digital twins representing things and people in the real world, and having those digital twins interact, this new paradigm allows free interactions between people and things to be recreated and tested. This can be used to build virtual societies at a level of precision that has never been achieved before, enabling us to run prediction and testing on large-scale, highly accurate futures, and to provide high-level communications offering new value. The technology is expected to solve various social problems around the world and lead to the creation of innovative new services.

IOWN is set to change our world in new and exciting ways.

Intellectual Property Management

Our Approach to Intellectual Property

The business activities of NTT Group are sustained by products and services derived from the results of our aggressive R&D. For this reason, we believe that appropriate protection and utilization of intellectual property generated by R&D is vital for NTT Group to achieve continuous growth, which in turn will enable us to continue contributing to our customers and society at large. We strive to protect the intellectual property of NTT Group and promote activities that respect the intellectual property of others in every aspect of our business activities.

System of Intellectual Property Management

NTT protects the results of its R&D to maintain its competitive edge but at the same time makes its intellectual property available to a wider audience by licensing technologies that would contribute to the development of industries and businesses as well as standardized technologies that are already used in society. Under the leadership of the NTT Intellectual Property Center, NTT has established policies for intellectual property activities involving the entire NTT Group and also provides support and coordination for the use and management of intellectual properties, aggregates the opinions within the Group on the intellectual property system and disseminates information outside the Group.

Protection of Third Party Intellectual Property

In order to prevent the infringement of domestic and overseas third party rights, NTT examines the third party rights of technologies used in our business at every step from the early stage of research and development up to the provision of the developed technologies to Group companies. NTT also strives to enhance the Group's compliance with intellectual property laws and regulations in Japan and abroad and mitigate potential business risks by sharing among the Group companies information on system amendments, and trends concerning intellectual property including disputes and court cases.

NTT Intellectual Property Center   https://www.ntt.co.jp/chizai/index.html

External Utilization of R&D Outcomes

Since its founding, NTT has promoted cutting edge technological development as a leading company in the information communication industry. For this reason, we own a vast number of patents.

NTT licenses its proprietary technologies so that they can be used broadly by all for the benefit of the telecommunications market as well as other markets. For example, as part of our initiatives for standardization, we efficiently promote the spread of technology by licensing patents on standardizations to many companies through various patent pools.

Also, to make business creation in regional areas more dynamic, we participate in business matching events and the like hosted by local governments and other organizations so we can license NTT proprietary technology to local companies and advance initiatives that enable them to use such technology in their own product development. In 2018, we provided a patent license to a company in Kawasaki, Kanagawa Prefecture, and it is now advancing product development. We hope to contribute to the revitalization of local economies going forward with this initiative.

Model for Regional Revitalization through Intellectual Property Matching Events Hosted by Local Governments and Others
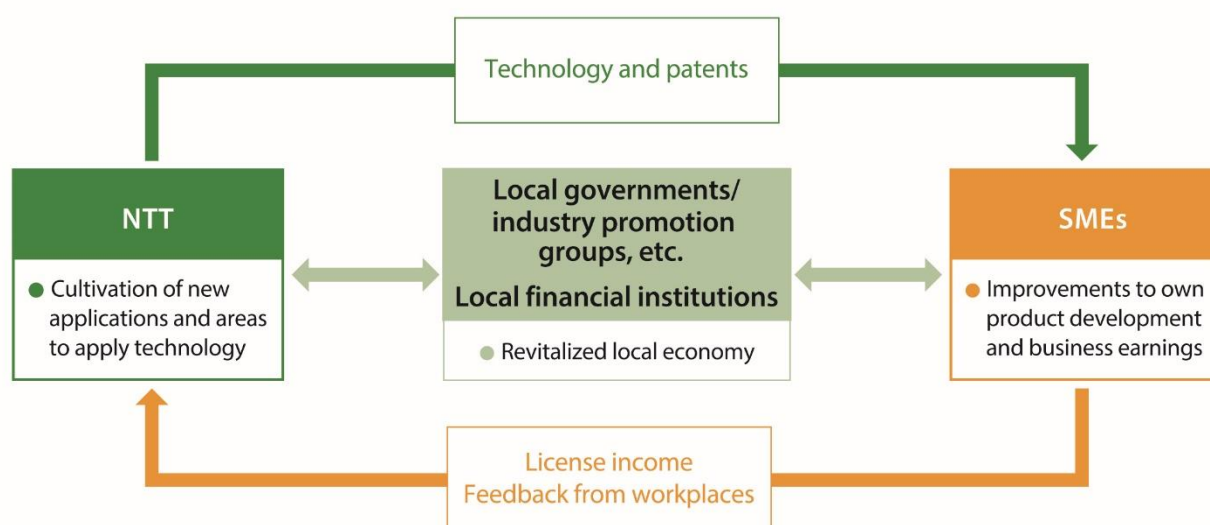
NTT discloses its licensing policy and procedures along with detailed information on its R&D activities and technological licenses.

R&D Activity   https://www.ntt.co.jp/RD/e/active/index.html

NTT Technology Licensing Site   https://www.ntt.co.jp/ntt-tec/e/index.html

Licensing policies and procedure   https://www.ntt.co.jp/ntt-tec/e/procedure/index.html

Protect Environment

P039 — **Use ICT to Contribute to the Environment**

Amount of contribution to the reduction of CO_2 emissions of all society

10.8 times

P039

Reduce the Environmental Impact of Business Operations

Power efficiency of communications services

4.5 times

P044 — **Effectively Use Resources**

Final disposal ratio of waste: Zero emissions

0.91 %

Protect Environment

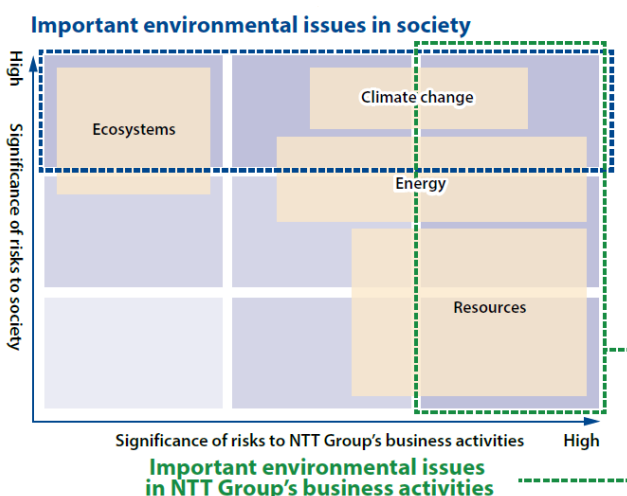| CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators	KPI	Target Achievement FY	Result (FY)		
					2017	2018	2019
Use ICT to contribute to the environment	While reducing CO$_2$ emissions of the Company, contribute to the reduction of CO$_2$ emissions of all society, including value chains, through the utilization of ICT	Amount of contribution to the reduction of CO$_2$ emissions of all society	At least 10 times the Company's emissions	FY2031	8.9 times	10.1 times	10.8 times
Reduce the environmental impact of business operations	Improve power efficiency to reduce the environmental impact of business operations	Power efficiency of communications services (power efficiency per data transmission)	At least 10 times higher than in FY2014	FY2031	2.7 times	3.6 times	4.5 times
			At least two times higher than in FY2018*	FY2026	-	-	1.2 times
		Ratio of EV adoption in Japan*	100% 50%	FY2031 FY2026	-	-	0.4%
Effectively use resources	Control the final disposal ratio of waste and work toward the effective use of resources	Final disposal ratio of waste	under 1%	FY2031	1.03%	1.18%	0.91%

*Newly established in fiscal 2020

Our Thinking Concerning the Environment

Relevant GRI Standards	● 102-16,18,19 ● 103-1,2 ● 302-4 ● 305-5 ● 306-2
Relevant SDGs	N/A

Identifying the Priority Environmental Issues of NTT Group

When identifying NTT Group's CSR Priority Activities, we carried out a detailed materiality analysis of environmental issues. Consequently, climate change and ecosystems have been identified as important environmental issues in society. Climate change, energy (electricity) and resources have been identified as important environmental issues to NTT Group's business activities. We are contributing to solving important environmental issues in society through all our activities, such as by providing ICT services and developing groundbreaking technologies and activities undertaken by our employees. Based on this perspective, we have identified using ICT to contribute to the environment, reducing the environmental impact of business operations, and effectively using resources as NTT Group's CSR Priority Activities.

Important environmental issues in society

Significance of risks to society (High)

Ecosystems / Climate change / Energy / Resources

Significance of risks to NTT Group's business activities (High)

Important environmental issues in NTT Group's business activities

    We will work to reduce our own environmental impact with regard to the environmental issues of significant importance to NTT Group's business activities.

Important environmental issues in society		
Priority issues	**Climate change**	**Ecosystems**
Risks	Climate change may cause various risks including abnormal weather and shortages of water or food.	Blessings from ecosystems, including biodiversity, are essential to all life, including humankind, and the loss of ecosystems may cause stagnation in social activities.
Response	We must pursue initiatives on "mitigation" aimed at reducing CO2 emissions for all society. We must also pursue "adaptation" initiatives.	Efforts must be made across society to coexist with nature and ensure that we receive the blessings from the ecosystems on a sustainable basis.

↓ **Contribute to resolving environmental issues for society through all our activities**

Important environmental issues in NTT Group's business activities		
Priority issues	**Climate change Energy**	**Resources**
Risks	Disasters associated with climate change may lead to a suspension of our operations. Energy, electricity in particular, is essential for the provision of our services, and a shortage may lead to a suspension of our operations.	Depletion of resources, both metal and nonmetal, affects the maintenance of the communications infrastructure (communications networks) and may disrupt business continuity.
Response	Approximately 95% of NTT Group's CO2 emissions are generated by electricity. Therefore, initiatives to address electricity use are important both as measures for mitigating climate change and for reducing power shortages.	It is important to use resources in sustainable ways.

↓ **Reduce our own environmental impact**

NTT Group Global Environmental Charter

NTT Group established the NTT Group Global Environmental Charter under the NTT Group CSR Charter, which lays out the basic policy of our CSR activities. The NTT Group Global Environmental Charter expresses the basic principles and policies on protecting the global environment.

We based "The NTT Group Environmental Statement" and "The Eco Strategy 2030" upon the foundations of these basic principles and policies.

NTT Group Global Environmental Charter

Basic principle
To ensure the harmonious co-existence of people with nature and to achieve sustainable growth, we will do our utmost to protect the global environment in all our corporate activities.

Basic policies
1. Compliance with laws and regulations and fulfillment of social responsibilities
2. Reducing environmental loads
3. Establishing and maintaining environmental management systems
4. Developing environmental technologies
5. Social contribution efforts
6. Disclosure of environmental information
7. Conservation of biodiversity

NTT Group Global Environmental Charter　　　https://www.ntt.co.jp/kankyo/e/management/charter.html
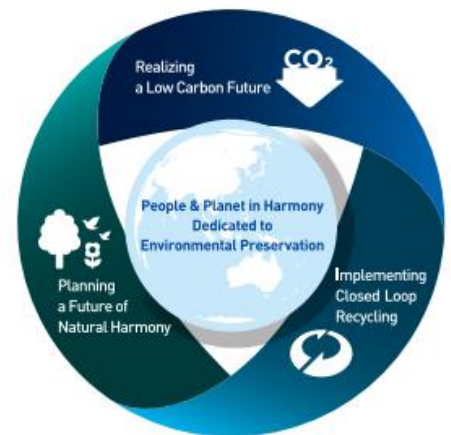
The NTT Group Environmental Statement

NTT Group has formulated The NTT Group Environmental Statement to serve as a framework for our environmental activities. In the statement, we have expressed the future of our planet that stakeholders and NTT Group are creating and the kind of enterprise we would like to be in that future.

In the future of "People & Planet in Harmony," a sustainable society has been realized and everything in the world is connected and communicating. To realize that future, NTT Group will engage in environmental activities with the aim of becoming a member of eco-friendly corporations in the world.

We envision three futures in which people are living in harmony with the planet. While focused on realizing those futures, we will continue to develop our core competencies: developing and providing the most advanced ICT services and technologies.

The NTT Group Environmental Statement

People & Planet in Harmony
Dedicated to Environmental Preservation

To ensure a future that is better for all life on Earth, we are devoting a great amount of resources to groundbreaking technological advances and superior eco-oriented ICT services.

Realizing a Low Carbon Future
We are contributing to the reduction of CO_2 emissions and facilitating adaptation* to climate change.

Implementing Closed Loop Recycling
We are working toward more effective resource allocation.

Planning a Future of Natural Harmony
We are contributing to the preservation of ecosystems.

* Adaptation: A response to the effects of climate change defined as "an action that moderates harm or exploits beneficial opportunities" according to the Intergovernmental Panel on Climate Change. Adaptation is positioned as an action that complements the effects of mitigation, such as reducing CO_2 emissions.

The Eco Strategy 2030

As a result of our materiality analysis, we have identified NTT Group's key environmental issues to be climate change, energy (electricity), resources, and ecosystems. Related to these important issues, we have set "The Eco Strategy 2030" as the targets of the environmental activities of fiscal 2031.

Realizing a Low Carbon Future
- We will contribute to reducing the CO_2 emissions of society by at least 10 times more than the NTT Group's own emissions.
- We will raise power efficiency per data transmission in our telecommunications businesses by at least 10 times compared to fiscal 2014 levels.
- We will play our part in adapting to climate change by actively promoting initiatives through all our activities and by collaborating with our stakeholders.

Implementing Closed Loop Recycling
- We will achieve zero emissions* with regard to the final disposal rate for waste discharged from the NTT Group.

Planning a Future of Natural Harmony
- We will play our part in preserving ecosystems by actively promoting initiatives through all our activities and by collaborating with our stakeholders.

* Zero emissions: NTT Group considers a final disposal rate of 1% or less to satisfy zero emissions conditions.

Realizing a Low Carbon Future

To realize a low carbon future and adapt to the effects of climate change, we have set three targets leading up to fiscal 2031. These are reducing overall CO_2 emissions across society, improving telecom power efficiency, and adapting to climate change.

Reduction of CO_2 Emissions across Society

We will contribute to reducing the CO_2 emissions of society by at least 10 times more than the NTT Group's own emissions.

Significance

We will seek to curb our own CO_2 emissions (red ball) generated by the NTT Group's businesses while contributing to overall reductions in CO_2 emissions across society (green ball) through the provision of services and technologies.

Actions

- Provide services and technologies that contribute to the reduction of CO_2 emissions across society
- Promote R&D that contributes to reducing CO_2 emissions
- Disseminate examples of contributions made inside and outside the Company

CO_2 emissions across society reduced through the NTT Group's contribution

10 times higher than our emissions

NTT Group's CO_2 emissions

Improvement of Telecom Power Efficiency

We will raise power efficiency per data transmission in our telecommunications businesses by at least 10 times compared to fiscal 2014 levels.

Significance

We will seek to raise the efficiency of our electricity use, which is essential for us to continue our business. Achieving this target will also contribute to reducing CO_2 emissions since electricity is the primary cause of our CO_2 emissions.

Actions

- Reduce energy consumption of communications equipment
- Raise efficiency of communications facilities including networks and data centers
- Promote R&D that contributes to energy conservation

FY2014
Communications data

Power efficiency 10 times higher

FY2031
Communications data

Electricity
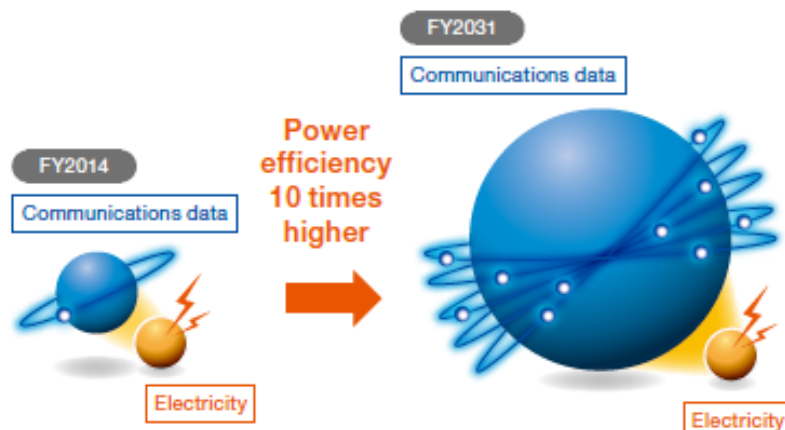
Adaptation to Climate Change

We will play our part in adapting to climate change by actively promoting initiatives through all our activities and by collaborating with our stakeholders.

Significance

We will take action on climate change by adapting as a means of moderating its effects that have already materialized and those that will be unavoidable in the mid- to long-term.

Actions

- Disseminate examples of adaptation inside and outside the Company
- Promote R&D that facilitates adaptation to climate change
- Engage in initiatives with employees of the Group as well as with customers and business partners

Implementing Closed Loop Recycling

To realize a future in which resources can be sustainable, we have set the target for fiscal 2031 as emission of zero waste.

Emission of Zero Waste	We will achieve zero emissions* with regard to the final disposal rate for waste discharged from the NTT Group.

* Zero emissions: NTT Group considers a final disposal rate of 1% or less to be that which satisfies zero emissions conditions.

Significance

We will seek to promote resource circulation by effectively utilizing resources, which are primarily mineral and fossil resources, in the NTT Group's operations.

Actions

- Maintain and advance 3R activities
- Prolong the useful life of communications infrastructure
- Promote R&D that contributes to the effective utilization of resources

Recycling

Final disposal rate of 1% or less

Final disposal waste

Planning a Future of Natural Harmony

To realize a future where the beauty and bounty of our natural world is sustained, we have set the target for fiscal 2031 as Preservation of the Earth's ecosystem.

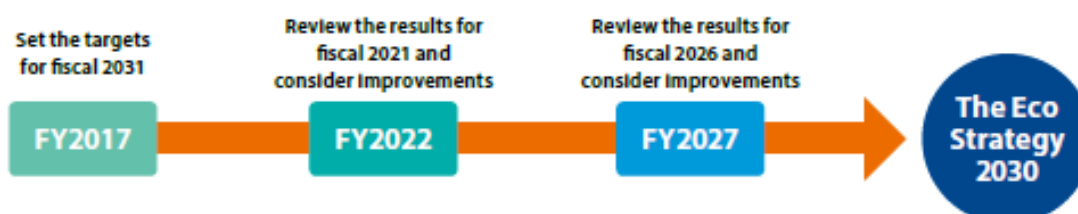| Preservation of the Earth's Ecosystem	We will play our part in preserving ecosystems by actively promoting initiatives through all our activities and by collaborating with our stakeholders.

Significance

Recognizing ecosystem as the foundation that sustains our social activities, we will promote preservation of the Earth's ecosystem. We will pursue initiatives centered on preserving biodiversity and work to solve issues related to the blessings from these ecosystems, such as water and food.

Actions

- Promote activities for preserving ecosystems, such as tree planting and greening, both inside and outside the Company
- Carry out educational activities and human resource development both inside and outside the Company
- Promote R&D that contributes to preserving ecosystems
- Engage in initiatives with employees of the Group as well as with customers and local communities

Roadmap to 2030

We plan to annually disclose results regarding "The Eco Strategy 2030" and consider necessary improvements for our activities and targets for fiscal 2031 every five years based on our achievements.

| Set the targets for fiscal 2031	Review the results for fiscal 2021 and consider improvements	Review the results for fiscal 2026 and consider improvements	
FY2017	FY2022	FY2027	The Eco Strategy 2030

Environmental Management

Organization for Environmental Management

We established the NTT Group Global Environmental Protection Promotion Committee as an internal unit under the CSR Committee (see page 011) to discuss and determine the environmental activities policies for the entire Group.

The NTT Group Global Environmental Protection Promotion Committee, which meets twice a year, is chaired by the NTT director and general manager of the NTT Environmental Protection Office (Head of Research and Development Planning) with membership comprising heads of environmental departments at six major Group companies (NTT East, NTT West, NTT Communications, NTT DOCOMO, NTT DATA, and NTT FACILITIES). The committee formulates environmental activities policies based on the decisions of the CSR Committee and reports its decisions to the CSR Committee. The committee deploys environmental activities throughout NTT Group companies.

NTT Group Organization for Environmental Management
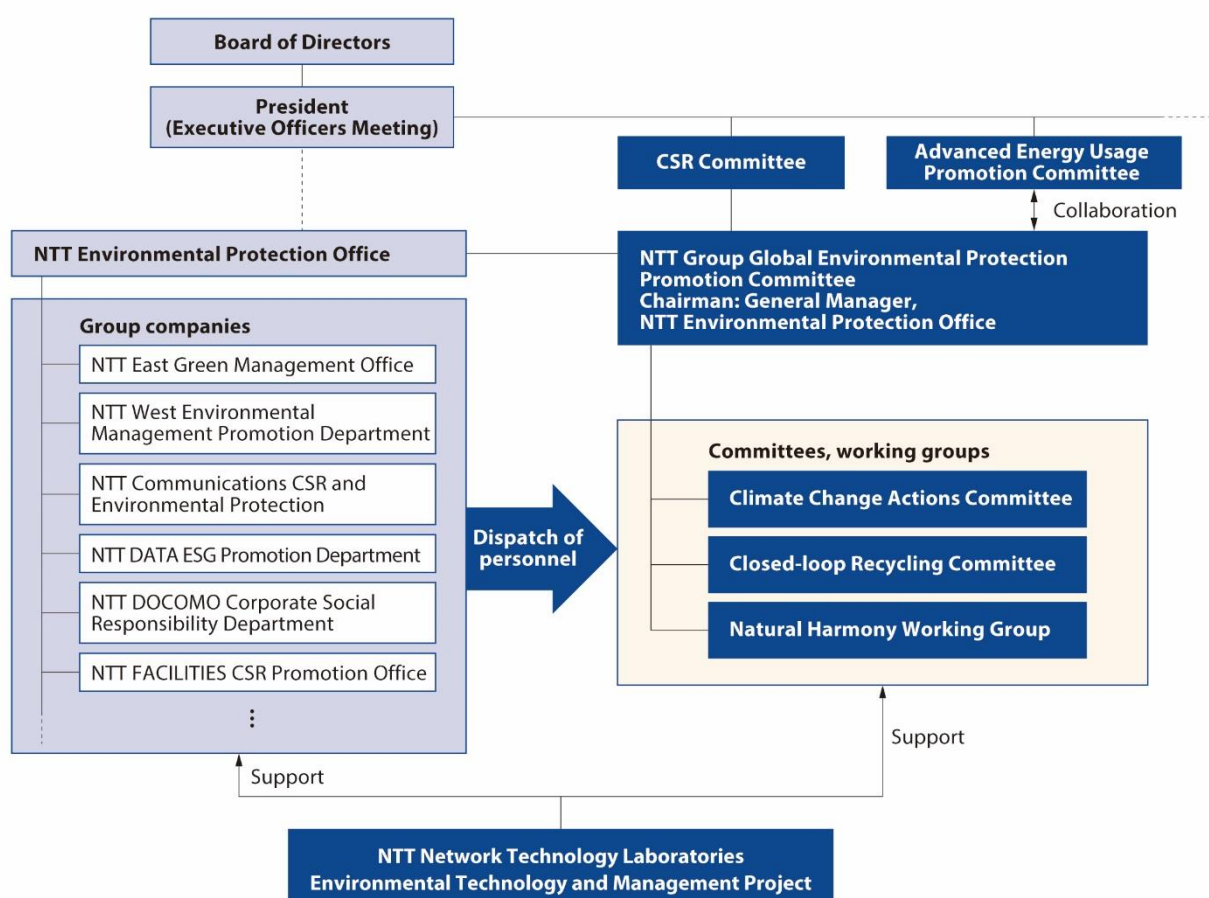
The NTT Group Global Environmental Protection Promotion Committee oversees the organizations placed under it while planning basic policies on environmental protection, managing targets, and addressing issues. It also worked on preparing and establishing The NTT Group Environmental Statement and The Eco Strategy 2030.

In addition to working with the environmental departments, the committee also cooperates with other departments to pursue related initiatives. Particularly with regard to electricity usage, which accounts for more than 90% of NTT Group's CO_2 emissions, the committee collaborates with the Advanced Energy Usage Promotion Committee, which is positioned under the Executive Officers Meeting and responsible for promoting the Total Power Revolution (TPR) campaign, NTT Group's energy conservation activities. As for the risks and opportunities presented by environmental issues to our facilities and equipment, monitoring and assessment are conducted through a collaborative effort between staff in charge of environmental issues and those responsible for facilities, and these individuals are appointed for every Group company.

Environmental Management System

NTT Group has been seeking to introduce environmental management systems (EMS) including voluntary programs in addition to ISO 14001 certification and Eco-Action 21. Additionally, when including Eco Action 21 and voluntary programs, more than 90% of our business sites have introduced EMS.

To improve operational efficiency of obtaining and maintaining certifications, which includes guarantees from external auditing institutions, we also support the construction and maintenance of EMS through internal audits by employees with environmental auditor qualifications. Many NTT Group employees are qualified as auditors, including lead auditors, and sharing the list of auditors within the Group has enabled us to conduct mutual internal audits and thereby optimize the cost of maintaining the EMS.

Environmental Accounting

NTT Group introduced environmental accounting in fiscal 2001 to boost the efficiency and effectiveness of its environmental conservation efforts by quantitatively determining the costs of environmental conservation programs undertaken as part of its business activities as well as their effects (economic and material benefits).

Moving forward, we aim to implement even more efficient and effective environmental management by continuously carrying out quantitative monitoring and analysis to understand the effects of our environmental activities, clarifying outstanding issues, and sharing information.

Category	Environmental investment (billion yen)		Environmental costs (billion yen)		Economic benefits (billion yen)			Material benefits (thousands of tons)		
	Fiscal 2018	Fiscal 2019	Fiscal 2018	Fiscal 2019		Fiscal 2018	Fiscal 2019		Fiscal 2018	Fiscal 2019
(1) Business area costs	6.97	8.60	19.75	15.93						
Pollution prevention costs	0.07	0.14	6.22	2.42						
Global environmental conservation costs	6.78	8.07	3.20	3.14	Cost reductions through energy conservation	8.86	5.95	Reductions in CO_2 emissions through energy conservation measures	305	184
Resource recycling costs	0.12	0.38	10.33	10.37	Revenues from sale of recyclable waste (decommissioned communications equipment, etc.)	6.57	7.34	Recycled decommissioned communications equipment	220	176
					Waste disposal cost reductions through recycling	0.15	0.12	Recycled construction waste	133	222
					Cost reductions through reuse of decommissioned communications equipment	38.30	26.96	Recycled civil engineering works waste	129	115
					Cost reductions through reuse of communications devices	11.06	10.60	Recycled office waste	33	32
					Cost reductions through reuse of office waste materials	0.01	0.00	Other recycled items	8	18
(2) Upstream/downstream costs	0.08	0.02	10.68	10.35	Revenues from sale of recyclable waste (subscriber communications devices, etc.)	0.49	0.52	Number of communications devices collected from customers (thousands)	8,560	9,372
					Cost reductions in postal expenses through computerization	14.91	14.17			
(3) Administrative costs	0.08	0.12	4.65	5.27						
(4) R&D costs	2.59	3.61	7.93	8.10						
(5) Citizenship activity costs	0.00	0.02	0.04	0.26						
(6) Environmental remediation costs	0.00	0.00	0.00	0.00						
Total	9.73	12.37	43.05	39.90	Total	80.34	65.67			

● **Scope of data**
 The companies subject to consolidated environment accounting are NTT, NTT East, NTT West, NTT Communications, NTT DATA, NTT DOCOMO and their group companies.
● **Applicable period**
 • Data for fiscal 2019 is from April 1, 2018 to March 31, 2019.
 • Data for fiscal 2018 is from April 1, 2017 to March 31, 2018.
● **Accounting method**
 • Accounting is based on the NTT Group Environmental Accounting Guidelines. These guidelines comply fully with the Environmental Accounting Guidelines 2005 issued by the Ministry of the Environment.
 • Environmental conservation costs are tabulated separately as environmental investments and environmental costs. Personnel costs and depreciation costs are also included in environmental costs.
 • Reductions in CO_2 emissions through energy conservation measures are calculated by subtracting actual emissions from projected emissions in the event that no such measures were taken.

Main Initiatives

Environmental Guidelines

NTT Group operations have the following four key attributes: (1) procurement of a great many products; (2) possession of many buildings; (3) high electricity consumption by telecommunications equipment; (4) in-house R&D facilities. To promote the effective reduction of our environmental impacts, we have drafted the following green guidelines that address each of these four key attributes: Guidelines for Green Procurement; Green Design Guidelines for Buildings; Energy Efficiency Guidelines; and Green R&D Guidelines. In particular, the development and procurement of ICT devices with outstanding energy efficiency is essential for the effective reduction of the CO_2 emissions of NTT Group.

To address this issue, we have been applying the NTT Group Energy Efficiency Guidelines since May 1, 2010. These guidelines give concrete form to the ICT device-related energy-saving stipulations of our Guidelines for Green Procurement and Green R&D Guidelines, and define our basic philosophy and device-specific targets with respect to the development and procurement of routers, servers and other ICT devices used in NTT Group. Under the Energy Efficiency Guidelines, NTT Group develops and procures ICT devices with consideration for energy-efficient performance in addition to function, performance and cost. We are endeavoring to apply these initiatives to the reduction of electricity consumption and concomitant CO_2 emissions related to customer communications.

Pursuing Initiatives across the Industry for Energy-Efficient ICT Devices

NTT is a member of the Telecommunications Carrier Association (TCA) and in that capacity, participates in the ICT Ecology Guideline Council,[1] an organization that seeks to enhance the energy efficiency of telecommunications-related products. The council formulates guidelines on the criteria for evaluating the energy efficiency of telecommunications devices, and NTT has contributed to the technical aspect of this effort. NTT Group's Energy Efficiency Guidelines are based on the guidelines created by this council.

In August 2010, eight NTT Group companies[2] acquired the Eco ICT Logo on submitting self-evaluations of their CO_2 emissions reduction efforts, including the establishment of Energy Efficiency Guidelines. The Eco ICT Logo was created by the ICT Ecology Guideline Council to signify efforts by telecommunications service providers to reduce CO_2 emissions.

We will continue to drive the development and procurement of energy-efficient equipment, and work with the ICT Ecology Guideline Council to help bring both vendors and carriers together to promote the industry-wide procurement of energy-efficient equipment. We will ensure that vendors are consistently provided with requirements for NTT Group specification processes, and include energy efficiency information disclosure and our corporate stance on energy efficiency in our criteria for selecting vendors.

[1] ICT Ecology Guideline Council: An organization established jointly by the Telecommunications Carriers Association, Telecom Services Association, Japan Internet Providers Association, Communications and Information Network Association of Japan and ASP-SaaS-IoT Cloud Consortium to drive industry-wide efforts to address the issue of global warming.
[2] The eight NTT Group companies are NTT, NTT East, NTT West, NTT Communications, NTT DOCOMO, NTT DATA, NTT FACILITIES, and NTT COMWARE.

ICT Ecology Guideline Council WEB   https://www.tca.or.jp/information/ecoict/index.html (Japanese only)

Disseminating Environmental Activities Policies and Measures among Employees

NTT Group conducts environmental education to disseminate NTT Group policies and measures among employees and develop a shared understanding of Group-wide activities for promoting environmental protection. In fiscal 2019, too, we provided training related to the Group's environmental activities for all employees, such as group training and e-learning.

The NTT Environmental Protection Office organizes environmental education for staff in charge of environmental issues at each Group company and has been holding study sessions every year since fiscal 2002. Along with lectures for disseminating our environmental policies and sharing outstanding issues, we invite outside lecturers to speak on recent topics. These study sessions are intended for NTT Group throughout Japan and are therefore offered via a teleconferencing

system so that staff in remote areas can attend and ask questions through two-way connections.

In fiscal 2019, we invited officials responsible for planning at the Ministry of the Environment to speak on the direction of environmental policy. Furthermore, related staff in Group companies introduced their environmental initiatives with the aim of promoting environmental activities at each Group company.

Compliance with Environmental Laws and Regulations

NTT Group complies with laws and regulations related to the environment and works to reduce its impacts on the environment.

We have established a mechanism that can deal with cases of legal violations on a Group-wide basis by reporting to the Global Environmental Protection Promotion Committee. There were no legal violations nor payments of penalties in fiscal 2019, following the same result for fiscal 2018.

As part of its environmental management measures, the Group also tracks the number of complaints related to the environment for each fiscal year. In fiscal 2019, no complaints related to environmental impact were submitted, handled or resolved through our systems for dealing with complaints.
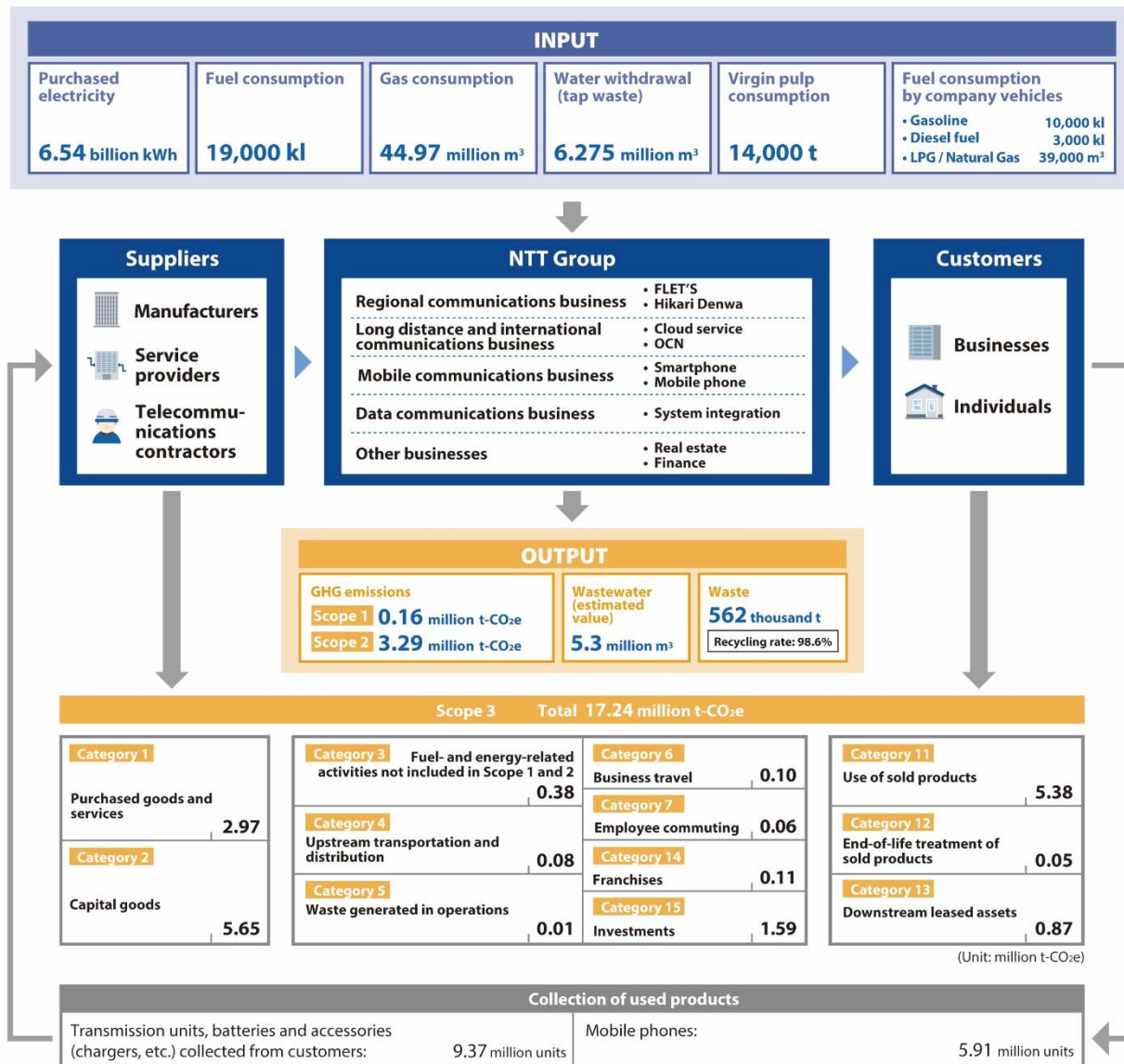
Going forward, we will continue to comply with existing laws and regulations as well as set up a working group on environmental laws and regulations to help step up our preparations for complying with laws and regulations under review or scheduled to take effect

	Relevant GRI Standards	● 301-1,2,3 ● 302-1,2 ● 303-1 ● 305-1,2,3 ● 306-1,2
# Environmental Impacts Overview	Relevant SDGs	N/A

To minimize the environmental impacts of our business activities, NTT Group endeavors to gather and analyze information on the resources and energy that it consumes and the resulting environmental impacts.

Material Balance of NTT Group (Fiscal 2019)

INPUT

Purchased electricity	Fuel consumption	Gas consumption	Water withdrawal (tap waste)	Virgin pulp consumption	Fuel consumption by company vehicles
6.54 billion kWh	19,000 kl	44.97 million m³	6.275 million m³	14,000 t	• Gasoline 10,000 kl • Diesel fuel 3,000 kl • LPG / Natural Gas 39,000 m³

Suppliers
- Manufacturers
- Service providers
- Telecommu-nications contractors

NTT Group
Regional communications business	• FLET'S • Hikari Denwa
Long distance and international communications business	• Cloud service • OCN
Mobile communications business	• Smartphone • Mobile phone
Data communications business	• System integration
Other businesses	• Real estate • Finance

Customers
- Businesses
- Individuals

OUTPUT

GHG emissions	Wastewater (estimated value)	Waste
Scope 1 0.16 million t-CO₂e Scope 2 3.29 million t-CO₂e	5.3 million m³	562 thousand t Recycling rate: 98.6%

Scope 3   Total 17.24 million t-CO₂e

Category 1	Purchased goods and services	2.97
Category 2	Capital goods	5.65
Category 3	Fuel- and energy-related activities not included in Scope 1 and 2	0.38
Category 4	Upstream transportation and distribution	0.08
Category 5	Waste generated in operations	0.01
Category 6	Business travel	0.10
Category 7	Employee commuting	0.06
Category 14	Franchises	0.11
Category 15	Investments	1.59
Category 11	Use of sold products	5.38
Category 12	End-of-life treatment of sold products	0.05
Category 13	Downstream leased assets	0.87

(Unit: million t-CO₂e)

Collection of used products

| Transmission units, batteries and accessories (chargers, etc.) collected from customers: | 9.37 million units | Mobile phones: | 5.91 million units |

	Relevant GRI Standards	● 102-11,15 ● 103-1,2 ● 201-2
Realizing a Low Carbon Future		● 302-1,2,4,5 ● 305-1,2,3,5,6
	Relevant SDGs	

Policies and Concepts

Reducing emissions of CO_2 and other greenhouse gases, which are the principal cause of climate change, is an important social issue. Additionally, in recent years, it has also been considered important to devise adaptation measures to prepare for the effects of climate change.

There is growing demand for conserving energy given the rising amounts of electricity use associated with the development of ICT. At the same time, ICT is expected to contribute to energy savings, the reduction of CO_2 emissions across society, and the provision of adaptation measures.

To usher in a low carbon future, NTT Group will endeavor to curb CO_2 emissions from its own business activities. Also, we will contribute to the reduction of CO_2 emissions across society and adaptation to climate change by striving to develop and disseminate the most advanced ICT services and technologies.

Organization for Implementation

NTT Group has established a Climate Change Actions Committee which works under the NTT Group Global Environmental Protection Promotion Committee. The Actions Committee has the senior manager of the NTT Environmental Protection Office as its chair and the people responsible for the environment at eight major Group companies as members. The committee investigates and promotes climate change-related measures in NTT Group, promotes measures aimed at achieving our targets for climate change, formulates policy and implements measures concerning application, and advances appropriate responses to climate change-related laws and ordinances.

The working groups (WG) under the committee advance activities according to their respective themes. The Environmental Contribution Promotion WG undertakes consideration and diffusion of our environmental labeling system for solutions, and target value management for contributing to the reduction of CO_2 emission amounts across society. The Low-Carbon Promotion WG addresses target value management and promotion of measures for power efficiency, while the Climate Change-Related Legal Compliance WG tackles management of environmental measures related to climate change.

Targets and Results

Reduction of CO_2 Emissions across Society

NTT Group has established a target for fiscal 2031 calling for it to contribute to reducing the CO_2 emissions of society as a whole by at least 10 times more than NTT Group's own emissions through its services and technologies.

This target is intended to contribute to the reduction of CO_2 emissions across society by providing ICT services and technologies while curbing CO_2 emission amounts from our own business activities.

Utilization of information communication, which is expanding each year through the spread of smartphones and high-speed and large-capacity networks, requires energy. On the other hand, by improving efficiency and reduction of goods through digitalization, utilization of information also contributes to the reduction of CO_2 emissions across society by reducing environmental load more than the energy consumption it requires.

* The amount of reducing CO_2 across society quantifies the energy savings effects obtained through ICT services using CO_2 volume. The energy saving effect is quantified with references to the Telecommunication Technology Committee (TTC) Standard "Methodology for the assessment of the environmental impact of information and communication technology goods, networks and services (JT-L1410)" and the calculation method specified by the "LCA of Information and Communication Technology (ICT) business organizations" research group of the Life Cycle Assessment Society of Japan.
* The effects of energy savings obtained through the introduction of ICT services include, for example, reduced electricity usage by homes, companies and factories from energy management, alleviation of traffic congestion using analysis of congestion and operation information, and reduced electricity usage from the streamlining and optimization of transportation schedules.
* The amount of CO_2 emissions for NTT Group includes the emissions from facilities necessary for other telecommunication carriers and data centers to provide their services.
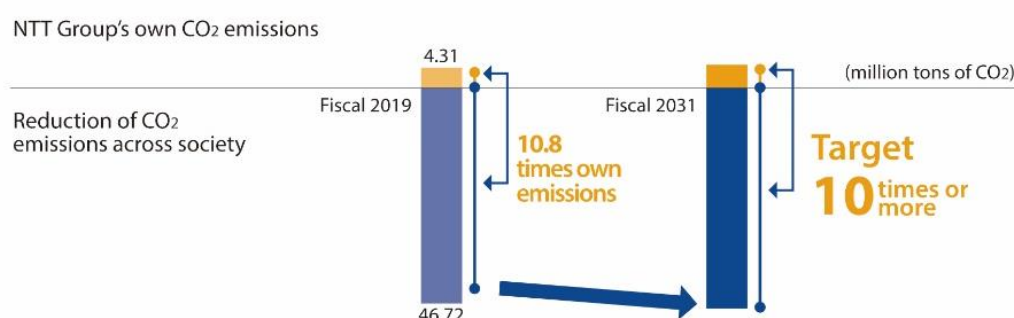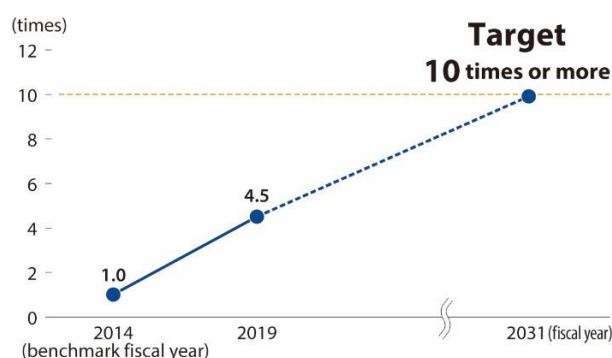

Power Efficiency of the Telecommunications Business

NTT Group has established the target for fiscal 2031 to improve the power efficiency per data transmission in our telecommunications business to at least 10 times higher than in fiscal 2014. Electricity is essential to the continuity of the communications business and it also accounts for more than 90% of NTT Group's CO_2 emissions. We set this target because improving the efficiency of using electricity both reduces the risk of business disruptions and helps mitigate climate change.

We are introducing highly energy efficient equipment and improving the efficiency of network structures based on our Energy Efficiency Guidelines.

* The telecommunications businesses subject to the calculation for power efficiency are the domestic businesses of the communications business segment appearing in our Annual Report (NTT East, NTT West, NTT Communications, NTT DOCOMO, and NTT DATA).

CO_2 Emissions of NTT Group

More than 90% of NTT Group's CO_2 emissions are indirectly generated emissions produced through electricity usage. We are working to curb these CO_2 emissions by reducing electricity usage with the goal of raising power efficiency per data transmission in our telecommunications businesses by at least 10 times compared to fiscal 2014 levels. We are also seeking to reduce CO_2 emissions from company vehicles by introducing low-emissions vehicles such as hybrid and electric vehicles into our fleet.

In fiscal 2019, NTT Group's Scope 1 (directly generated GHG emissions) CO_2 emissions amounted to about 160 thousand t-CO_2e and Scope 2 (indirectly generated GHG emissions) CO_2 emissions amounted to about 3,290 thousand t-CO_2e *.

In addition to disclosing the environmental impact generated by our business activities, NTT Group also calculates and discloses Scope 3 emissions (GHG emissions produced over the entire value chain), which includes indirect emissions that have been generated while providing ICT services and the like. In fiscal 2019, Scope 3 emissions amounted to about 17,240 thousand t-CO_2e.

* NTT Group provides equipment and the like necessary for other telecommunications carriers and data centers to provide their services. To date, we have included the fuel and electricity required for this equipment in our disclosed CO_2 emissions in accordance with reporting methods outlined by the Act on Promotion of Global Warming Countermeasures. However, as calculation methods have been established based on the Ministry of the Environment's Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (ver. 2.1), we have adopted these for calculating the above CO_2 emissions as Scope 3.

Initiatives for Tackling Climate Change

Environmental issues related to climate change, energy (electricity), resources, and ecosystems carry the potential to be both risks and opportunities for NTT Group's business activities. These risks and opportunities are prioritized by the Global Environmental Protection Promotion Committee, and major KPIs are reported to the CSR Committee. Risks and opportunities identified as having a significant impact on business, such as laws, regulations and systems related to the environment, will be reported to the Business Risk Management Committee, which determines enterprise risk, and presented to the Board of Directors.

Among these, risks and opportunities posed by climate change are specifically recognized as environmental issues of particular significance for society as well as NTT Group. We are seeking to more closely integrate our management strategies and environmental management with regard to risks and opportunities driven by future climate change by implementing assessments and actions in accordance with our management strategies.

Risks Driven by Changes in Laws, Regulations and Systems

Changes in laws, regulations, and systems pose the risk of raising our operating costs through higher electricity prices.

The Act on Special Measures concerning the Procurement of Renewable Electric Energy by Operators of Electric Utilities, which came into force on July 1, 2012, stipulates that costs due to the feed-in tariff (FIT) will be recovered from users through a surcharge on electricity charges. Also, electricity prices have been hiked due to the tax introduced in October 2012 on the use of all fossil fuels for global warming countermeasures (environmental tax). As such, risks driven by changes in laws, regulations and systems have already materialized in the form of higher electricity costs.

FIT taxes are increasing with each passing year, resulting in the risk of higher electricity charges in the future. Since NTT Group uses more than 8 billion kWh of electricity each year to operate its telecommunications facilities in Japan, there is now the risk that we will suffer a severe financial impact.

* Scale of Assumed Risks: The environmental tax burden resulting from phased-in hikes has increased electricity charges by 0.11 yen/kWh, resulting in an additional financial burden of 720 million yen a year for NTT Group. In addition, we estimate the tax burden resulting from the FIT system will cause electricity charges to increase by between 2.9 and 3.45 yen/kWh. In this case, NTT Group will incur an additional financial burden of between 19.0 and 22.6 billion yen a year (estimated from actual electricity usage in fiscal 2019 of 6.45 billion kWh).

Risk Avoidance Measures

We have been pursuing measures for reducing electricity usage to minimize the increase in operating costs.

Specifically, we have reduced electricity usage by focusing on consolidating telecommunications equipment, which account for most of NTT Group's electricity usage, and upgrading to equipment with higher levels of energy efficiency (or carrying out upgrades ahead of schedule). We are also working to enhance air conditioning and power supply facilities by introducing air conditioner optimal control systems (Smart DASHR) and high-voltage direct current (HVDC) systems. With regards to electricity purchases, we have introduced systems to analyze electricity usage to reduce actual electricity charges.

Risks Driven by Rising Temperatures

Increases in electricity consumption by air conditioning equipment in response to rising temperatures may pose the risk of higher operating costs.

The equipment used at our telecommunications facilities and data centers is set to operate within a specific range of temperatures. Those exceeding this range could cause equipment shutdowns and failures. For this reason, we maintain room temperatures within a certain range, including through the use of air conditioners. When ambient temperature rises, the energy efficiency of air conditioners declines and that in turn raises electricity consumption.

Therefore, NTT Group faces the risk of suffering a severe financial impact due to increases in energy costs caused by rising electricity usage.

* Scale of Assumed Risks: We estimate that a 1°C rise in ambient temperature results in increasing electricity charges for air conditioning used at our telecommunication facilities and data centers between 0.1 and 0.3 yen/kWh. In this case, NTT Group will incur an additional financial burden of between 650 million and 2.0 billion yen a year (estimated from actual electricity usage in fiscal 2019 of 6.54 billion kWh).

Risk Avoidance Measures

We have been pursuing measures for reducing electricity usage related to air conditioning equipment to minimize the increase in operating costs.

Specifically, we operate air conditioner optimal control systems that save energy. We have installed wireless temperature sensor modules that automatically control the air conditioners in response to temperatures detected by the sensors. We

also seek to conserve electricity by maintaining appropriate temperature settings for air conditioners, by installing diffusers and blank panels to release exhaust heat from equipment, and by efficiently laying out double flooring to improve airflow and prevent hotspots.

In fiscal 2019, we invested approximately 8.1 billion yen into measures for reducing electricity usage, including those related to air conditioning facilities discussed above (service life of these measures: 15 years).

Opportunities Arising from Climate Change

Damage from such natural disasters as heavy rains and more frequent typhoons is becoming more common as the climate changes, and there is a growing risk of water and lightning damage and power outages, which also cause extensive damage when they occur. As a consequence, many companies need to take measures to ensure that if emergency situations such as disasters occur in the future, the organizations are able to continue important operations and restore order quickly.

NTT Group has developed a solution business that leverages its reliable track record and expertise in business continuity planning gained over 100 years of protecting and sustaining Japan's telecommunications, which cannot be allowed to be interrupted in the event of a disaster, and considers this to be an exceptional opportunity. NTT Group is able to develop a business for business continuity solutions across a wide range of fields, including the cloud technology from NTT Communications, NTT DATA, NTT COMWARE and Dimension Data, and the technology relating to buildings and power from NTT FACILITIES. In particular, NTT FACILITIES has been making substantial efforts toward winning new business.

In November 2016, the Paris Agreement took effect as the newest international set of rules on the curbing of climate change. This agreement establishes the goal of holding average worldwide temperature increases to below 2 degrees Celsius compared to before the Industrial Revolution. Currently, various measures are being considered to fulfill this goal. The utilization of ICT has been recommended as one of these measures. Utilizing ICT for energy management systems in communities, inside buildings, and inside the home will make it possible to reduce CO_2 and realize a low carbon society. Data centers are essential for such utilization.

NTT Group operates a large number of highly reliable and highly energy efficient data centers as part of its longstanding data center business that mainly involves NTT Communications, NTT DATA, NTT COMWARE and Dimension Data. We believe there will be growing demand for NTT Group's data centers, which possess a reliable track record and have the largest floor area in the world, because of the need to provide solutions to the environmental issue of climate change.

NTT Communications is now working to grow its global network of data centers with a clear goal set in order to continue enhancing and expanding the functions of its cloud services.

Adaptation to Climate Change

NTT Group is moving forward with initiatives for the adaptation of NTT Group and of society to play our part in adapting to climate change, and in developing and disseminating examples of adaptation.

Contributing to Adaptation to Climate Change

· Disaster-resilient telecommunications networks and equipment

NTT Group is striving to develop disaster-resilient telecommunications networks and equipment. These initiatives are disaster mitigation measures to continue providing telecommunications services in the event of a disaster as well as adaptation measures for disasters caused by climate change.

Adaptation of Society by Providing ICT

· Mobile ICT unit

We provide mobile boxes and automobiles equipped with communications, information processing and storage functions to enable the swift recovery of communication functions in areas affected by a disaster. We also offer functions for collecting data on the people affected. These services contribute to disaster prevention measures for society and adaptation measures for disasters caused by climate change.

Main Initiatives

Environmental Labeling System for Solutions

NTT Group has been implementing an environmental labeling system for solutions formulated in fiscal 2010, which enables us to communicate the environmental contributions made by ICT to customers in a manner that is easy to understand, and to promote Group environmental efforts.

Under the system, ICT solutions offered by Group companies that provide a certain level of environmental load reduction effects are certified as environmentally-friendly solutions and the companies are allowed to display the environmental label designated by NTT Group. A solution must meet the criteria of demonstrating a reduction rate of over 15% based on a quantitative assessment of the reduced volume of CO_2 emissions.

Certified solutions and their assessment results are published in the Environmental Labeling System for Solutions section

under NTT Group Environmental Protection Activities on the official NTT website. In fiscal 2019, 11 solutions were certified as environmentally friendly, bringing the total number of certified solutions to 78 (as of March 31, 2019).

* The Environmental Solution Label is a self-declared program (TYPE II) formulated by NTT Group.

Environmental Solution Label   https://www.ntt.co.jp/kankyo/e/protect/label/index.html

Group-Wide TPR Campaign to Reduce Electricity Usage

NTT Group has been working on Group-wide energy conservation activities named the TPR (Total Power Revolution) Campaign since October 1997 with respect to the electricity it consumes, which accounts for over 90% of the CO_2 emissions from its business activities. By promoting efficient energy management at buildings owned by NTT and installing energy-efficient electrical power units, air conditioning systems and telecommunications equipment, we managed to continue to reduce electricity usage across NTT Group by approximately 370 million kWh from projected levels in fiscal 2019.

Initiatives at Overseas Group Companies: Dimension Data

By January 2017, Dimension Data reduced its own CO_2 emissions to less than one million tons and it also became carbon neutral, meaning its own CO_2 emissions are less than those reduced through the utilization of ICT by its customers. Dimension Data established the goal to increase the amount of CO_2 emissions that can be reduced from the use of ICT by its customers to more than 1.8 million tons over its own emissions between October 2014 and October 2018. The company also declared that it would lower its own emissions to less than one million tons over the same four-year period, and this particular target was achieved ahead of schedule.

Dimension Data is focusing in particular on migrating servers to cloud systems and reducing the movement of people by utilizing visual communication technology for conserving energy with ICT. For example, moving servers to cloud services will help to reduce electricity consumption by about 4,000 kWh per server. Dimension Data is using such technologies and skills to achieve the goal of lowering customer CO_2 emissions by more than 1.8 million tons compared to its own emissions. Dimension Data's GHG emissions for fiscal 2017* were about 11 thousand t-CO_2e of Scope 1 (directly generated GHG emissions) and about 101 thousand t-CO_2e of Scope 2 (indirectly generated GHG emissions).

*July 2017-June 2018

Energy-Saving Data Centers

NTT Communications offers data centers with a PUE* of less than 1.2, and NTT COMWARE offers data centers with a PUE of less than 1.1, which are at the top worldwide for energy efficiency. We are striving to enhance PUE for our other data centers as well, introducing five-star equipment with the highest level of energy efficiency in accordance with the NTT Group Energy Efficiency Guidelines. NTT FACILITIES has been developing technology for reducing the electricity consumption of data centers by incorporating higher efficiency technology for electrical power units and air conditioning systems as well as central air conditioning control systems.

We are also operating some data centers using renewable energy and have installed a 5 kW solar power generating system at NTT East's Komagome Data Center. Solar power systems have also been set up at NTT East's Chiba Data Center, NTT West's Osaka Data Center, NTT Communications' No. 2, No. 4, No. 5, and No. 7 Tokyo Data Centers and the Takamatsu No. 2 Data Center, to contribute to the reduction of CO_2 emissions.

*   Power Usage Effectiveness: PUE is calculated by dividing the total power consumption of a data center by the power consumption of the computing equipment it houses. It is a figure larger than 1, with higher efficiencies represented by values approaching 1.

Initiatives for Establishing New Low-Energy-Consumption Technology

The development of ICT has dramatically increased the volume of information being transmitted through networks. Up to now, energy has been saved by enhancing power efficiency through the introduction and renewal of highly energy-efficient communications equipment. However, the performance and efficiency of integrated circuit technology which has grown in line with Moore's law, is thought to be approaching its limits in terms of speed and energy consumption due to the restrictions of nanoscale fabrication and integration density. NTT Laboratories is advancing research and development that incorporates optical technology into signal processing with the aim of using photonics to realize a base for a new kind of computing. This has resulted in the development of a modulator with the lowest ever reported energy consumption and an optical transistor which transfers a high-speed optical signal to another light with gain (announced in April 2019).

NTT Group is advancing the development of photonic technology and we have established the IOWN (Innovative Optical & Wireless Network) concept as one of the pillars of an all-photonic network that incorporates photonic-based technology throughout entire networks, including terminals. The target of this all-photonic network will be to realize power efficiency that is 100 times greater in areas where photonics technology is applied, and we expect it will radically reduce energy consumption. We are collaborating with global partners and specialists in a wide range of research and technological fields with the aim of realizing the IOWN concept.

Implementing Closed Loop Recycling

Relevant GRI Standards	● 103-1,2 ● 301-1,2,3 ● 303-1,2,3 ● 306-1,2,3,4,5
Relevant SDGs	6 CLEAN WATER AND SANITATION 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Our Approach

Although our one-way society of mass production, mass consumption and mass disposal has brought affluence and convenience to our lives, it has brought about various problems such as the creation of massive amounts of refuse, illegal dumping and concern about the depletion of natural resources. To resolve these issues we must first review how companies manage their businesses as well as our social and economic systems, and shift to a closed loop society.

In an effort to realize a future with closed loop recycling, NTT Group promotes the 3Rs (reduce, reuse and recycle), working to reduce the amount of materials consumed by our business activities and reuse or recycle the resources that are consumed.

Organization for Implementation

NTT Group has established a Closed-loop Recycling Committee, which works under the NTT Group Global Environmental Protection Promotion Committee. The Closed-loop Recycling Committee has the senior manager of NTT West's real estate planning department as its chair and the people responsible for the environment or facilities at eight major Group companies as members. The committee investigates and promotes closed loop recycling-related measures in NTT Group, promotes measures aimed at achieving our targets for waste disposal, considers targets and measures for resource procurement and retention, and manages the implementation of these measures.

Closed-loop Recycling Committee

- Construction Waste WG
- Decommissioned Telecom Facilities WG
- Business and General Waste WG
- PCB Storage and Disposal WG

The working groups (WG) under the committee advance activities according to their respective themes. The Construction Waste WG promotes measures and keeps track of results regarding the disposal of industrial waste produced by construction and public works, the Decommissioned Telecom Facilities WG promotes measures and keeps track of results regarding the disposal of industrial waste produced by decommissioned telecom facilities, the Business and General Waste WG promotes measures and keeps track of results regarding the disposal of office and business-related waste, and the PCB Storage and Disposal WG engages in the storage of PCB waste so that it can be disposed of in an appropriate way.

Targets and Results

NTT Group has established a target to continually achieve zero emissions by fiscal 2031 in which the final disposal ratio of waste generated by NTT Group is under 1%. We require a large amount of resources in order to sustain our business operations and provide various services including information communication. This is why we have set a target to contribute to both the avoidance of business continuity risks and achievement of closed loop recycling.

In fiscal 2019, the percentage of final disposal waste was 0.914%. We will continue to work hard to promote the 3Rs in order to achieve zero emissions again and maintain it until fiscal 2031.

Regarding decommissioned telecommunications equipment, we have achieved zero emissions for 15 consecutive years since fiscal 2005.

Main Initiatives

Reuse and Recycling of Telecommunications Equipment

NTT Group owns various types of telecommunications equipment and related items including telephone poles, switching equipment, communications cables, public telephone booths and public telephones. These are decommissioned and disposed of when they reach the end of their service life or are replaced during system upgrades for new services and so forth.

We promote the reuse, or recycling, of telecommunications equipment within NTT Group; for example: recycling concrete waste from discarded concrete poles as road building material. Public telephone booths and public telephones are taken to a specialized intermediate treatment plant, where parts of the booths are sorted into aluminum, stainless steel, glass and plastic. Similarly, the baseboards, copper wires and various plastics in the public telephones are meticulously sorted. They are then sent to a recycling plant to become recycled materials such as rare metals, copper and pellets. The recycling rate there is reflected in the precision, as a result of careful hand sorting, at the intermediate treatment plant.

To prevent the inappropriate treatment of the materials, such as illegal dumping, NTT East collaborated with NTT-ME

to construct a system that uses GPS and photography to confirm proper disposal from the site of discharge to the disposal plant.

Recycling Process for Mobile Phones

Containing gold, silver, copper, palladium and other metals, mobile phones could be regarded as a valuable recycling resource in Japan with its paucity of mineral resources. NTT DOCOMO has accordingly collected used mobile phones from customers since 1998 at its approximately 2,300 docomo shops throughout Japan, and through various events. In fiscal 2019, we collected about 5.91 million* mobile phones, bringing our cumulative total to 1,113.6 million units collected.

In fiscal 2012, the company introduced a new recycling process for pyrolyzing any plastic used in mobile phones to turn it into oil for use as a fuel, after which gold, silver and other metals are recovered from the residues of this process.

Through such initiatives, NTT DOCOMO took part in the "Making medals from urban mines! Everyone's Medal Project." Thanks to everyone's support, over the two years of the project we were able to recover a cumulative total of around 6.21 million mobile phones and gathered the volume of metal needed to manufacture the medals.

Going forward, we will continue to implement recycling initiatives and contribute to realizing a sustainable society.

* The number of units collected for reuse is included in the figure after fiscal 2016.

Making medals from urban mines! The "Everyone's Medal" Project WEB
https://medal-project.idc.nttdocomo.co.jp/#/boards/ourmedal (Japanese only)

Hazardous Waste

For NTT Group operations, hazardous waste as defined by law applies to asbestos contained in waste generated from construction work on relay stations, waste such as transformers and condensers containing PCBs, and lead batteries. These are disposed of appropriately and in compliance with the Waste Management and Public Cleansing Law (Waste Disposal Law) as well as other laws and regulations, and NTT Group does not have a record of disposing of such waste in foreign countries. We also pay meticulous attention to the proper storage and management of equipment containing PCBs and PCB contaminated wastes, and dispose of them with safe and appropriate methods in conformity with the Law Concerning Special Measures Against PCB Waste.

Water Management

Due to the nature of NTT Group's business, little water is consumed in our operations. In Japan, one-year domestic and industrial water consumption totaled 25.9 billion m^3*, while NTT Group's water consumption totaled 6.28 million m^3, only about 0.03% of the total for all of Japan. Moreover, our water use is spread out across the country and so we believe our water intake does not have any significant impact on water sources.

NTT Group reduces its consumption of tap water by using recycled wastewater and rainwater.

Research centers where we use chemical substances in our research activities implement individual measures against leakages of chemical substances into wastewater. For example, at the Atsugi R&D Center, which carries out research on the physical properties of materials, we have installed equipment to treat chemical-infused waste liquid discharged by the laboratories. Furthermore, we regularly monitor the quality of this wastewater to confirm that it is within legal regulation values. NTT Group has not been involved in any significant spills.

* From the Ministry of Land, Infrastructure, Transport and Tourism website: Actual water use in fiscal 2013 (water intake basis) was approximately 80.5 billion m^3 per year (domestic and commercial use of water: approximately 15.1 billion m^3; water for industrial use: approximately 11.5 billion m^3; water for agricultural use: approximately 53.9 billion m^3).

Paper Management and Recycling

Paper consumption of NTT Group in fiscal 2019 was 38 thousand tons. As for telephone directories, which account for more than 70% of our paper consumption, we established a closed loop recycling system in 1999 to collect old directories and recycle them to produce new ones. We undertake numerical management for our use of virgin pulp.

Also, we are working to reduce paper consumption of society through the use of ICT, which includes measures such as our Internet billing service* (electronic invoice).

* Internet billing service: A service enabling customers to check their charges and usage at any time online.

Planning a Future of Natural Harmony

Relevant GRI Standards ● 103-1,2 ● 304-1,2,3,4

Relevant SDGs

Our Approach

NTT Group's businesses have an impact on ecosystems. For example, the telecommunication equipment essential to our business operations, particularly telephone poles and communications cables, is installed in the natural environment. At the same time, we are sometimes affected by the ecosystem, for example communications cables are bit and damaged by squirrels or crows.

Ecosystems full of biodiversity provide the bounty, such as water and food, which is critical to supporting all forms of life on earth. NTT Group is working to preserve the ecosystems, which are the foundation of society's activities, while also considering the mutual influence between ecosystems and NTT Group.

Organization for Implementation

NTT Group has established a Natural Harmony Working Group, which works under the NTT Group Global Environmental Protection Promotion Committee. It is led by the senior manager of the NTT Environmental Protection Office and its members include the people responsible for the environment at the holding company and eight major Group companies. The working group investigates and promotes ecosystem preservation measures in NTT Group.

Main Initiatives

Environmental Assessments during the Construction of Data Centers and Other Buildings

When planning to construct new data centers or other buildings, we research the historical, social, geographical, biological and environmental attributes of the prospective building site and surrounding district based on our NTT Group Green Design Guideline for Buildings, and endeavor to reflect the necessary aspects in the facility's design.

For example, we use native plant species as vegetation for greening our data centers, which have in recent times become the core components of ICT infrastructure. When drawing up proposals for the construction of new data centers for customers, NTT Group applies the Comprehensive Assessment System for Built Environment Efficiency (CASBEE*) and submits proposals designed to obtain the highest CASBEE rank of S.

While paying due consideration to the environment in this way, we also take care to minimize noise and vibration and maintain the scenic appeal of the district during construction while endeavoring to ensure that exhaust heat and noise from the air conditioning outdoor units and emergency generators of functioning data centers will have minimal impact on neighboring areas.

* CASBEE: A system for the comprehensive assessment of the quality of a building from such perspectives as environmental performance, interior comfort and scenic appeal

Activities That Contribute to Preservation of the Ecosystem

As a company providing ICT services, we are working on contribution activities that harness our information dissemination capabilities. As with the portal site "Midori no goo" that makes it possible to contribute to environmental protection by using it, we are working to disseminate information and support information exchanges for raising greater awareness about the importance of the ecosystem among society.

In addition, we are working on tree planting and *satoyama** preservation with NTT Group employees working together in every corner of Japan.

* *Satoyama*: Traditional agricultural landscapes of Japan that are mosaics of arable land, woodlands and other types of land that have been exploited sustainably for centuries and support rich biodiversity

Environmental Performance Data

Environmental Management System

	unit	Fiscal 2015	Fiscal 2016	Fiscal 2017	Fiscal 2018	Fiscal 2019
Status of ISO 14001 Certification Acquisition (employee coverage)	%	43.7	46.7	47.1	47.9	45.1

* Note: Disclosure Boundary B

Realizing a Low Carbon Future

			Unit	Fiscal 2015	Fiscal 2016	Fiscal 2017	Fiscal 2018	Fiscal 2019
GHG emissions (Scope 1)			millions of t-CO_2e	0.217	0.197	0.19	0.185	0.164
GHG emissions (Scope 2)[2]			millions of t-CO_2e	4.86	4.69	4.40	4.21	3.29 (4.14)
CO_2 Emissions from Business Operations[1, 2]	Total CO_2 emissions (thousands of t-CO_2)		millions of t-CO_2e	5.07	4.87	4.58	4.38	3.44 (4.29)
	Breakdown	Use of electricity		4.836	4.665	4.375	4.183	3.259 (4.115)
		Use of gas and fuel		0.159	0.139	0.134	0.135	0.118
		Company vehicle operation		0.047	0.042	0.038	0.033	0.031
		Use of heat		0.026	0.027	0.029	0.027	0.029
Greenhouse Gas Emissions other than CO_2 Emissions (CO_2 emissions-equivalent)	Total GHG emissions other than CO_2		thousands of t-CO_2e	11	14	18	16	16
	Breakdown	CH_4		2	2	2	3	2
		N_2O		3	3	3	2	2
		HFC		3	5	10	7	7
		PFC		2	3	3	3	4
		SF_6		1	1	1	1	1
		NF_3		0	0	0	0	0
Electric Power Consumption	Electricity purchased[2]		billion kWh	8.95	8.74	8.36	8.23	6.54 (8.24)
	Renewable energy generated			0.09	0.09	0.09	0.08	0.07
Total amount of non-renewable energy used[2, 3]			billion kWh	10.11	9.77	9.36	9.20	7.43 (9.13)
Clean Energy Generation (Solar power, wind power, etc.)			thousand kWh	6,173	5,428	5,204	5,822	5,858
Number of Clean Energy Generators (Solar power, wind power, etc.)			units	178	184	258	336	360
Number of Low-Emission Company Vehicles (Hybrid vehicles, electric vehicles, natural gas vehicles, and methanol vehicles)			units	1,685	1,906	2,065	2,181	2,317
Fuel Consumption by Company Vehicles	Gasoline consumption		kl	16,235	14,642	12,545	10,631	10,111
	Diesel consumption		kl	3,576	3,316	3,347	2,970	2,701
	LPG/natural gas consumption		m3	11,792	6,969	12,937	30,760	39,320

[1] The CO_2 emissions from business operations exclude emissions of greenhouse gases other than CO_2.

[2] NTT Group provides equipment and the like necessary for other telecommunications carriers and data center providers to carry out their businesses. To date, we have included the fuel and electricity required for this equipment in our disclosed emission and consumption volumes in accordance with reporting methods outlined by the Act on Promotion of Global Warming Countermeasures. However, as calculation methods have been established based on the Ministry of the Environment's Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (ver. 2.1), we have adopted these for calculating the above CO_2 emissions as Scope 3. Emission amounts calculated using the previous method have been placed within parentheses. Similarly, for amounts of electricity purchased and total amount of non-renewable energy, from fiscal 2019 onward we are excluding the amount consumed by other telecommunications carriers and data center providers, and values calculated using the previous method will be placed within parentheses.

[3] For the total amount of non-renewable energy used, the volume of fuels such as gasoline and utility gas consumed have been converted into Wh values and added to the amount of electricity purchased. Although NTT Group Sustainability Report 2018 only reported values for the amount of electricity purchased, past values have been revised in line with the above method.

* Note: Disclosure Boundary B

Fiscal 2019 Scope 3 Emissions

Scope category	Scope and method of calculation	Emissions (millions of t-CO_2e)
GHG emissions (Scope 1 + 2 + 3)	–	20.69
Scope 1 (direct emissions)	–	0.16
Scope 2 (indirect emissions from energy use)	–	3.29
Scope 3 (indirect emissions from the value chain)	–	17.24
Category 1: Purchased goods and services	Calculation based on the number of units and monetary value of purchases of devices and services sold to customers	2.97
Category 2: Capital goods	Calculation based on capital investment costs on communications and other equipment	5.65
Category 3: Fuel- and energy-related activities not included in Scope 1 and 2	Calculation based on annual consumption by energy type	0.38
Category 4: Upstream transportation and distribution	Calculation based on weight and distance, or number of devices with regard to the transport of devices sold to customers	0.08
Category 5: Waste generated in operations	Calculation based on volume of waste by type	0.01
Category 6: Business travel	Calculation based on paid expenses for business travel	0.1
Category 7: Employee commuting	Calculation based on paid expenses for employee commuting	0.06
Category 8: Upstream leased assets[1]	Excluded from calculation[1]	–
Category 9: Downstream transportation and distribution[2]	Excluded from calculation[2]	–
Category 10: Processing of sold products[3]	Excluded from calculation[3]	–
Category 11: Use of sold products	Calculation based on number of service subscriptions, number of devices and monetary value of communications services and devices used by customers	5.38
Category 12: End-of-life treatment of sold products	Calculation based on number of service subscriptions, number of devices and monetary value of communications devices used by customers	0.05
Category 13: Downstream leased assets	Calculation based on average use of leased assets	0.87
Category 14: Franchises	Calculation based on total floor area of sales franchises	0.11
Category 15: Investments	Calculation based on Scope 1 and 2 emissions of investees in proportion to shareholding	1.59

[1] We have excluded Category 8 (upstream leased assets) from the calculation because the fuel and electricity used by leased assets is included in Scope 1 and 2 calculations.

[2] We have excluded Category 9 (downstream transportation and distribution) from the calculation because these emissions are almost entirely from our own transportation and use in our own facilities (included in Scope 1 and 2) or from outsourced transportation (included in Category 4).

[3] We have excluded Category 10 (processing of sold products) from the calculation because our main businesses involve no processing of intermediate products.

* Note: In fiscal 2014, NTT Group became the first telecommunications carrier in Japan to calculate and disclose emissions from all 15 Scope 3 categories based on actual data for that year, in addition to the emissions generated directly from fuel use, etc. (Scope 1) and emissions generated indirectly in conjunction with electrical and other energy use, etc. (Scope 2). We based our calculations on the Ministry of the Environment's Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.1). We will endeavor to improve the precision of our data collection while continuing to calculate and disclose Scope 3 emissions.

* Note: Disclosure Boundary B

Implementing Closed Loop Recycling

				Unit	Fiscal 2015	Fiscal 2016	Fiscal 2017	Fiscal 2018	Fiscal 2019
Final Disposal Ratio	All waste			%	0.88	0.82	1.03	1.18	0.91
	Decommissioned communications equipment			%	0.02	0.10	0.07	0.07	0.05
Waste and Final Disposal Waste	Total Waste			thousands of tons	596	680	608	531	562
	Recycling	Total amount of recycling			590	674	601	524	556
		Break-down	Recycled decommissioned telecommunications equipment		231	242	240	220	176
			Recycled construction works waste		156	244	175	133	223
			Recycled civil engineering works waste		157	141	140	129	115
			Recycled office waste		37	37	36	33	30
			Others		9	10	10	8	12
	Amount of waste reduced by incineration				2	1	1	1	1
	Amount of final disposal waste				5	6	6	6	5
Asbestos Removed from NTT Group Facilities	Total amount of asbestos removed			t	29	15	18	19	6
	Break-down	Buildings			9	6	5	4	4
		Bridges			20	9	12	15	2
Use of Water Resources	Water Use*			million m³	12.39	11.68	12.42	12.59	12.07
	Water Withdrawal (tap water)				-	-	-	-	6.275
	Volume of recycled wastewater and rainwater	Reused		thousands of m³	596	548	524	492	489
		Reuse rate*		%	4.8	4.7	4.2	3.9	7.2
Virgin Pulp Consumption	Total			thousands of tons	22	21	19	17	14
	Break-down	Telephone directories			13	15	13	12	9
		Telegrams			0.3	0.2	0.2	0.2	0.2
		Office paper			3	2	2	2	2
		Billing statements			6	4	4	3	3
Paper Consumption Reductions from NTT Internet Billing Services	Number of Internet billing service subscribers			millions	37.66	37.28	36.07	35.36	33.71
	Paper consumption reductions			t	5,488	3,384	3,362	3,216	3,082

* The reuse rate shown up to fiscal 2018 corresponds to the total volume of tap water and sewage, recycled water, and rainwater used, while the reuse rate for fiscal 2019 corresponds to the total volume of tap water, recycled water, and rainwater.

* Note: Disclosure Boundary B

Planning a Future of Natural Harmony

	Unit	Fiscal 2016	Fiscal 2017	Fiscal 2018	Fiscal 2019
Expenditures on Biodiversity Preservation Projects	million yen	105.0	488.0	421.4	544.7

Safety and Security

P052 **Reinforce Information Security**

Number of security experts

44,000

P055 **Personal Information Protection**

Number of incidents of personal information leaks

1

P057 **Ensure Stability and Reliability of Communications Services**

Service stability

100%

Safety and Security

CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators	KPI	Target Achievement FY	Result (FY)		
					2017	2018	2019
Reinforce information security	Train security experts	Number of security experts	-	-	31,000	39,000	44,000
Personal information protection	Prevent leaks of personal information	Number of incidents of personal information leaks	0	-	4	2	1
Ensure stability and reliability of communications services*3	Provide stable communications services free of major communications problems	Stable service provision rate*1	99.99%	-	99.99%	100%	100%
		Number of major accidents*2	0	-	2	0	0

*1 [1 – total hours under the impact of major accidents (number of affected users × hours of major accidents) / total hours of major service provision (number of users × 24 hours × 365 days)] × 100%

*2 Number of accidents that led to a suspension of telecommunications services or a decline in communications quality that meet the following criteria regarding duration and number of people affected:
- Emergency call services (110, 119, etc.): at least 1 hour affecting at least 30,000 users
- Voice services other than emergency calls: at least 2 hours affecting at least 30,000 users, or at least 1 hour affecting at least 100,000 users
- Internet-related services (free of charge): at least 12 hours affecting at least 1 million users, or at least 24 hours affecting at least 100,000 users
- Other services: more than 2 hours affecting 30,000 users, or more than one hour affecting 1 million users

*3 Targets of statistics: Four telecommunications business companies (NTT East, NTT West, NTT Communications, and NTT DOCOMO)

Reinforce Information Security

Relevant GRI Standards ● 102-12,18 ● 203-2
● 103-1,2 ● 418-1

Relevant SDGs

Policies and Concepts

With the progressing digitalization of society and the economy and changes in international circumstances, security threats are becoming more serious and sophisticated, particularly cyber-attacks. Within this environment, NTT Group has a responsibility to protect ICT service infrastructure and customers' basic rights, freedoms, and information assets, as well as to provide a sound foundation for the growth of the digital economy.

When formulating our medium-term management strategies in 2018, we made it our mission in terms of security to contribute to the building and development of a free, open, and safe ICT platform for supporting the infrastructure of the digital economy. We also made it our vision to realize the digital transformation of both customers and NTT itself, and for that reason, we will be chosen by customers.

In order to realize these, we will strive to engage in research and development that leverages the scale of the Group, realize superior abilities for rapid detection and response, cultivate human resources who share the values of sincerity and advanced skill, and transcend profit-focused principles to transmit pioneering knowledge to society.

The appropriate handling of personal information is a focus of growing interest worldwide and it is also important to have countermeasures to large-scale, sophisticated cyber-attacks targeting things like international events. As a member of the global community building the digital society, NTT Group will contribute to solving social issues through our security business.

NTT Group's Information Security Policy

In order to continue supplying safe, secure services at all times and remain to be a company relied on by customers forever, NTT Group, as one of the responsible companies that shoulder the information communication industry, shall strive to maintain the security of information and contribute to the sound development of ubiquitous broadband society in accordance with the following policy.

(1) With a strong recognition of the importance of information security in ubiquitous broadband society, the Group shall strive to create a safe, secure, convenient communication environment and maintain information security.
(2) All the board members and employees of NTT Group shall fully recognize that protecting information is the base of the Group's business activities and an important social responsibility of any company, and the Group shall strictly observe the secrecy of communications and comply with the relevant laws and regulations, including the Personal Information Protection Act.
(3) The Group shall reinforce its organization for maintaining information security, take thoroughgoing measures to prevent illegal access to information and loss, alteration, leak, etc. of information and implement activities necessary for protection of information, including thoroughgoing employee education and proper supervision of contractors, on a continual basis.

NTT Group's Information Security Policy　　　https://www.ntt.co.jp/g-policy/e/index.html

Organization for Implementation

NTT Group enforces information security management under the charge of the Chief Information Security Officer (CISO), and is thorough in its information security management. We have also established a Group CISO Committee, and formulate Group information security management strategies, plan and implement related measures, undertake human resources training, and otherwise engage in activities in collaboration with companies across the Group.
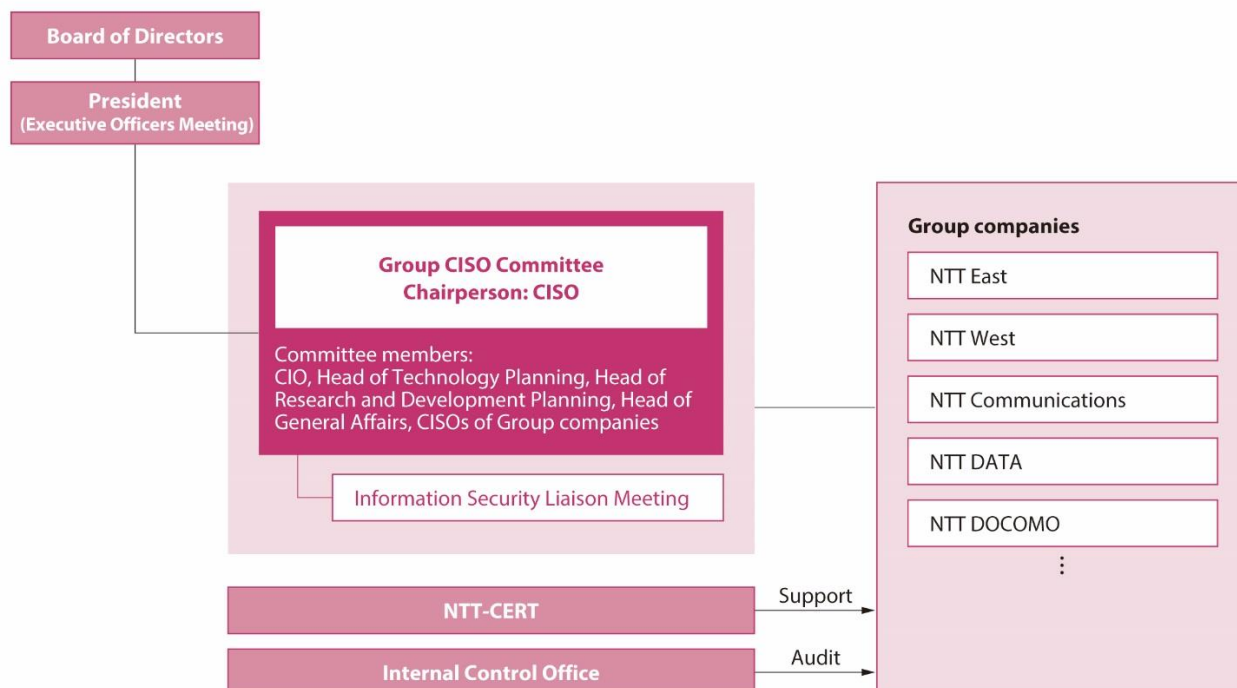
Main Initiatives

Strengthen Service Security

Information communication services are an important social infrastructure and a foundation for the digitalization of society and the economy, so to provide these services in a safe and secure manner, we are working to strengthen the security of telecommunications equipment, IT service environments, and all services provided by smart cities, smart buildings, and the like.

Global Cooperation within NTT Group

With the integration of our global businesses, we are advancing global partnerships in the security field. This NTT Group cooperation includes many businesses and regions and incorporates an approach to risk-based management, the introduction of a framework that acts as a shared language, and the setting of standards that should be met by all Group members in regard to identification, defenses, detection, response, and recovery.

Engaging with and Contributing to the Global Community

We are engaging with the cybersecurity initiatives of governments and industries around the world, particularly in North America and Europe, by sharing information and best practices in regard to security threats and building a community of companies and organizations based on mutual trust.

Training Security Experts in NTT Group

As a measure to enhance security personnel development with the aim of improving in terms of both quantity and quality, NTT Group companies are implementing human resource development measures based on the types and levels of security personnel.

NTT Group's Security Personnel Hierarchy

Level		Title	Job classification		
			Security management consulting	Security operation	Security development
Advanced		Security master	Produce first-rate experts with best performance in the industry		
		Security principal			
	Intermediate	Security professional	Reinforce the pool of specialists with deep experience and judgment		
	Beginner	Security expert	Raise the level of workers who can do their work with the required knowledge		

Research and Development Initiatives

In addition to advancing the technological development of service security, we are focusing on developing elemental security technologies. We have newly established a global research center for research into cybersecurity and encryption technology centered around some of the world's leading researchers.

Management of CSIRT

NTT Group established NTT-CERT[1] in 2004 to function as a computer security incident response team (CSIRT). This team collects information regarding security incidents associated with the Group. It then offers support for addressing these incidents, formulates measures to prevent recurrence, develops training programs, and provides security-related information. As a central element of NTT Group's security initiatives, NTT-CERT provides a reliable venue for consultations regarding information security. The team also collaborates with organizations and specialists inside and outside NTT Group to offer support for detecting and resolving security incidents, minimizing damages, and preventing occurrence. NTT-CERT is thereby contributing to better security for both NTT Group and societies that are permeated by information networks.

Moreover, NTT-CERT coordinates with the United States Computer Emergency Readiness Team (US-CERT[2]) and the Japan Computer Emergency Response Team Coordination Center (JPCERT/CC[3]) and is also a member of the Forum of Incident Response and Security Teams (FIRST[4]) and the Nippon CSIRT Association,[5] which enables it to coordinate with domestic and overseas CSIRT organizations. This coordination makes it possible for NTT-CERT to share information on relevant trends and response measures. In addition, NTT-CERT participates in the cross-industry drills held by the National Center of Incident Readiness and Strategy for Cybersecurity (NISC) to share expertise and gather information. NTT-CERT also plays a role in promoting the establishment of CSIRTs at Group companies and helping improve their response capabilities.

NTT-CERT will expand its collection of information on vulnerabilities and attacks to cover areas including the dark web, and will strengthen its information analysis platform and further automate and enhance its response to cyber threats in order to continually respond to threats as they change.

*1 NTT-CERT: https://www.ntt-cert.org/index-en.html
*2 US-CERT: An information security preparedness organization under the Department of Homeland Security (DHS)
*3 JPCERT Coordination Center: An organization that collects reports inside Japan, supports responses, monitors situations, analyzes entry points, and reviews and provides advice on measures for preventing reoccurrences from a technical standpoint with regard to computer security incidents such as intrusions through the Internet or service interruptions
*4 FIRST: Forum of Incident Response and Security Teams   https://www.first.org/
*5 Nippon CSIRT Association: https://www.nca.gr.jp/en/   NTT-CERT founded the Nippon CSIRT Association

NTT Group's CSIRT Activity
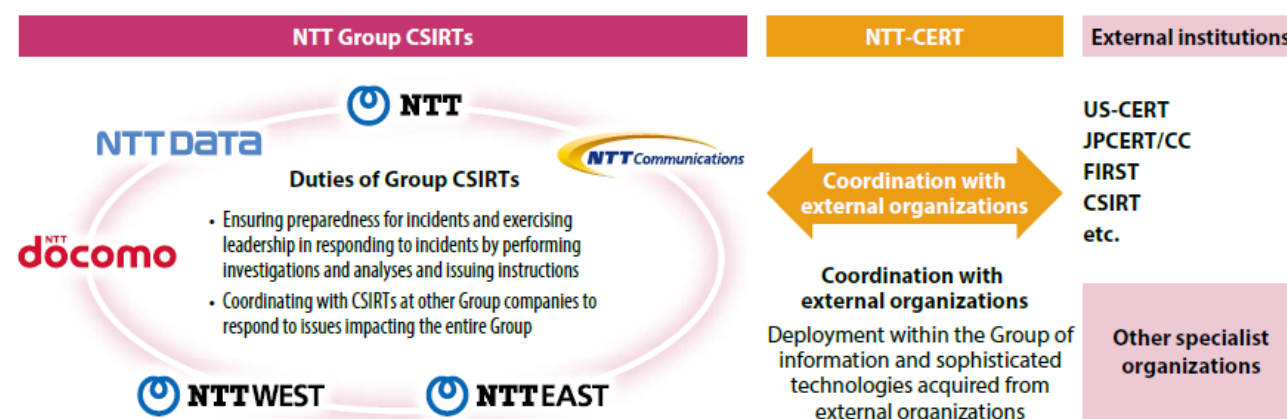
Personal Information Protection

Relevant GRI Standards ● 103-1,2 ● 418-1

Relevant SDGs

Policies and Concepts

NTT Group has been entrusted with a considerable quantity of personal information, ranging from data on individual customers to that of corporate customers. In recent years, our customers' concern over protection of personal information has only increased, while the importance of enforcing personal information protection and information management is growing in terms of laws and regulations, as seen in the revision of Japan's Act on the Protection of Personal Information in 2017 and the enactment of the EU's General Data Protection Regulation (GDPR) in 2018.

Under these circumstances, the occurrence of a personal information leak could have various repercussions for NTT Group in the operations of its businesses, including damage to its corporate value and loss of customers, which makes it essential to rigorously manage personal information as a top priority.

Organization for Implementation

Under the NTT Group Information Security Policy, we disclose on our website specific policies for protecting the personal information of customers and shareholders and policies for protecting specific personal information required by Japan's Social Security and Tax Number System. In this policy, we also define how we respond to requests for disclosure, correction, and suspension of use related to the personal information retained by NTT Group. We have also put in place a security management system that ensures thorough and rigorous security practices, with the Chief Information Officer (CISO) placed in charge (see page 052).

Policy on Protecting Personal Information (Japanese only)

Policy on Protecting Personal Information of Customers	https://www.ntt.co.jp/kojinjo/e/customer.html
Policy on Protecting Personal Information of Shareholders	https://www.ntt.co.jp/kojinjo/e/shareholder.html
Policy on Protecting Specific Personal Information of Business Partners	https://www.ntt.co.jp/kojinjo/e/protection_bus.html
Policy on Protecting Specific Personal Information of Shareholders	https://www.ntt.co.jp/kojinjo/e/protection_share.html

Main Initiatives

NTT has systematic security control measures, human security control measures, physical security control measures, and technical security control measures in place for handling our customers' personal information.

1) Systematic security control measures

We have created a statement outlining the building of management systems such as placing a person responsible for management of the committee and each organization, the establishment of internal regulations, management ledgers and process management charts, and other matters. Furthermore, we are also building management systems for handling ongoing improvements and the like.

2) Human security control measures

All employees who handle customers' personal information are informed and made aware of the importance of protecting this information, regardless of whether they are officers, regular employees, or temporary employees. We ensure employees conclude non-disclosure agreements and provide necessary auditing and supervision to ensure their effectiveness.

3) Physical security control measures

We enact various measures including controlling access to physical equipment which handles customers' personal information and the floors where these are kept, measures to prevent theft, measures to prevent damage to customers' personal information during incidents such as fires and lightning strikes, and the use of locks when taking out, moving, or storing systems and documents.

4) Technical security control measures

We have put in place various technical security control measures such as access management when accessing personal data including authentication, authority administration, control, and recording, countermeasures against viruses and malware in systems, measures for use when sending and receiving information including encryption and clarification of responsibility, and the monitoring of information systems.

Each domestic company in the Group has established a personal information protection system in line with its business and based on the revised Act on the Protection of Personal Information. Specifically, each company has set forth internal rules and regulations, conducts training for employees to ensure appropriate operation of the regulations, and has established an organization to promote information security management. We have established a system for ensuring security by preventing illegal access to information or the loss, alteration, or leak of information as well as managing antivirus measures and the physical transfer of information. Along with these stringent measures on the physical and systems aspects of security, we also appropriately supervise outsourcing contractors.

In addition, NTT Group companies that conduct business globally conform to the laws and regulations of the various countries.

To conform to the EU's General Data Protection Regulation (GDPR) enacted in May 2018, Group companies are promoting compliance following discussions within NTT Group. They implement the measures necessary for the acquisition of personal information and its transfer outside of the EU, and, based on the EU regulation and other countries' regulations, are taking actions with respect to the sharing of employee information among NTT Group companies in Japan and overseas.

Establishment of Contact Points on Personal Information

NTT has set up the Customer Contact Point on Personal Information, and similar contact points for services related to personal information have been set up at each NTT Group company. Since NTT is a holding company that does not directly provide telecommunications services, inquiries regarding personal information related to services are redirected to the contact points of the operating companies concerned.

Additionally, inquiries regarding the handling of personal information under laws and regulations are redirected to the person responsible for information security at the operating companies concerned.

Nippon Telegraph and Telephone Corporation Customer Contact Point on Personal Information
Tel: 81-3-3201-1198 (charges apply, in Japanese only)
(Operating hours: 10:00–12:00, 13:00–17:00, closed on Saturdays, Sundays, holidays, and New Year's holidays.)
https://www.ntt.co.jp/kojinjo/e/customer.html

Ensure Stability and Reliability of Communications Services

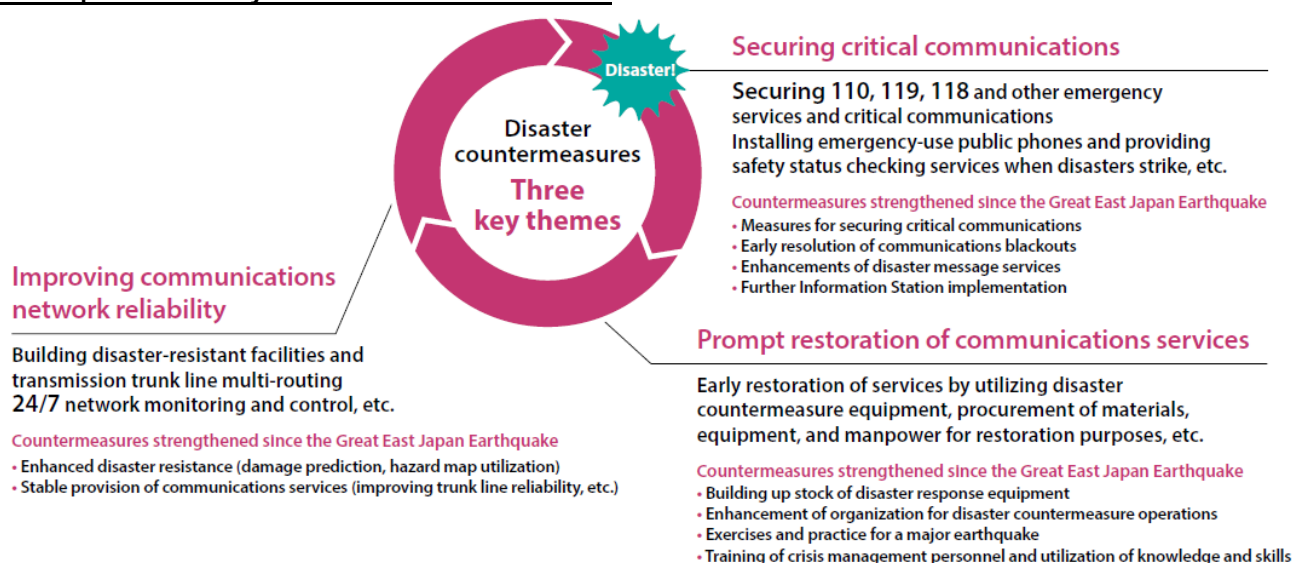Relevant GRI Standards ● 103-1,2 ● 417-1 ● 203-1

Relevant SDGs

Policies and Concepts

It is critical to secure communications important in saving people's lives, such as the communications necessary for maintaining public order and for rescue and restoration operations at times of disasters, and for emergency communications, such as 110, 118, and 119. Japan is a country particularly prone to natural disasters such as earthquakes and typhoons. The importance of telecommunications networks was reaffirmed by the devastating Great East Japan Earthquake. Facing the possibility of an earthquake directly underneath Tokyo or the Nankai Trough off Japan's southern coastline, there is a pressing need for society to prepare for such potential disasters while ensuring the stability and reliability of its telecommunications infrastructure.

NTT Group has defined three key themes for disaster countermeasures: securing critical communications, prompt restoration of services, and improving network reliability. We have been strengthening efforts based on these themes since the Great East Japan Earthquake.

NTT Group's Basic Policy on Disaster Countermeasures

Disaster countermeasures Three key themes

Securing critical communications

Securing 110, 119, 118 and other emergency services and critical communications
Installing emergency-use public phones and providing safety status checking services when disasters strike, etc.

Countermeasures strengthened since the Great East Japan Earthquake
- Measures for securing critical communications
- Early resolution of communications blackouts
- Enhancements of disaster message services
- Further Information Station implementation

Prompt restoration of communications services

Early restoration of services by utilizing disaster countermeasure equipment, procurement of materials, equipment, and manpower for restoration purposes, etc.

Countermeasures strengthened since the Great East Japan Earthquake
- Building up stock of disaster response equipment
- Enhancement of organization for disaster countermeasure operations
- Exercises and practice for a major earthquake
- Training of crisis management personnel and utilization of knowledge and skills

Improving communications network reliability

Building disaster-resistant facilities and transmission trunk line multi-routing 24/7 network monitoring and control, etc.

Countermeasures strengthened since the Great East Japan Earthquake
- Enhanced disaster resistance (damage prediction, hazard map utilization)
- Stable provision of communications services (improving trunk line reliability, etc.)

Organization for Implementation

Five Group companies —NTT, NTT East, NTT West, NTT Communications, and NTT DOCOMO— are designated public institutions under the Basic Act on Disaster Control Measures. Accordingly, based on this Act, in preparation for a disaster, NTT Group has formulated the Disaster Management Operation Plan for the purpose of smooth, appropriate implementation of measures to prevent damage.

We are taking measures to improve the reliability of our telecommunications infrastructure. To ensure that our communications services operate without interruption at all times, we employ transmission trunk line multi-routing, have enacted blackout countermeasures for communications buildings and base stations, and are making communications buildings more quake-proof. In addition, we are expanding the assortment of power supply vehicles and other disaster response equipment that we have positioned throughout Japan, and are repeatedly conducting training to prepare for major natural disasters. We are making a daily effort to guarantee that, in the event of a disaster, we are able to immediately set up a Disaster Countermeasures Office and other emergency structures and secure the necessary emergency and critical communications.

Main Initiatives

Securing Critical Communications

To secure necessary communications in the event of a disaster, NTT Group is implementing various response measures, including the installation of emergency-use public phones, a mobile phone lending service in affected areas, and providing means to confirm the safety of people in affected areas.

We simultaneously install multiple lines to secure connections to the headquarters of the police department, fire department, and coast guard to prepare against the possibility that the 110, 119 and 118 emergency call services may be damaged.

A major disaster could also lead to social disorder, such as the disruption of transport systems. In such an event, we would consider the overall situation, including whether other telecommunications carriers have put restrictions on mobile and fixed line phones and, if necessary, offer the use of public phones for free.*

* We will not charge carriers for which we have set call fees and will not settle payments between carriers for which we have set connection fees. For the specific names of carriers, please refer to the following websites. (Japanese only)

Free charge public phone policy for areas covered by NTT East http://www.ntt-east.co.jp/info-st/saigai/index.html
Free charge public phone policy for areas covered by NTT West https://www.ntt-west.co.jp/ptd/basis/disaster.html

Providing Services for Easy Safety Status Checking and Information Gathering When Disaster Strikes

To enable people to check the safety of relatives and friends in areas hit by a major disaster that has caused phone connection problems, NTT Group provides 171 Disaster Emergency Message Dial for leaving voice messages by phone, the Disaster Message Board Service (i-mode/sp-mode) for leaving text messages by mobile phone, the Disaster Voice Messaging Service (i-mode/sp-mode/mopera U) for leaving voice messages reporting the status of personal safety and the Web 171 Disaster Message Board for leaving text messages via the Internet. When we launch these emergency services in the event of a disaster or other contingency, we promptly inform our customers through the mass media, website and other means.

By integrating the Web 171 Disaster Message Board with the Disaster Message Board Service for mobile and PHS phones (i-mode/sp-mode), we have also made it possible to conduct one-stop searches spanning both services from the companies providing those services. There are additional functions for notifying designated contacts by e-mail or voice when safety status information is posted. We are continuing to make improvements, such as by offering support in English, Chinese and Korean for the Web 171 Disaster Message Board, and in English for the Disaster Message Board Service (i-mode/sp-mode), increasing the number of messages that can be posted and extending message storage time.

Securing the Stability and Reliability of Communications Services

NTT Group is devoted to early restoration of communications services by deploying and enhancing the functions of mobile power supply vehicles, portable satellite equipment and other mobile equipment as well as participating in disaster drills held in the respective regions. NTT Group endeavors to build disaster-resistant communications infrastructure and maintain and operate it in a way that ensures its proper functioning at all times by conducting regular safety patrols, replacing devices as a preventive maintenance measure, and other such means, in an effort to develop disaster-resilient communication networks and equipment.

Ensuring the Disaster Resistance of Communications Equipment

We also strive to enable communications equipment housings, pylons and other facilities to withstand contingencies such as earthquakes, storms, flooding, fire and power outages in accordance with predetermined design standards.

For example, NTT's communications buildings and pylons are designed to withstand earthquakes of a seismic intensity of 7 on Japan's intensity scale, and 60 m/sec winds experienced during the strongest typhoons. Our facilities are equipped with flood doors and other defenses according to location to prevent inundation of communications equipment by tsunamis or floods. We also equip our communications equipment rooms with fire doors or shutters. Our communications buildings and wireless base stations are fitted with backup power sources to keep them running for extended periods in the event of sudden power outages, and as a further fallback, power supply vehicles can be hooked up to them to supply power. We use trunk line multi-routing to ensure that our communications services operate without interruption at all times. We are also deploying large-zone base stations capable of covering wide areas in disaster and other emergency situations, and installing emergency power supply fuel tanks.

Operation of mobile phone base stations and terminals (NTT DOCOMO)

For more than half a century, research has been conducted worldwide on the impact of radio waves on the human body. As a result, standards and systems have been put in place for the safe use of radio waves not only in Japan, but around the world, too.

In 1990, Japan's Ministry of Posts and Telecommunications (presently the Ministry of Internal Affairs and Communications) established its own Radio Radiation Protection Guidelines for Human Exposure to Electromagnetic Fields (RRPG) as a set of reference values for the safety of radio waves on the human body based on the results of research conducted over the preceding 40 years both inside and outside Japan. The reference values of these guidelines are the same as those recommended by the World Health Organization (WHO). Radio waves below these reference values are recognized internationally as having no adverse effects on health.

Mobile base stations and terminals of NTT DOCOMO are operated at levels lower than the reference values of the RRPG. Services are provided in compliance with related laws and ordinances incorporating the RRPG, which ensures DOCOMO mobile phones can be safely used.

NTT DOCOMO Radio Wave Safety https://www.nttdocomo.co.jp/corporate/csr/network/radio/safe.html (Japanese only)
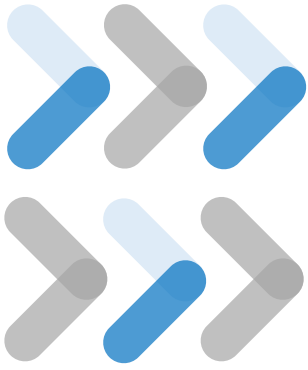
United NTT

P061 Promote Diversity

Ratio of female managers

5.7%

P063 Respect for Human Rights

Percentage of participation in training concerning human rights

96.6%

P066 Reinforce Value Chain Management

Number of confirmed high-risk suppliers

0

P069 Ensure Employee Safety

Number of accidents causing injury or death during construction work

8

P070 Promote Health Management

Implementation rate of specified health guidance

33.3%

United NTT

CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators	KPI	Target Achievement FY	Result (FY)		
					2017	2018	2019
Promote diversity	Aggressively promote the active participation of women	Ratio of female managers	6.0%	FY2021	4.6%	5.1%	5.7%
	Expand employment of people with disabilities	Employment rate of people with disabilities[2,3]	2.2%	-	NTT: 2.4%	NTT: 2.6%	NTT: 2.7%
					Major NTT Group Companies in Japan: 2.3%	Major NTT Group Companies in Japan: 2.5%	Major NTT Group Companies in Japan: 2.6%
					All Group companies in Japan: 2.1%	All Group companies in Japan: 2.3%	All Group companies in Japan: 2.4%
Respect for human rights	Conduct business activities with respect for human rights at all business locations by introducing the United Nations Guiding Principles on Business and Human Rights (Ruggie Framework) and other international principles	Number of confirmed human rights violations	0	-	17	27	24
		Percentage of participation in training concerning human rights[4]	More than in the previous fiscal year	-	97.0%	98.0%	96.6%
Reinforce value chain management	Appropriate management of environmental and social risks, including value chains	Number of confirmed high-risk suppliers	0	-	0	0	0
Ensure employee safety	Enhance safety measures and the safety mindset of employees in order to prevent accidents causing injury or death and industrial accidents	Number of industrial accidents	0	-	18	9	8
		Number of accidents causing injury or death during construction work [5]	0	-	4	3	3
Promote health management	Create an environment that raises each individual employee's motivation and dynamism while enabling them to continue to work healthily and energetically	Implementation rate of specified health guidance	31%	-	19.1%	22.9%	33.3%
		Ratio of non-smokers[1]	79%	-	74.1%	75.0%	75.8%
Create attractive workplaces	Provide workplaces where employees can work with good spirits	Employee satisfaction	Better than in the previous fiscal year	-	3.83 (Out of 5)	3.79 (Out of 5)	3.80 (Out of 5)
Promote a united Group effort on social contribution activities	Employees actively participate in volunteer activities	Number of times employees participated in social contribution activities	More than in the previous fiscal year	-	114,256	117,491	123,734
		Number of times employees participated in activities through the Group's internal volunteer site[1] [Number of people registered]	2,000/year [10,000]	- [FY2021]	-	1,340/year [5,523]	1,814/year [9,288]

*1 Newly established in fiscal 2020

*2 Results as of June 1 of the following year

*3 45.5 or more employees

*4 Includes e-learning and other similar types of training

*5 Construction by partner companies and directly managed construction

Promote Diversity

| Relevant GRI Standards | ● 102-8 ● 103-1,2 ● 401-1,2 |
| | ● 404-2 ● 405-1 |

Relevant SDGs

Policies and Concepts

As a global ICT group company, NTT Group must create innovation to breed new value and address the needs of various users around the world.

To respond to dramatic changes in the markets and meet diversifying customer needs, as well as to become a consistently selected Value Partner, we believe that respecting and making use of the individuality of employees and their differing values is essential. We also believe that ensuring diversity and creating workplaces in which people respect each other will lead to unprecedented breakthrough innovations. Accordingly, NTT Group works on creating diverse workplaces in which people can realize their full potential irrespective of sex, age, race, nationality, disability, sexual orientation, gender identity, or other factors.
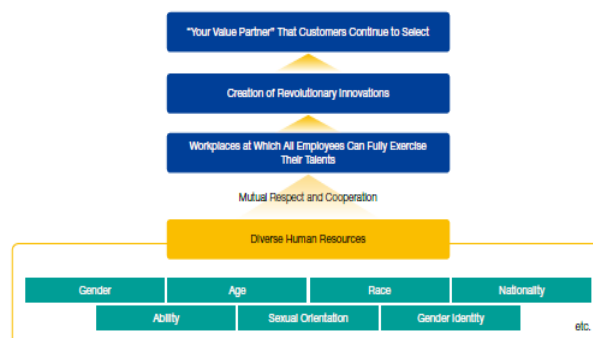
Organization for Implementation

NTT Group has positioned diversity and inclusion as an important management strategy and the president himself is communicating inside and outside the Group the importance of accepting a diverse range of values. We are working to implement initiatives aiming for diversity and inclusion companywide.

In October 2007, NTT established the Diversity Management Office to bolster efforts to create an environment which enables participation by diverse human resources across the whole Group, and by April 2008, diversity promotion supervisors were in place in Group companies. The Diversity Management Office and diversity promotion supervisors continue to cooperate to promote diversity and inclusion, to support work-life management and career development, and to conduct educational activities aimed at reforming corporate culture and ingrained practices.

Every year, we hold a diversity promotion meeting with each Group company to share their activities and discuss future diversity promotion measures for the Group based on female employee ratios by position, the status of hiring people with disabilities, and other diversity management parameters. Also, management meetings attended by directors are held when necessary to report on and discuss diversity-related initiatives, which are then promoted companywide.

Main Initiatives

Creating Workplaces Where Everyone Can Realize Their Full Potential

NTT's Diversity Management Office and each NTT Group company's diversity promotion staff work together to support employees' work-life management as well as career development for an increasingly diverse workforce, and conduct educational activities aimed at reforming corporate culture. Also, in senior manager training that brings in participants from around the globe, we discuss diversity and promote the utilization of a diverse workforce across the entire NTT Group.

Promoting Active Female Participation

NTT Group provides appropriate compensation to all employees, regardless of gender, adopting equal payment as stipulated in the Equal Employment Opportunity Law, and works across its whole organization to promote active female participation. In 2013, we announced a plan to double the current ratio of female managers by FY2021. This plan targets a ratio of female managers (section manager level or higher) of 6.0%, more than double the ratio of 2.9% recorded at the end of FY2103. An example of activities carried out under this plan are the NTT Group joint forum and training sessions for female employees that have been carried out as needed since FY2011 with the aim of encouraging network building and further participation in activities. These activities provide valuable opportunities for female employees at each Group company to exchange opinions, share issues, and raise motivation.

Additionally, NTT holds career support training for employees taking childcare leave or returning to work after childcare leave and the participants' supervisors also attend management training concerning employees who return. Furthermore, our 6th Plan of Action for General Employers under the Act on Advancement of Measures to Support Raising the Next Generation of Children formulated in March 2019 includes a target aiming for 50% or more of male employees to take leave to engage in childcare and we are encouraging male employees to take childcare leave to deepen the understanding of childcare among men and widen their horizons through this participation.

Expanding Employment Opportunities for People with Disabilities

NTT Group has established special-purpose subsidiaries to actively recruit people with disabilities and expand hiring opportunities for them, and it endeavors to create pleasant, agreeable workplaces. Special-purpose subsidiaries engage in activities that leverage the unique characteristics of employees with disabilities.

As examples, we assess problem areas in website accessibility, perform web accessibility diagnostics that offer reports with suggestions for improvements, and conduct training taught by people with disabilities to foster understanding of disabilities. People with varied disabilities work at our special-purpose subsidiaries, and observing the stance of management at these special purpose subsidiaries leads to a renewed awareness of management and work styles.

We also collaborate with NTT Laboratory and other partners to participate in monitoring and consulting for universal design, verifying technologies and services from the perspectives of people with disabilities, and employees with disabilities participate in operations within NTT Group's value chain, including facilities-related operations at NTT East.

NTT Claruty https://www.ntt-claruty.co.jp/ (Japanese only)
NTT West Lucent http://nttwest-lucent.co.jp/ (Japanese only)
NTT DATA DAICH http://www.nttdata-daichi.co.jp/ (Japanese only)
Docomo PlusHearty http://www.docomo-plushearty.com/ (Japanese only)

Continuous Employment of Employees at Retirement Age

In 1999, NTT Group introduced a continuous employment program for employees who have reached the retirement age of 60 in response to employee needs and public expectations regarding elderly employment.

Furthermore, from the standpoint of making maximum use of limited human resources in managing NTT Group's businesses in the future, we introduced a new program in October 2013 that will enable applicants to continue working in a way that fits their lifestyles up to the age of 65 and demonstrate their abilities by putting their experience to work.

Rehiring Program for Employees Who Resigned

A significant number of employees who left the Company for reasons such as childcare, care for parents or the relocation of their spouse aspire to resume work at NTT Group in the future. To respond to their requests and to effectively use the experience and skills they had acquired during their previous period of employment, NTT has established a rehiring program.

The program applies to employees who worked more than three years and were forced to leave due to their need to care for children under the age of the third grade of elementary school or elderly family members, or due to their inability to continue commuting because of the change of address necessitated by the relocation or career change of their partner, or by marriage. A request for reinstatement is followed by interviews and a health checkup, and the Company decides whether or not to reemploy them.

Consideration for LGBT and Other Gender Minorities

NTT Group is advancing initiatives to support sexual minorities such as people identifying as LGBT. To realize an organization and a society in which everyone can live and work as themselves regardless of sexual orientation or gender identity, in 2016 we clearly expressed our stance of applying programs related to important life events, such as marriage leaves, bereavement leaves, congratulatory/condolence money, and the sending of congratulatory/condolence telegrams, to same sex partnerships. In 2018, we extended all allowances, benefit programs, and other programs involving spouses and families to same-sex partners as well. These initiatives were well-received and in PRIDE Index 2018, an index established by a volunteer organization called work with Pride to evaluate corporate activities for sexual minorities and the LGBT community, 16 NTT Group companies were recognized with the highest-level Gold status.

In April 2019, we participated in the Tokyo Rainbow Pride 2019 parade, an event held for people who identify as LGBT and their supporters. This was NTT Group's first time participating in such an event and around 200 employees from 21 Group companies marched at the parade.

Initiatives at Overseas Group Companies

South Africa, where Dimension Data, a subsidiary of NTT, is headquartered, adopts the policy of Broad-Based Black Economic Empowerment (B-BBEE) to enhance the status of people who had been disadvantaged by discriminatory treatment during the apartheid era. Under B-BBEE, which is used as an assessment standard by the Government of South Africa, companies are rated on a scorecard showing their level of contribution with regard to ownership, management, employment equity, skills development, preferential procurement, enterprise development and socio-economic development. Dimension Data has attained its performance targets for all of these criteria, scoring 86.14 out of 100 as of 2015. As a result, it has been recognized as a Level 2 contributor, the second highest possible recognition in the eight level B-BBEE system.

Respect for Human Rights

Relevant GRI Standards ● 102-12,16,33 ● 103-1,2 ● 406-1 ● 407-1
● 408-1 ● 409-1 ● 411-1 ● 412-1,2

Relevant SDGs

Policies and Concepts

As a corporate group that is actively growing on the global stage, NTT Group recognizes that respecting human rights is an important social responsibility of companies. Under this recognition, we believe that we must strengthen respect for human rights, and our human rights management, toward all people involved in NTT Group's value chain. We established NTT Group's Human Rights Charter in 2014 to express this principle. This charter clearly defines the human rights to be respected as internationally recognized human rights, and we take the rights stipulated under the Universal Declaration of Human Rights and the International Bill of Human Rights, and under the eight core principles of the ILO Declaration of Fundamental Principles and Rights at Work, to be the minimum standards that require compliance. As a method of managing respect for human rights, we have adopted the approaches of the United Nations' Guiding Principles on Business and Human Rights and ISO 26000. Furthermore, we have separately laid out Basic Policies on Human Rights based on the charter in the effort to solve various human rights issues.

The NTT Group's Human Rights Charter

We recognize that the respect for human rights is a corporate responsibility and aim to create a safe, secure and rich social environment by fulfilling its responsibility.

1. We[1] respect internationally recognized human rights,[2] including the Universal Declaration of Human Rights in all company activities.
2. We responsibly respect for human rights by efforts to reduce any negative impacts on human rights holders. We respond appropriately when negative impacts on human rights occur.
3. We aim to not be complicit in infringing human rights, including being involved in discrimination, directly or indirectly.
4. When negative impacts on human rights are done by a business partner and are linked to a product or service of the NTT Group, we will expect them to respect human rights and not to infringe on them.

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[1] "We" means NTT Group and its officers and employees.
[2] "Internationally recognized human rights" are rights included in declarations and rules that form the basis for international standards of universal human rights throughout the world and specifically refer to the following.

United Nations (the Universal Declaration of Human Rights and the two Covenants on human rights)
 • The Universal Declaration of Human Rights (adopted by the United Nations General Assembly in 1948)
 • International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights (adopted by the United Nations General Assembly in 1966, in force from 1976)

International Labour Organization (eight basic principles of the Core Conventions of the ILO Declaration)
 • The eight core principles of the ILO Declaration on Fundamental Principles and Rights at Work (adopted at the 86th International Labour Conference in 1998) are: Forced Labour, Freedom of Association and Protection of the Right to Organize, Right to Organize and Collective Bargaining, Equal Remuneration, Abolition of Forced Labour, Discrimination (Employment and Occupation), Minimum Age Convention, and Elimination of the Worst Forms of Child Labour.

Note: In carrying out articles 2 through 4 above, we apply UN Guiding Principles on Business and Human Rights and ISO 26000 and are subject to the procedures described therein.

Our Basic Policy on Human Rights

Nippon Telegraph and Telephone Corporation, hereunder NTT, believes that human rights is an important issue, and recognizes the fact that making efforts towards promotion of and respect towards human rights is a social responsibility that all companies should discharge. NTT aims to build up corporate culture that respects human rights in order to build a safe secure and enriched society.

1. The NTT management themselves take a lead in respecting human rights of all the stakeholders.
2. NTT will, through its business activities, strive for a solution on the Dowa issue and other human rights issues.
3. NTT respects diversity, promotes equal opportunity, and strives to create a healthy working environment that is free of harassment issues.
4. NTT will, and from the standpoint of respect to human rights, review its operation, as appropriate, and will adapt and improve these to its business activities.
5. NTT will, through its Human Rights Education Committee, initiate and execute employee-focused activities.
6. NTT is committed to supporting its Group companies in their efforts to raise awareness on human rights issues.

Organization for Implementation

We believe it is important for the entire NTT Group to instill an understanding of respect for human rights and undertake business activities with a full awareness of human rights. Accordingly, NTT has established the Human Rights Education

Committee, headed by a senior executive vice president, under the Executive Officers Meeting. Through this framework, we are working to heighten human rights awareness across NTT Group and reinforce human rights management, including conducting human rights due diligence, training on human rights issues (training for officers including those at Group companies, training for all employees, etc.), and establishing and operating contact points for human rights.

Human Rights Education Committee

- **Chairperson** — Board member responsible for the issue
- **Members** — Heads of each organization
- **Secretariat** — Human Rights Education Office, General Affairs Department
- **Liaison Group** — Human rights officers at Group companies
- **Leaders responsible for promoting initiatives** — General managers of the supervisory departments of each organization

Main Initiatives

Due Diligence

In 2014 we established "The NTT Group's Human Rights Charter" based on international standards for human rights, such as the UN Guiding Principles on Business and Human Rights and ISO 26000. Based on the approach stipulated in this charter, we are introducing and implementing human rights due diligence processes in step with our global business development.

In fiscal 2015, we conducted pre-assessments covering specified businesses (data center businesses, etc.) in specified areas (China and India) within our overseas business and identified the human rights issues accompanying these businesses. In fiscal 2016, we conducted a human rights management survey covering all Group companies, both in Japan and overseas, based on the Guiding Principles on Business and Human Rights. This survey checked whether each company had a human rights policy in place, whether they had management systems for handling human rights issues, and identified any priority human rights issues. The results identified priority human rights issues for 250 of the 258 companies surveyed and indicated that 248 companies are working on specific initiatives to raise awareness about these human rights issues.

2011 — UN Guiding Principles on Business and Human Rights

2014 — NTT Group's Human Rights Charter
Formulation of global policy

2015 — Pre-assessment
Global information gathering

2016 — Human Rights Management Survey (Group companies in Japan and overseas)
Grasped the management situation regarding human rights at each Group company

2017 — Risk Assessments (Human Rights Impact Assessments) Potential Human Rights Impact Assessment
Numerical scores applied to risk areas and risk indicators
Identified human rights indicators for the NTT Group

2018 — Risk Assessments (Human Rights Impact Assessments) Manifest Human Rights Impact Assessment
Identified the NTT Group's human rights issues
Gained an understanding of human rights issues in India

Since fiscal 2017, we have brought in external specialized institutions* to implement risk assessments based on results obtained from in-house surveys. In fiscal 2017, a potential human rights impact assessment was carried out which assigned an evaluative score to the degree of negative impact of NTT Group's businesses on the human rights of stakeholders from the perspective of "the likelihood of future human rights risks in each country" and "severity of human rights risks arising in each business." The results of this led to us identifying Asia as a priority area for tackling human rights issues and establishing 21 human rights indicators for ICT business. In fiscal 2018, a manifest human rights impact assessment was carried out to verify the initiatives implemented in the previous fiscal year. After considering factors such as country risk for each country in Asia and impact on business, India was selected as the country to be assessed. Interviews were conducted with our local subsidiary and a local NGO that deals with human rights risk associated with specific business activities. The results of this confirmed that at present, there are no serious human rights issues that

present a major risk to business operations. However, of the 21 human rights indicators mapped, we have identified five priority issues for the future – "workplace discrimination" and "women's rights" in regard to workers, "privacy rights" in regard to consumers, and "noise and environmental pollution" and "land, real estate, and residence rights" in regard to communities. Going forward we will continue to monitor the 21 human rights issues, including these five, in all of our global business areas and conduct risk assessment and analysis, as well as implement systematic reviews, countermeasures, and relief efforts through engagement with stakeholders and specialists in human rights issues.

* Caux Round Table Japan and Verisk Maplecroft

Group-wide Human Rights Training and Education Programs

To disseminate the concept of respecting human rights and basic human rights, and to instill an awareness of global standards on human rights, at key points in employees' careers (joining the Company, receiving promotions, etc.), we provide training on human rights issues connected to business activities. In addition, for those in top management of Group companies or in other management positions, we offer programs that include lectures by outside experts on global trends in human rights. To foster awareness of human rights in employees, we issue invitations to employees and their families to submit human rights slogans, while the board member responsible for human rights issues delivers a message to mark Global Human Rights Day.

Since fiscal 2015, NTT Group has worked to disseminate its Human Rights Charter by sharing the content of e-learning with Group companies in Japan and continuously carrying out educational activities during training for all employees as well as on other occasions. In the training, we firmly communicate the importance of respect for human rights and the significance of addressing the issue throughout NTT Group.

Contact Point for Human Rights Issues

NTT Group provides internal and external contact points that employees can consult on various concerns related to human rights.

One of these, the Corporate Ethics Help Line, is an external consultation desk outsourced to a law firm that responds to consultation by third parties or by employees, on a confidential basis, for situations that cannot be reported internally. Consultations are accepted in various forms, including email, telephone and letter. All consultations are thoroughly kept confidential to protect the privacy of the person and ensure they are not subjected to disadvantageous treatment.

Incidents of Human Rights Violations and Corrective Actions

In an effort to ensure awareness and prevent recurrence, we have a Corporate Ethics Action Q&A section on our employee-oriented corporate website to explain nine representative examples of ethics violations. Each example action is described and laws and regulations that are the basis of reasoning are explained. When NTT Group has taken disciplinary action related to human rights, we publish excerpts of the cases and expound the cases on the site to raise employee awareness and prevent recurrence by calling for their attention and organizing training and other educational opportunities.

	Relevant GRI Standards	● 102-9 ● 103-1,2 ● 308-1,2 ● 407-1 ● 408-1 ● 409-1 ● 414-1,2

Reinforce Value Chain Management

Relevant SDGs

Policies and Concepts

In recent years, companies find themselves required to monitor the ESG risks and impact on sustainability, including consideration of human rights and mitigation of environmental impacts, of not only their own group companies but also throughout the entire value chain, from raw materials and supplies procurement to disposal and recycling.

Also, we are seeking to expand the B2B2X model and global businesses under the medium-term management strategy "Your Value Partner 2025" that we established in 2018. We expect our value chain to expand further globally, requiring us to enhance our value chain management initiatives.

NTT Group's value chain management focuses on requiring suppliers to adhere to the various guidelines under the "Procurement Policies" established by NTT. For this reason, it is important for us to build partnerships of trust with all of our suppliers. In 2013, we formulated the NTT Guidelines for CSR in Supply Chain to further promote CSR procurement and we carry out risk assessments of suppliers following these guidelines. Additionally, we have formulated the "NTT Guidelines for Green Procurement" and the "NTT Group Energy Efficiency Guidelines" as specific guidelines on the environment and we require all suppliers to comply with the provisions therein.

Procurement Policies

1. NTT will strive to provide competitive opportunities with fairness to both domestic and foreign suppliers, and to build mutual trust and understanding.
2. NTT will conduct economically rational procurement of competitive goods and services that meet its business needs, deciding on suppliers based on quality, price, delivery times, and stable supply in a comprehensive manner.
3. NTT will conduct procurement in a manner that follows laws and regulations as well as social norms, and takes the environment, human rights, and other issues into account to contribute to society.

Procurement Policies   https://www.ntt.co.jp/ontime/e/policy/index.html

NTT Guidelines for CSR in Supply Chain

In recent years, a number of supply chain issues have come to light, including excessive working hours, child labor, unlawful disposal of chemicals, bribery, and other examples of malpractice. These issues have served to intensify society's expectations for companies to comply with legal and social standards in their procurement activities.

In light of this, we formulated the NTT Guidelines for CSR in Supply Chain in 2013 that contain detailed requirements for suppliers in the six areas of human rights/labor, health/safety, the environment, fair trade/ethics, quality/safety, and information security to guide our efforts as we work together with suppliers in order to conduct procurement activities in a socially responsible manner.

We have published these Guidelines in Japanese and English, seeking to communicate to a broad range of NTT Group's suppliers both in Japan and overseas. We expect suppliers to adhere to these guidelines along with our Procurement Policies and the NTT Guidelines for Green Procurement, which contain our basic approach to green procurement at NTT Group.

Procurement   https://www.ntt.co.jp/ontime/e/index.html

NTT Guidelines for CSR in Supply Chain   httsp://www.ntt.co.jp/ontime/e/img/pdf/supply_chain2.pdf

Requests to Suppliers on Environmental and Social Concerns

In 1997, we established the Guidelines for Green Procurement and the Energy Efficiency Guidelines, which we use as requirements related to environmental aspects under the NTT Guidelines for CSR in Supply Chain. The NTT Guidelines for Green Procurement contain detailed requirements regarding standardization/selection of plastic materials, curbing the use of hazardous substances, labeling of plastic materials, energy conservation, and supplier assessments. We also formulate and publish specific technical requirements for procuring products with due consideration for quality, safety, the environment and other issues, and seek compliance from suppliers.

We are promoting initiatives to ban the use of conflict minerals as a social aspect-related requirement for suppliers. The trade in minerals originating in the Democratic Republic of the Congo and nine adjoining countries has become a global human rights issue owing to the likelihood that some of these minerals have become a source of financing for militant armed groups suspected of committing inhumane acts. NTT Group issued its Approach to Conflict Minerals in 2013 as a basic

policy with respect to conflict minerals so as to fulfill its social responsibility in the area of procurement.

We also ask all suppliers that participate in procurement, whether they are an existing supplier or new, to comply with our Notes Regarding Participation in the Procurement Process, such as that they have no involvement with organized crime groups, or have not demonstrated any improper conduct related to procurement in the past.

NTT Guidelines for Green Procurement   https://www.ntt.co.jp/ontime/e/img/pdf/green_j.pdf
NTT Group Energy Efficiency Guidelines   https://www.ntt.co.jp/kankyo/management/guideline/energy.html
Technical Requirements   https://www.ntt.co.jp/ontime/e/policy/tr/index.html
NTT Group's Approach to Conflict Minerals   https://www.ntt.co.jp/ontime/e/policy/conflict/index.html
Notes Regarding Participation in the Procurement Process https://www.ntt.co.jp/ontime/e/procedures/point/index.html

Conducting Risk Assessment for the Supply Chain

We assess the CSR activities of suppliers through surveys referencing various guidelines, and conduct risk assessments from various angles, including society, quality and the environment.

We will continue to scrutinize the survey method, survey content, and analysis method and use the findings of these questionnaires to provide feedback and continue discussions with suppliers in order to reduce risks across the value chain of NTT Group.

Organization for Implementation

NTT's Technology Planning Department has formulated the NTT Guidelines for CSR in the Supply Chain as guidelines for promoting supply chain CSR within the Group. In coordination with procurement divisions at each NTT Group company, we ensure that a supplier's compliance with key items within the guidelines is a basic condition of procurement and we regularly check that this condition is being met and follow-up with suppliers.

Main Initiatives

Assessment of Social and Environmental Risks

We assess social and environmental risks by conducting the Supply Chain CSR Survey using the Supply Chain CSR Promotion Check Sheet to confirm the status of compliance with various guidelines and technical requirements. The survey targets all of NTT Group's primary suppliers that account for at least 90% of total procurement value, and includes 140 items covering the seven areas of human rights and labor, health and safety, the environment, fair trade and ethics, quality and safety, information security, and social contributions. For example, in the area of human rights, we also conduct monitoring of child labor and forced labor as well as compliance with the freedom of association and collective bargaining rights. We assess the responses from suppliers, and designate those with a certain percentage of low-rated responses, or those with a low rating for specific items, as high sustainability risk suppliers. We visit these designated suppliers to perform additional checks, and when corrective action is necessary, we have them prepare an improvement plan and monitor its implementation. While the survey covers primary suppliers, we seek to assess risks that exist further upstream by also including items that check whether the supplier is making efforts to educate secondary suppliers about social responsibility. The goal of the survey is to request and receive responses from all primary suppliers. For information on the results of the Supply Chain CSR Survey, see page 083.

Check points for the Supply Chain CSR Survey (140 items)

1. CSR promotion in general (4 items)
2. Human rights and labor (22 items)
3. Safety and hygiene (25 items)
4. Environment (23 items)
5. Fair trade and ethics (27 items)
6. Quality and safety (11 items)
7. Information security (15 items)
8. Others (social contribution activities, etc.) (13 items)

Assessment of Risks Associated with Conflict Minerals

Based on NTT Group's Approach to Conflict Minerals, we conducted written surveys and inspected the offices and factories of suppliers to determine whether or not these minerals are used in their products. For information on the results of this survey, see page 083.

We are also carrying out questionnaires and exchanges of views regarding methods of information management in order to identify exemplary suppliers and those that require improvement and also to understand the current state of their response toward achieving an even higher rate of response in our surveys.

Communicating with Suppliers

NTT Group strives to build better partnerships with each of its suppliers by mutually exchanging views and proposals through various modes of communication.

In July 2018, we started introducing a system that enables faster assessment of damage to suppliers following a major earthquake or other disaster. By exchanging information more quickly and accurately, we will continue to work with suppliers on the prompt restoration of communications equipment.

NTT Group companies also engage in various forms of communication with their suppliers. Specifically, these companies inform their suppliers of their business environment and exchange views on how they can continually work together to provide a stable supply of high quality, competitive products.

ESG Education for Procurement Department Staff

NTT Group implements training on ESG for staff in procurement departments to reduce the burden of procurement activities on the environment and ensure they persistently comply with the laws, regulations, and norms of society. The implementation ratio of ESG training for staff in procurement departments can be found on page 083. Going forward we will continue actively working to improve awareness and knowledge regarding ESG.

VA Proposal System and Supplier Awards System

NTT East and NTT West engage in value analysis (VA) activities in which we invite our suppliers to submit proposals for enhancing quality, safety and workability, and for contributing to environmental protection, and then we incorporate their ideas in product specifications. We award suppliers that offer particularly outstanding proposals. In addition, we participate in improvement presentations held by suppliers and work with them to make improvements based on dialogue and cooperation.

Since fiscal 2007, we consolidated contact points for a simpler proposal system and established an environment for further developing improvement activities, including adding a new scheme for VE (Value Engineering) & VA proposals from telecommunications construction companies and suppliers. Going forward, we will continue to actively work toward maintaining and improving our products and services.

	Relevant GRI Standards	● 103-1,2 ● 403-2,3,4
Ensure Employee Safety	Relevant SDGs	

Policies and Concepts

For diverse human resources to be able to fully demonstrate their capabilities, creating a working environment that ensures the health and safety of employees is essential. NTT Group's businesses include telecommunications-related construction and maintenance involving high risk operations such as aerial work. For this reason, we believe it is our responsibility to society to implement measures to prevent accidents and continuously work on enhancing safety awareness.

To ensure occupational safety and health, in addition to observing relevant laws and regulations such as Japan's Labor Standards Act and Industrial Safety and Health Act, NTT Group has established its own Safety Management Rules and Health Management Rules with the aim of facilitating safety and health management.

Under these rules, we have constructed occupational safety and health management systems, and have appointed staff including general safety and health managers and safety managers at all of our workplaces. We also carry out various measures aimed at creating safe and comfortable workplaces, such as providing regular health checks and arranging workplace inspections by industrial physicians.

Main Initiatives

Achieving a Healthy and Safe Workplace Environment

To improve the workplace environment, NTT Group conducts air quality tests once every two months in the morning and afternoon, as well as formaldehyde surveys following any renovation work. If the results indicate air quality below the standards stipulated in Japan's Act on Maintenance of Sanitation in Buildings, we immediately investigate the cause and make improvements. We have also formulated health management rules and handling guidelines following Japan's Industrial Safety and Health Act, carry out workplace inspections by industrial physicians, and hold meetings of the health and safety committee once a month. Furthermore, we regularly check whether objects are blocking emergency evacuation routes and whether fire extinguishers are readily available, as well as whether employees are aware of both, as part of safety checks carried out by each workplace.

Activities to Eliminate Accidents

In fiscal 2019, three[1] serious accidents resulting in casualties[2] occurred during construction and repair work ordered by NTT Group companies (and performed by those companies or by subcontractors) for the construction and maintenance of telecommunications equipment and building facilities. The incidents include falls during aerial work and accidents involving collapsing materials, and are due to non-enforcement of established rules or procedures. To prevent such accidents, NTT Group companies will continue to work in unison to reaffirm standard procedures, reinforce adherence, and improve safety awareness among all workers. As an example, on the Safety Day that we observe across NTT Group, we confirm safety points using videos that reenact past accidents, and send email messages to all employees, to raise awareness of safety.

Also, during the NTT Group Safety Measure Reinforcement Period held from June 1 to July 7 and from December 1 to January 15, we work to further instill safety rules, including reaffirming previously established rules to prevent accidents, displaying safety posters unified across NTT Group, and reinforcing safety patrols. Furthermore, we continue to engage in activities aimed at achieving a safe labor environment and ensuring zero industrial accidents, such as investigating the use of sensing, AI, and other advanced technologies across the Group.

[1] Breakdown of accidents: 0 by NTT Group companies and 3 by subcontractors (in Japan)
[2] Serious accidents resulting in casualties: Accidents that led to fatalities or disabling injuries that would prevent the employee from working again.

Promote Health Management

Relevant GRI Standards   ● 103-1,2   ● 403-3

Relevant SDGs

Policies and Concepts

Based on the thinking that initiatives for maintaining and improving employees' health improve their motivation and productivity and therefore lead to greater corporate earnings, the importance of health management as part of a company's management strategy is growing. Within this environment, NTT Group believes that raising each individual employee's motivation and dynamism while enabling them to continue to work healthily and energetically is fundamental to the growth and development of the Group and in order to realize this, we are advancing health management to maintain and improve the health of our employees and their families so that they work with satisfaction and demonstrate their creativity.

Organization for Implementation

The Health Management Promotion Committee is chaired by the officer responsible for promoting health management in the Group. The Committee collaborates with officers responsible for promoting health management at Group companies and the NTT Health Insurance Union to actively contribute to health-focused activities and raise the health-consciousness of employees and their families. Going forward we will realize effective initiatives by implementing PDCA cycles (formulate health management plans + set health targets → formulate and implement health-focused measures → find out and confirm health results → verify the effectiveness of health-focused measures).

Main Initiatives

Maintaining and Improving the Health of Employees

NTT Group helps employees maintain and improve their health by providing a full range of regular health checks and offering health guidance based on the results of these checks. Furthermore, as a measure for preventing lifestyle related diseases, we provide more extensive physical checkups for employees who request them and we require all employees to receive a comprehensive physical checkup every five years from ages 30 to 60. We also provide support to help employees use sports gyms.

Together with the NTT Health Insurance Union, we are supporting employees' health-related activities by providing a portal site through which they can use a wearable device to record and check vital data such as the number of steps taken each day, as well as an app that uses health check data to predict and simulate potential future health risks related to metabolism and high blood pressure. Additionally, business sites with a cafeteria prepare lunch menus with the help of a nutritionist, and certain business sites offer massage services that employees can use freely.

Prevention of Overwork

To prevent overwork and manage employee health, NTT Group shares information on the overtime work of individual employees and holds an interview with those working extended hours, when necessary. We also monitor employee usage of the flex time program and teleworking and make changes to both as needed, as part of our efforts to develop a workplace environment where our diverse workforce never feels mental or physical burden and can work energetically.

Concretely, NTT Group is taking measures such as designating Wednesday as a weekly no-overtime day, while each Group company is actively striving to prevent overwork according to the nature of their respective businesses. For example, Group companies are seeking to adjust working hours and prevent overwork by recording and managing when employees log in and off their computers.

Mental Healthcare

NTT Group has set up contact points handling mental health inside and outside the Company and has been providing medical interviews on mental health as well as periodic training to raise employee awareness. Additionally, line care training is held for line managers among other initiatives to raise awareness about mental health.

In regard to stress checks, NTT Group has been providing medical interviews on mental health since before it became a legal requirement in 2015. The results of these checks are shared with employees and department managers. Analyzing the buildup of stress for each department and providing each employee with an understanding of their own stress will help us to improve mental health.

Extensive Benefit Programs

NTT Group operates a comprehensive and option-style benefit program (cafeteria plan). Employees are given points that can be used for a wide range of benefit menu items, including personal wealth building, health promotion, and home-related matters. The program applies to approximately 146,000 employees at 96 NTT Group companies (as of April 2019).

As employees' needs with regard to health, childcare, and nursing care are changing along with changes in the environment, in society, and the diversification of lifestyles, we provide the NTT Benefit Package, which includes services supporting child and nursing care and enabling the use of recreation facilities, as an attractive benefit program to improve motivation, encourage high performance, and stably secure human resources.

Specifically, in addition to providing comprehensive core benefit services that provide a range of support in line with the life events an employee experiences from joining the company through to retirement, including self-development opportunities and support that enables employees to refresh themselves and enjoy quality time with their families, we also offer benefits such as support for initiatives that maintain and improve health, centered on disease prevention through physical exercise promotion, and assistance for accessing various support services related to child and nursing care.

Furthermore, from the perspective of encouraging activities that maintain and improve the physical and mental health of employees, we have made this benefit menu available to all employees, regardless of contract type.

Initiatives Concerning Health, Safety, and Well-being

Flextime system	A flextime system that enables flexibility in working hours
Work-at-home system	Work-at-home and mobile working systems that enable working styles that are not confined to specific locations
Childcare facilities and allowance	• An allowance for dependents is paid • There is lifestyle support, such as babysitting subsidies • There are workplace nurseries
Childbirth and childcare leave for mothers beyond what is stipulated by law	Childcare leave, reduced working hours for childrearing (beyond what is stipulated by law), shift work for individuals with childrearing obligations, a re-employment system for employees who retired due to childrearing, "life plan leave" in which unused annual paid leave can be carried over to future years, etc.
Childbirth and childcare leave for fathers beyond what is stipulated by law	Childcare leave, reduced working hours for childrearing (beyond what is stipulated by law), shift work for individuals with childrearing obligations, a re-employment system for employees who retired due to childrearing, "life plan leave" in which unused annual paid leave can be carried over to future years, etc.
Other	A option-style benefit program (cafeteria plan) has been introduced for the entire NTT Group and points paid out once a year can be used toward extensive physical check-ups or obtaining a wearable device. An awards system has also been established to promote health management at Group companies, based on indicators such as the ratio of non-smokers and the take-up rate for specified health check-ups.

Create Attractive Workplaces

Relevant GRI Standards · 102-33,41 · 103-1,2 · 201-1
· 401-2,3 · 402-1 · 404-3 · 407-1

Relevant SDGs

8 DECENT WORK AND ECONOMIC GROWTH

Policies and Concepts

Retaining a diverse array of competent human resources serves as a powerful management foundation for any organization. This requires the development of employment conditions, such as fair evaluation, equal opportunity, opportunities for growth and benefit programs. Students seeking jobs now take benefit programs and favorable working conditions into account when selecting companies. Accordingly, the creation of an attractive workplace has also become vital from the standpoint of securing competent human resources.

NTT Group has developed a personnel system that responds to diverse work styles and provides generous benefit programs for employees and their families to create an environment in which employees can work comfortably and fully demonstrate their abilities.

We are also currently constructing a personnel database for registering past career experience and expert knowledge of employees engaged in our international businesses to accelerate the pace of visualizing and nurturing global human resources toward ensuring an optimal allocation of personnel.

Organization for Implementation

To attract, in the coming years, superior human resources who thrive on the global stage, NTT Group companies have launched a joint information website for students and are jointly hosting NTT Group events. Also, to secure highly capable personnel, not only from Japan but from around the globe, we are promoting hiring worldwide.

In order to measure the results of these activities, we conduct surveys of the level of satisfaction felt by NTT Group employees toward their work and workplaces. We intend to continuously monitor this benchmark to understand outstanding issues and seek improvements.

Main Initiatives

Enhancing Employee Satisfaction

NTT Group strives to understand the issues at hand in order to improve its working environment and corporate mechanisms toward creating companies that are acceptable for workers. As part of this effort, we regularly conduct a survey of employees at Group companies and use the results to improve the working environment.

Fair Evaluation and Compensation

In our employee qualification system, NTT Group puts priority on performance and sets behavior and performance targets tailored to each qualification rank. By steadily and accurately carrying out a series of evaluation processes that feed back evaluations based on these targets, our personnel system promotes autonomous and independent work by employees.

Personnel Evaluation System that Employees Find Very Fair

Rather than having each company operate its own mechanisms for human resources management and development, we operate an all-inclusive system for managing employees' placement, capacity building, evaluation, rating and payment, centered on an employee qualification system that indicates our expectations in terms of behavior and performance according to employee level. Proper evaluation requires appropriate execution of a series of processes that span target setting, everyday communication, evaluation implementation, and interviews to provide feedback. Toward this end, we adhere to the following cycle. (Evaluation system applies to 60% of NTT Group)

Regular Personal Interviews with Superiors and Human Resources Managers

NTT Group employees meet regularly with their superiors and human resource managers for personal interviews to ensure that they share the same perception as their superiors regarding performance targets and the processes required to achieve them, to share thoughts on areas that can be improved, and to discuss career paths and personal growth.

Employees are given six opportunities each year to talk personally with their superiors, once each at the start, middle, and end of each fiscal year, plus one overall evaluation feedback interview and two performance evaluation feedback interviews (April and October). The first interview of the year is for employees and their superiors to align their views on targets for the year and for the superiors to provide advice. The mid-year, year-end and feedback interviews are for managers and their subordinates to review results, performance, and the processes for achieving targets, and for managers to provide

advice and motivation for making further improvements and growth. The implementation of these interviews is managed so they are held without fail, except when vacations or leave prevent them from being held in the allotted time.

Evaluator Meetings

Evaluator meetings have been held twice annually—once in the spring and once in the autumn—since fiscal 2002. We endeavor to enhance the fairness and objectivity of our evaluation process and prevent subjective and arbitrary evaluations by having all of the evaluators in the same business unit hold evaluator meetings to align their evaluation criteria and perspectives.

Evaluator Training

We provide employees in evaluator positions with evaluator training (e-learning) and new manager training as well as our Human Resources Evaluation Manual as part of our efforts to further improve the fairness of evaluations and employee satisfaction. We also provide employees subject to evaluations with training for the evaluations, training for setting targets, and other training, a handbook explaining evaluation, target setting, online educational tools for promoting understanding of our human resources management and pay systems, and a collection of high performance model examples.

Improving Human Resource Management and Payment Systems

NTT Group implements policies aimed at enabling each and every employee to make the most of their abilities as members of Team NTT and to grow steadily as competent professionals and take the initiative in developing their careers.

We reconstructed our human resources management and pay systems in 2013 as part of our efforts to create an environment in which employees of all ages can realize their full potential in a way that grows our business. We also hire the right mix of both people possessing frontline skills and specializations, and people eager to take on new challenges, based on our perception of the period from start of employment up to the age of 65 as a single block. The new systems are designed to better reward employees who perform the roles and produce the results expected of them through introducing evaluation-based compensation and expanding results-based awards.

Promoting Work-Life Management—Work and Leave Style Reforms—

NTT Group seeks to create new value through innovation. In order to accomplish this goal, there is a strong need for all NTT Group employees to break away from traditional work styles to adopt more efficient practices not bound by time and place, and thereby exercise greater levels of independence and creativity. We are also aware of the great importance of supporting this shift by cultivating a deeper understanding of work-life management throughout workplaces and fostering a corporate culture that accepts the diverse work styles of each individual employee. From this standpoint, in 2017 NTT Group made a Work Style Reform Declaration, which represented the shared sentiment of all executive officers, managers and employees.

We are currently pursuing improvements in overall work processes together with business partners while advancing initiatives for helping employees maintain good physical and mental health and for encouraging reforms in the work styles of individuals. NTT has also set a goal of shortening total hours worked by achieving 1,800-1,850 total hours actually worked by the end of fiscal 2023.

NTT Group Work Style Reform Declaration

1. Fundamental Policy

   Recognizing that the health and safety of all employees and business partners is of the utmost importance for achieving sound, creative and efficient business administration, we will pursue work style and leave style reforms while improving overall operating processes together with business partners as part of our enduring commitment to reduce total hours worked and, in principle, completely eliminate late night overtime.

2. Action Guidelines

   (1) Executive officers and managers

   As leaders of work style reforms, will take the initiative in improving overall operating processes, including through collaboration with business partners. Will provide appropriate advice and assistance regarding employees' work styles and work-life management.

   (2) All employees

   Will be fully mindful that it is critical to complete job tasks within prescribed working hours and will endeavor to achieve work styles that are independent and efficient. Will work to enrich their hearts and minds by varying the way they work and proactively taking vacations.

Utilization of Telework System

All employees who work at NTT Group review the way they work in order to develop efficient and flexible work styles by making active use of telework, including working from home, as well as systems such as flex time that we provide as an ICT company. Regarding telework, in fiscal 2018 NTT Group declared our support for the intent and purpose of Telework Days[1] and we are actively participating in this initiative. Twenty-one companies participated in 2018 and in July 2019, over 100 Group companies participated as implementing organizations, fully cooperating organizations, and the like. Also, to provide an environment for realizing flexible work styles, we have established various work systems tailored to the business characteristics of each Group company (flex time systems, systems that enable working hours to be changed for a one-year period, discretionary work systems, split shifts, etc.). NTT Group companies based in Tokyo are also actively participating in the Smooth Biz[2] initiative being promoted by the city by utilizing various work systems and implementing flexible work styles, such as staggered working hours.

[1] Telework Days
A work style reform initiative aimed at the Tokyo Olympic and Paralympic Games and led by the Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare, Ministry of Economy, Trade and Industry, Ministry of Land, Infrastructure, Transport and Tourism, the Cabinet Secretariat, and the Cabinet Office. The initiative designates July 24 as Telework Day and calls on companies to implement telework.
[2] Smooth Biz
An initiative launched by the Tokyo Metropolitan Government that includes promoting a range of measures such as telework, staggered business hours, and transport demand management (TDM) to establish a Tokyo model of new work styles and company activities with the aim of realizing a society where all people can work and participate with vigor.

Encouraging Employees to Take Various Types of Leave

NTT Group is actively working on not only work style reforms, but also leave style reforms, and as part of this we encourage employees to take annual paid leave in an effort to promote work-life management.

To create an encouraging environment conducive to taking various forms of paid leave, we encourage employees to take long vacations by combining paid leave with long major holidays such as Golden Week holidays, end-of year and New Year holidays, and summer vacation.

As a part of the promotion of taking annual leave, including by managers, NTT also engages in Value Up Friday, by which managers are encouraged to take a leave of half a day or more at least one Friday per month.

Support for Balancing Work with Childcare or Nursing Care

To support childcare and nursing care by employees, NTT Group has prepared a variety of programs usable by both men and women. We enhance these programs as needed, enabling their flexible use from the perspective of promoting the utilization of diverse human resources, based on employees' needs and on the expectations of society. Amid ongoing changes in employees' needs concerning health, childcare, and nursing care, in 2018 we conducted a major review of our benefit program menu to prepare environments even more conducive to work, and enhanced our childcare and nursing care support menu as the NTT Benefit Package. Specifically, we introduced a Childcare Concierge to support childcare placement in employees' areas of residence, and greatly enhanced services such as childcare subsidies. For nursing care, we also established a Nursing Care Concierge for consultations on nursing care, including matching of care managers.

We utilize Tomonin, a symbol created by the Ministry of Health, Labour and Welfare to promote the establishment of working environments that allow the balancing of work and nursing care. NTT uses the symbol to publicize its initiatives and develop a workplace environment that enables employees to balance work and nursing care.

Through these initiatives, NTT Group is striving to develop a working environment in which employees who must care for their children and family members can continue to pursue their careers without having to leave for these reasons. Going forward, we will continue to enhance our various programs for childcare and nursing care while actively developing initiatives to support balancing life and work.

Communicating Information on Childcare and Nursing Care

NTT Group has established a childcare and nursing care web site with information about the programs and how to use them, and also the experiences of employees who balance childcare and nursing care. In addition, we hold seminars for childcare support and for people returning to work, hold talks with employees before childbirth and after parental leave, and establish nurseries in workplaces.

Looking ahead to the coming age of major nursing care needs, our Group companies organize nursing care study sessions and other events aimed at creating an environment that enables their employees to balance work with nursing care commitments. With many interested employees participating in these events, we plan to continue providing such opportunities.

Life Plan Study Sessions

In light of increasing diversity in employee life plans, NTT Group provides website-based life plan design support for employees reaching age or career milestones to help them consider how they wish to spend the rest of their lives, including their working lives.

We have also established in-house system contact points to promote greater understanding of matters including support and in-house systems for maintaining and improving physical and mental health, personal wealth building, specialist advice for tackling lifestyle-related troubles and issues, life plan creation, and support for balancing work with child or nursing care.

Favorable Labor-Management Relationship

With the exception of managers, most NTT employees in Japan belong to the NTT Labor Union, a member of the Japan Labor Union Confederation, and labor-management relations have remained stable. There have been no labor union strikes for more than 10 years.

The Company adheres to the minimum notice period of 10 days before an official announcement, as designated by the Agreement on Employee Relocation under the collective agreement with the NTT Labor Union.

Human Resource Development

Relevant GRI Standards ● 404-1,2

Relevant SDGs

Policies and Concepts

NTT Group engages in human resources development so all employees can demonstrate their abilities through their work and provide high added value.

With the aim of developing individuals' capabilities, we offer training that includes hierarchy-specific training for the acquisition of skills matched to position and experience, and training to enhance expertise needed for work. Through this, we aim to develop human resources who are able to act amid the technological innovations, globalization, and other rapid changes occurring in the societal environment.

Organization for Implementation

NTT Group companies have readied a variety of systems for human resources development, including the setting of areas of expertise matched to the business specifics and the content of work and the creation of mechanisms for skill certifications. These create an environment in which employees can work at any time to improve the skills they need, including for personal development.

Companies also perform regular follow-up on the status of employee human resources development through interviews and other means. This enables the creation of training plans in line with employees' career plans.

Main Initiatives

Helping Employees Develop their Abilities

In addition to Group training and on-the-job training to enable employees to gain necessary skills in various fields of business, we provide many other opportunities for employees who are eager to get ahead, including e-learning, distance learning, in-house certification of skill levels, and support for earning qualifications.

We actively support employee career development in various ways, including having superiors hold personal talks with their subordinates at the start, the middle and the end of the fiscal year to review performance and career plans, and holding management training for employees tapped for promotion. In particular, we have created a curriculum for nurturing experts in the security field given the heightening security risks of recent years, and we offer leadership development and a personal network building training curriculums to around 400 carefully selected general managers and section managers. With an eye on the further globalization of our operations, and to nurture personnel capable of performing in global markets, we also send employees to study at overseas graduate schools or participate in our overseas work experience programs.

Programs for Cultivating Management Leaders and Globally Capable Employees

	Goal Program	Goal Program	Details
CULTIVATION OF LEADERS TO FILL FUTURE MANAGEMENT POSITIONS	Development of Leaders for the entire NTT Group	Mentoring program	This program entails assigning a mentor, usually a senior executive vice president or corporate officer from within the Group, to new directors and young management candidates (section manager level) to teach them the frame of mind required of a manager. The curriculum for this program includes individual work and group work based on selected themes as well as discussions with mentors, results presentations, and lectures by external experts.
		Group leader development program	This program is designed to help the young managers who will be responsible for promoting collaboration between NTT Group companies gain experience, broaden their perspective, and develop a mind-set focused on advancing cross-Group businesses. This is accomplished through periodic relocations to other Group companies and exchanges of opinion with managers.
		MAC Management Workshop	The purpose of this program is to cultivate managers with broad perspectives that are not restricted to the Company, to foster a sense of solidarity within NTT Group, and to enhance personal networks. The curriculum consists of four management workshop courses conducted by external lecturers over a period of seven months.
	Fostering of globally capable human resources	GLDP (Global Leadership Development Program)	The Global Leadership Development Program (GLDP) aims to broaden the horizons of the next generation of managers who will be responsible for developing global businesses, cultivate a sense of leadership within them, and help them form personal networks. The program includes a one-week curriculum of study at an overseas business school.
		GLDP LEAD (Leadership Excellence and Accelerating Diversity)	This extension of the GLDP is targeted at senior managers in Japan and overseas, aiming to help them acquire leadership skills and otherwise cultivate global leaders within NTT Group. Participants are sent to a one-week curriculum of study at an overseas business school, where they take part in discussions on leadership and diversity, among other curriculum items.

Skill Mapping and Encouraging and Supporting Acquisition of Qualifications

Each Group company sets up a unique program of skill mapping based on the characteristics of their respective business operations and conducts human resources training according to those categories. Companies measure the level of each employee according to the mapping, identify the number of employees who are qualified for each level, and measure the status of implementation. Specifically, the process is operated as follows:

1. Designate areas of expertise according to the expert skills required by each operation;
2. Define and certify levels according to the skill set for each area of expertise; and
3. Develop a PDCA cycle based on the employee's own career plan, supported by supervisors and the organization.

NTT's five major Group companies in Japan have created 93 skill categories. Our overseas Group companies are also creating skill categories. As an example, Dimension Data conducts human resources development based on a framework of 10 skill categories.

NTT Group also encourages employees to acquire qualifications related to their respective duties, including major qualifications that are in broad demand in the ICT industry such as Professional Engineer, Information Technology Engineer and Certified Information Systems Security Technology Professional (CISSP) qualifications, and we intend to boost the number of qualified employees.

Placing the Right People in the Right Jobs

NTT Group engages in businesses across a broad range of fields. The development of each business requires placing the right people in the right jobs so that each employee can fully demonstrate their potential. Therefore, we periodically rotate personnel on the basis of each employee's overall skill development and career plan decisions.

In-house Recruitment System

At NTT Group, in addition to offering NTT Group Job Challenge which provides opportunities for regular employees with ambition to take on the challenge of shaping their own careers, we also operate NTT Group Job Offerings, a program for the management staff who will advance the transformation of NTT Group. The program enables a variety of personnel who offer fresh ways of thinking to apply for important positions in each business area.

We are actively promoting the usage of these internal job posting systems as part of efforts to build a group-wide culture that supports employees taking on new challenges.

Layoffs

Organizational changes are implemented after discussion and negotiation with all labor unions. As in the previous year, no layoffs occurred in fiscal 2018.

Promote a United Group Effort on Social Contribution Activities

Relevant GRI Standards ● 103-1,2 ● 201-1 ● 413-1

Relevant SDGs

Policies and Concepts

NTT Group has operating bases located not only in Japan but also around the world, from which it provides telecommunications networks, an important lifeline, and develops business that works to realize a smart world and Society 5.0 by leveraging ICT and data to solve social issues. Therefore, to aid the various organizations aiming to develop ICT, as well as maintain and further develop this business, it is absolutely essential that we pursue harmonious relationships and strive to resolve local issues in collaboration with local residents, central and local governments, NGOs, NPOs, and educational institutions.

NTT Group looks to address the various issues faced by local communities in which we operate, including those related to environmental issues, aging populations, declining birthrates, and the education of children. NTT believes it is important to contribute to the development of flourishing and vibrant local communities through the actions of each member of Team NTT comprising NTT Group employees, their families, and retired employees. We seek to have each employee of the 300,000-strong NTT Group interact with members of their local community, identify local needs, and contribute in even small ways to addressing issues through our business activities. We believe that these efforts will eventually come back to us in the form of business opportunities and avoidance of risk, and thus we view activities that invest in local communities as our most important area of activity. Herein lies the strength of NTT Group, a global enterprise that engages in businesses deeply rooted in local communities.

Organization for Implementation

The NTT Group CSR Charter calls on Team NTT to work together to contribute to the realization of a sustainable society. In accordance with this policy, we have defined the following six pillars for corporate citizenship activities: environmental conservation, social welfare, education and cultural promotion, local community development and dialogue, international exchange activities, and sports promotion. In turn, each NTT Group company engages in citizenship activities following the policies and detailed action plan set by NTT's CSR Promotion Office.

For example, since fiscal 2010, we have joined across the Group to promote activities with a focus on the area of environmental conservation, with active participation by employees under the slogan Green with Team NTT. We are also engaged in supporting people who have been impacted by the Great East Japan Earthquake and other major natural disasters.

Main Initiatives

Citizenship Activity Categories

Investments in local communities : Corporate citizenship activities carried out over the medium- to long-term to address social issues that concern both NTT Group and local communities

Donations to charities : Corporate citizenship activities that are carried out on a one-time basis or are expected to be completed within a short period

Commercial initiatives : Corporate citizenship activities that generate profit for NTT Group

Support for Citizenship Activities by Employees

With the belief that participation in citizenship activities can help to broaden the mind, NTT Group is implementing an increasing range of policies to support employee citizenship activities, informing employees of support programs, and commending citizenship activities carried out under such programs. Other programs include a Matching Gift Program under which Group companies match donations collected independently by employees, and a Volunteer Gift Program under which Group companies donate goods to facilities and other places where employees are engaged in voluntary citizenship activities.

Measures to Support Citizenship Activities

Programs	Details
Volunteer Gift Program	This program provides goods from the volunteer's company to facilities and other places where the volunteer has been active over a long period.
Matching Gift Program	Under this program, NTT Group companies support employees' fund-raising and charity activities by matching donations made by employees.
Volunteer Leave Program	This program enables employees to take extended leave for volunteer activities or other purposes in line with life design plans.
NTT Group Volunteer Portal Site	This postal site introduces and supports a range of volunteer activities across NTT Group, with a focus on sports volunteers.

Promoting Volunteer Activities Through the NTT Group Volunteer Portal Site

The NTT Group Volunteer Site was established in 2017 to introduce and support various volunteer activities for NTT Group employees in Japan. Under the motto "smiles for all," we promote group-wide social contribution activities that can bring smiles to everyone involved, creating win-win situations for NTT Group, participants, and local communities.

In fiscal 2019, we carried out activities in various fields, including courses, training, and lectures, such as sports volunteer training and formed volunteer spectator groups to watch sports such as blind soccer and para-badminton. We also held conference events involving the business world, events supporting disability sports, and the like.

Going forward, we will expand these kinds of activities that utilize the NTT Group's strength of manpower to involve more organizations, fields, regions, age groups, and individuals, and develop the site as a "third place" venue for creative interaction, linking it to the improvement of corporate vitality and to the fostering of group solidarity and a volunteer culture.

Citizenship Activities by Retired NTT Group Employees

Retired employees of NTT Group are also actively participating in citizenship activities individually or in a group as a member of Team NTT.

Denyu-Kai, whose membership consists of retired NTT Group employees, engages in a broad range of citizenship activities, including social welfare and environment beautification. Denyu-Kai supports the citizenship activities of retired employees by annually presenting the Volunteer Activity Awards to members and organizations who undertake effective citizenship activities.

In fiscal 2019, we recognized 32 individuals and 3 groups, and presented an award for outstanding achievement in volunteer activities to 14 recipients.

Systems Promoting Work-Life Balance

System		Description
Leave programs	Paid vacation days	Paid leave that can be taken regardless of reason. Employees who have worked continuously for the company for one year or more are entitled to 20 days per year. Employees who have worked for the company less than one year are entitled to 13 days
	Special leave	Leave that can only be taken due to specified reasons **Reasons:** Marriage, bereavement, summer leave, childbirth, childcare time, menstrual leave, transport restrictions, loss of home due to a natural disaster, etc.
	Life planning vacation	Although paid vacation days become void at the end of the fiscal year, a maximum of three days per fiscal year can be accumulated as life planning vacation and used for specific purposes. **Acceptable purposes:** Refreshment, caring for family members, volunteer activities, continuing education, childcare, participation in child's school events and the like, partner's childbirth or fertility treatment
	Sick leave	Leave that can be taken if an employee is injured or falls ill.
Childbirth and Childcare	Mitigation of commuting during pregnancy	Paid program that exempts pregnant employees from working at the start or end of the workday for up to 60 minutes per day
	Measure related to health examinations, etc., during and after pregnancy	Paid program that exempts employees from working to attend health guidance or a health examination during pregnancy or within a year after pregnancy
	Maternity leave (Special leave)	Six-week paid leave before childbirth (14 weeks for multiple pregnancies) and eight-week paid leave after childbirth
	Reengagement of former employees who left for childcare	Program for rehiring former employees who left to care for a child, within a certain period of time since leaving the Company
	Childcare leave	Program that enables employees with a child under three years old to take non-paid leave for childcare
	Shortened working hours for childcare	Program that offers shortened working hours for employees with a child below the third grade of elementary school (options: four-hour, five-hour and six-hour workdays)
	Shifted working hours for childcare	Program that offers individualized shifts (moving up or moving down the starting/ending hours of the workday) to secure time for dropping off and picking up children from daycare centers up to the end of elementary school
	Limits on overtime or overnight work	Program that limits overtime, etc., for employees who need to care for a child below the third grade of elementary school
Nursing Care	Nursing care leave	Program that enables employees to take non-paid leave to look after a family member in need of nursing care
	Shortened working hours for nursing care	Program that offers shortened working hours for employees with a family member in need of nursing care (options: four-hour, five-hour and six-hour workdays)
	Shifted working hours for nursing care	Program that offers individualized shifts (moving up or moving down the starting/ending hours of the workday) to secure time for nursing family members
	Limits on overtime or overnight work	Program that limits overtime, etc., for employees who need to care for a family member

System		Description
Systems related to working	Shifted working hours	Program that enables an individual to change the starting or ending hours of the workday to secure time for child or nursing care
	Flex time	Program in which employees work during standard core times (10:00-15:00, specific times can be set by each organization) and flexibly outside of these times (7:00-22:00)
	Working from home	Program that allows an employee to temporarily work at a location other than their regular worksite as a means of supporting work-life balance, encouraging independence and creativity, or increasing productivity
	Rehiring program	Program that enables employees who quit due to childcare, nursing care, or the relocation of their partner to apply to be rehired after they quit

Personnel and Labor Data

Employment in NTT Group

		Boundary	Unit	2017	2018	2019
Total number of employees				275,000	282,550	303,355
Employees by region	Domestic	C	Employees	164,000	166,550	180,355
	Overseas			111,000	116,000	123,000
	Ratio of overseas employees		%	40.3	41.0	40.7
Number of employees by gender		E	Employees	110,010	109,200	106,997
	Male			93,790	92,000	88,756
	Female			16,220	17,200	18,241
	Ratio of female employees		%	14.7	15.8	17.0
NTT		NTT alone	Employees	2,700	2,650	2,550
	Male			2,450	2,400	2,300
	Female			250	250	250
	Number of temporary employees included in the above			50	60	70
Total managers[1]		E	Employees	25,190	26,110	25,736
	Male			24,000	24,770	24,268
	Female			1,190	1,340	1,468
	Ratio of female managers		%	4.6	5.1	5.7
Average age		NTT alone	Years	41.1	41.3	41.3
	Male			41.6	41.7	41.7
	Female			37.1	37.4	37.6
Average years of employment		NTT alone	Years	16.7	16.8	16.8
	Male			17.1	17.2	17.2
	Female			13.2	13.4	13.5
Average annual compensation		NTT alone	Yen	-	5,846,977	5,913,532
		A		-	6,390,108	6,449,078
Number of New Graduate Hires		A	Employees	1,412	1,550	1,721
	Male			964	1,022	1,170
	Female			448	528	551
	Ratio of female employees		%	31.7	34.1	32.0
Number of Non-Japanese		D	Employees	85	58	75
	Male			45	35	44
	Female			40	23	31
Number of Employees with Disabilities		NTT alone	%	2.4	2.6	2.7
		A		2.3	2.5	2.6
		B		2.1	2.6	2.4
Number of Re-employed Members		D	Employees	13	18	16
	Male			0	1	0
	Female			13	17	13
Job separation rate (including mandatory retirement)	Job separation rate among all employees	D	%	7.0	6.4	6.1
	Job separation rate due to personal reasons			2.0	3.0	3.7
Continuous Employment of Employees at Retirement Age		D	Employees	21,000	18,000	14,000
Ratio of NWJ membership		B	%	86.9	86.0	84.8
Enhancing Employee Satisfaction		B	Points	3.83	3.79	3.8

*1 Section manager level or higher

Number of Employees Using Company Systems, Working Hours, etc.

		Boundary	Unit	2017	2018	2019
Special leave (childbirth)		D	Employees	1,139	1,147	1,081
Childcare-related				2,044	2,199	2,370
Childcare leave	Male		Employees	82	120	169
	Female			1,962	2,079	2,201
	Ratio that returned to work	D	%	98.0	97.1	98.1
Shortened working hours for childcare	Male		Employees	25	27	39
	Female			2,217	2,391	2,491
Nursing care-related				83	116	94
Nursing care leave	Male	D	Employees	42	65	42
	Female			41	51	52
Shortened working hours for nursing care	Male	D	Employees	22	25	36
	Female			31	29	50
Leave programs			Days	19.3	19.7	19.3
Paid vacation days	Male	D	%	—	—	97.0
	Female			—	—	93.8
	Percentage of total entitled leave			96.4	98.4	96.4
Working hours	Total hours actually worked	NTT alone	Hours	1,945	1,911	1,933
	Average annual overtime hours			15.9	23.0	22.2
Number of employees working from home[1,2]				3,955	15,046	26,719
	Male	D	Employees	2,233	10,498	18,171
	Female			1,099	3,500	5,626
Number of employees taking leave for mental health				1,519	1,648	1,550
	Male	A	Employees	1,174	1,293	1,202
	Female			345	355	348
Number of industrial accidents			Number of victims	51	44	36
	Operational accidents	A		18	9	8
	Commuting accidents			33	35	28
	Frequency rate		%	0.19	0.10	0.09

*1 Excluding NTT Data Group in FY2017 only
*2 Including DOCOMO Group

Status of Human Rights Initiatives

	Boundary	Unit	2017	2018	2019
Number of Confirmed Cases of Human Rights Violations	B		17	27	24
Rate of Human Rights Training and Attendance	B	%	97.0	93.6	96.6

Status of Human Resources Development

		Boundary	Unit	2017	2018	2019
Average annual training	Hours per employee	B	Hours	30.0	34.0	28.0
	Cost per employee		Yen	89,000	104,000	109,000
Job Challenge/ Job Offering	Use	B	Employees	435	477	297
	Transfer			168	188	113
Number of qualified employees		B	Employees	24,957	26,963	38,437

Status of Supply Chain Initiatives

		Unit	2017	2018	2019
Ratio of important suppliers that we sent CSR surveys (SAQ) to, and ratio that were returned	Sent	%	100	100	100
	Collected	%	100	99	98
Number of recognized high-risk suppliers			0	0	0
Ratio of issues recognized as actual risks that were corrected at suppliers		%	100	100	100
Ratio of employees in procurement trained on ESG		%	100	100	100

Employee Volunteering

		Boundary	Unit	2017	2018	2019
Employee participation rate			%	69.7	70.7	69.0
Results of Citizenship Activities*	Number of activities			3,785	4,204	3,977
	Number of participants			114,256	117,491	123,734
	Expenditures		Million yen	6,783	6,414	8,030
Environmental conservation	Number of activities			899	1,106	1,106
	Number of participants			64,792	75,706	76,889
	Expenditures		Million yen	897	875	796
Social welfare	Number of activities			420	497	513
	Number of participants			15,517	6,399	9,559
	Expenditures		Million yen	877	1,079	1,860
Education and cultural promotion	Number of activities			388	423	388
	Number of participants			2,923	2,940	2,845
	Expenditures	B	Million yen	1,839	1,841	2,423
Local community development and dialogue	Number of activities			1,647	1,740	1,507
	Number of participants			23,694	23,068	26,868
	Expenditures		Million yen	1,141	937	1,126
International exchange activities	Number of activities			41	43	55
	Number of participants			322	445	320
	Expenditures		Million yen	55	69	72
Sports promotion	Number of activities			182	268	224
	Number of participants			3,639	5,853	3,752
	Expenditures		Million yen	1,029	1,499	1,579
Other (e.g. activities that combine multiple categories)	Number of activities			208	127	184
	Number of participants			3,369	3,080	3,502
	Expenditures		Million yen	947	113	174
Breakdown of activities by type						
	Investments in local communities			83.8	65.8	60.0
	Donations to charities	B	%	15.5	8.2	15.6
	Commercial initiatives			0.7	26	24.5

* Expenses related to corporate citizenship include monetary donations, donation of goods, effective costs of opening facilities to the public, personnel costs of employee participation, and costs for implementing corporate citizenship programs (work outsourcing fees, transportation costs, etc.).
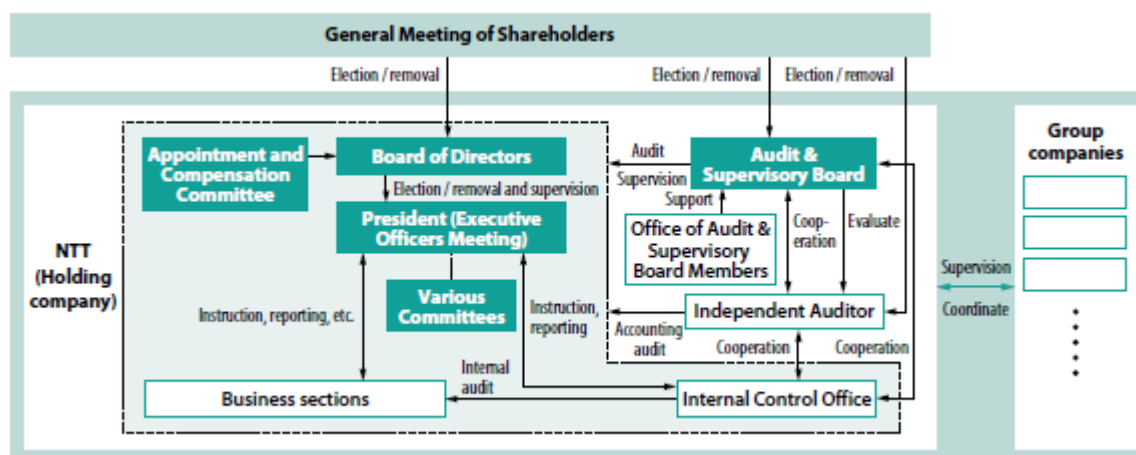
Governance

Corporate Governance

Overview of Corporate Governance System

Basic Policy

As the holding company of NTT Group, NTT believes that raising the effectiveness of corporate governance is an important management issue for meeting the expectations of various stakeholders, including shareholders and other investors, as well as customers, business partners, and employees, and for maximizing corporate value. Accordingly, NTT is working to strengthen corporate governance based on the purpose of the principles of the Corporate Governance Code promulgated. Based on NTT's new "Your Value Partner 2025" Medium-Term Management Strategy, which was formulated and announced, in order to work together with all its partners to promote initiatives to resolve social issues in its role as "Your Value Partner," NTT will work towards ensuring sound management, executing appropriate decision-making and business activities, clarifying accountability, and maintaining thorough compliance as basic policies.

Corporate Governance System

NTT, in order to strengthen functions for appropriately supervising business execution, appoints several outside independent Members of the Board and has established the Audit & Supervisory Board, of which outside independent Audit & Supervisory Board Members make up a majority to strengthen its auditing system. Additionally, NTT has voluntarily established the Appointment and Compensation Committee, which consists of four members, including two outside independent Members of the Board, to further increase the objectivity and transparency of decisions related to appointments and compensation.

In addition, NTT has established various meetings and committees as has been deemed necessary to discuss important matters related to corporate management and Group management, in order to ensure that appropriate decisions are made for facilitating Group management.

Committee name	Overview
Board of Directors	In principle, the ordinary meetings of the Board of Directors are held once per month. In addition, extraordinary meetings are held as needed. The Board of Directors makes decisions on matters stipulated by law and on important matters related to corporate management and Group management. Moreover, through such means as periodic reports from Members of the Board on the status of the execution of members' duties, the Board of Directors supervises the execution of duties by Members of the Board.
Audit & Supervisory Board	From an independent perspective that differs from that of individuals responsible for business execution, the Audit & Supervisory Board implements operational audits and accounting audits and audits the status of the execution of duties by Members of the Board.
Appointment and Compensation Committee	For the purpose of improving objectivity and transparency in the decisions regarding appointments and compensation of Members of the Board, NTT has established on a non-statutory basis the Appointment and Compensation Committee, which consists of four Members of the Board, including two outside independent Members of the Board, as a preliminary review institution of the Board of Directors.
Executive Officers Meeting	Important corporate matters to be decided are, in principle and in advance, discussed at the Executive Officers Meeting, which is made up of the president, senior executive vice presidents, full-time directors, and the heads of staff organizations. The Executive Officers Meeting is held about once a week. To improve the transparency of management decision-making, one Audit & Supervisory Board Member participates in the Executive Officers Meeting.
Various Committees	A number of committees have been established below the Executive Officers Meeting to discuss specific issues related to corporate and Group management strategies. These committees, which are convened as necessary throughout the year, are, in principle, chaired by the president or a senior executive vice president and are attended by relevant Members of the Board and others.

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Major Committees

Committee name	Overview
CSR Committee	Formulates basic CSR strategy and CSR goals for the Group, formulates basic policy for CSR-related reports
Corporate Ethics Committee	Establishes corporate ethics, takes thorough steps to maintain discipline
Human Rights Education Committee	Establishes human rights education systems and responds to discrimination incidents, etc.
Technology Strategy Committee	Formulates R&D vision, technology development strategy, and R&D alliance strategy
Investment Strategy Committee	Formulates investment strategy related to large investment projects, etc.
Finance Strategy Committee	Formulates basic strategies related to finance and policies for addressing financial issues
Business Risk Management Committee	Undertakes crisis management for the handling of new business risks related to corporate management
Disclosure Committee	Establishes policies for compiling yearly reports
Internal Control Committee	Provides support for and monitoring of matters related to Group-wide internal control over financial reporting
Group CIO Committee	Coordinates matters including Group-wide IT policy discussions and systems development for Group-wide optimization
Group CISO Committee	Formulates of the Group's information security management strategies

Board of Directors

(As of June 30, 2019)

Name	Position Responsibility	Years on the Board	Shares Owned	Number of Meetings Attended	Background and Experience		Principal Concurrent Positions
Hiromichi Shinohara	Chairman of the Board	10	19,600	13	Apr. 1978	Joined Nippon Telegraph and Telephone Public Corporation	None
					Jun. 2009	Senior Vice President Head of Research and Development Planning Member of the Board of the Company	
					Jun. 2011	Senior Vice President Head of Research and Development Planning Head of the Information Sharing Laboratory Group Member of the Board of the Company	
					Oct. 2011	Senior Vice President Head of Research and Development Planning Member of the Board of the Company	
					Jun. 2012	Executive Vice President Head of Research and Development Planning Member of the Board of the Company	
					Jun. 2014	Senior Executive Vice President Head of Research and Development Planning Member of the Board of the Company	
					Jun. 2018	Chairman of the Board of the Company (present post)	
Jun Sawada	President and Chief Executive Officer; Member of the Board	5	15,400	13	Apr. 1978	Joined Nippon Telegraph and Telephone Public Corporation	President and Chief Executive Officer, Representative Member of the Board of NTT, Inc
					Jun. 2008	Senior Vice President Executive Manager of Corporate Strategy Planning Department Member of the Board of NTT Communications Corporation	
					Jun. 2011	Executive Vice President Executive Manager of Corporate Strategy Planning Department Member of the Board of NTT Communications Corporation	
					Jun. 2012	Senior Executive Vice President Executive Manager of Corporate Strategy Planning Department Member of the Board of NTT Communications Corporation	
					Jun. 2013	Senior Executive Vice President Member of the Board of NTT Communications Corporation	
					Jun. 2014	Senior Executive Vice President Representative Member of the Board of the Company	
					Jun. 2018	President and Chief Executive Officer Member of the Board of the Company (present post)	
					Aug. 2018	President and Chief Executive Officer Member of the Board of NTT, Inc. (present post)	

Name	Position Responsibility	Years on the Board	Shares Owned	Number of Meetings Attended	Background and Experience		Principal Concurrent Positions
Akira Shimada	Senior Executive Vice President; In charge of business strategy and risk management; Member of the Board	7	9,804	13	Apr. 1981	Joined Nippon Telegraph and Telephone Public Corporation	Senior Executive Vice President of NTT, Inc.
					Jun. 2007	Vice President of Corporate Strategy Planning of the Company	
					Jul. 2007	General Manager of the Accounts and Finance Department of Nippon Telegraph and Telephone West Corporation	
					Jul. 2009	General Manager of the General Affairs and Personnel Department of Nippon Telegraph and Telephone East Corporation	
					Jun. 2011	Senior Vice President General Manager of the General Affairs and Personnel Department Member of the Board of Nippon Telegraph and Telephone East Corporation	
					Jun. 2012	Senior Vice President Head of the General Affairs Member of the Board of the Company	
					Jun. 2015	Executive Vice President Head of General Affairs Member of the Board of the Company	
					Jun. 2018	Senior Executive Vice President Member of the Board of the Company (present post)	
					Aug. 2018	Senior Executive Vice President of NTT, Inc. (present post)	
Motoyuki Ii	Senior Executive Vice President; In charge of technical strategy and international standardization; Member of the Board	1	6,900	10	Apr. 1983	Joined Nippon Telegraph and Telephone Public Corporation	President and Chief Executive Officer, Member of the Board of NTT Anode Energy Corp.
					Jun. 2011	Senior Vice President Executive Manager of the Plant Department of the Network Headquarters Executive Manager of the Planning Department of the Network Business Headquarters Member of the Board of Nippon Telegraph and Telephone East Corporation	
					Jul. 2013	Senior Vice President Executive Manager of the Plant Planning Department of the Network Business Headquarters Member of the Board of Nippon Telegraph and Telephone East Corporation	
					Jun. 2014	Senior Vice President Senior Executive Manager of the Corporate Sales Promotion Headquarters Member of the Board of Nippon Telegraph and Telephone East Corporation	
					Jun. 2015	Executive Vice President Senior Executive Manager of the Corporate Sales Promotion Headquarters Member of the Board of Nippon Telegraph and Telephone East Corporation	
					Jun. 2016	Senior Executive Vice President Senior Executive Manager of the Corporate Sales Promotion Headquarters Member of the Board of Nippon Telegraph and Telephone East Corporation	
					Jul. 2017	Senior Executive Vice President Senior Executive Manager of the Business Innovation Headquarters Member of the Board of Nippon Telegraph and Telephone East Corporation	
					Jun. 2018	Senior Executive Vice President Head of Technology Planning Member of the Board of the Company	
					Jun. 2019	President and Chief Executive Officer Member of the Board of NTT Anode Energy Corporation (present post)	
					Jun. 2019	Senior Executive Vice President Member of the Board of the Company (present post)	
Tsunehisa Okuno	Executive Vice President; Head of Global Business; Member of the Board	7	6,300	13	Apr. 1983	Joined Nippon Telegraph and Telephone Public Corporation	Director of NTT Security Corp. Member of the Board of NTT, Inc. Chairman of the Board of NTT Ltd.
					Jul. 2007	Vice President of the Corporate Business Strategy of the Company	
					Jun. 2008	Head of the Global Business Strategy Office of Strategic Business Development of the Company	
					Jan. 2011	Senior Vice President of Dimension Data Holdings plc	
					Jun. 2011	Head of Global Business of the Company	
					Jun. 2012	Senior Vice President Head of Global Business Member of the Board of the Company	
					Jun. 2016	Director of NTT Security Corporation (present post)	
					Jun. 2018	Executive Vice President Head of Global Business Member of the Board of the Company (present post)	
					Aug. 2018	Member of the Board of NTT, Inc. (present post)	
					Jul. 2019	Chairman of the Board of NTT Ltd. (present post)	

Name	Position Responsibility	Years on the Board	Shares Owned	Number of Meetings Attended	Background and Experience		Principal Concurrent Positions
Hiroki Kuriyama	Executive Vice President; Head of Strategic Business Development; In charge of 2020 Project Member of the Board	5	5,170	13	Apr. 1985 Feb. 2003 May 2005 Jun. 2008 Jun. 2012 Jun. 2014 Jun. 2019	Joined the Company Vice President of Department I of the Company Vice President of Corporate Business Strategy of the Company Vice President of Corporate Strategy Planning of the Company Vice President of President's Office of General Affairs of the Company Senior Vice President Head of Strategic Business Development Member of the Board of the Company Executive Vice President Head of Strategic Business Development Member of the Board of the Company (present post)	None
Takashi Hiroi	Senior Vice President; Head of Finance and Accounting; Member of the Board	4	4,500	13	Apr. 1986 May 2005 Jun. 2008 Jul. 2009 Jun. 2014 Jun. 2015	Joined the Company Vice President of Corporate Business Strategy of the Company Vice President of Strategic Business Development of the Company Vice President of Corporate Strategy Planning of the Company Head of Finance and Accounting of the Company Senior Vice President Head of Finance and Accounting Member of the Board of the Company (present post)	None
Eiichi Sakamoto	Senior Vice President; Head of General Affairs; Member of the Board	3	4,000	13	Apr. 1986 Oct. 2005 Jul. 2009 Jul. 2011 Jun. 2015 Jun. 2016 Jun. 2018	Joined the Company Head of the Business Management Group of the Corporate Strategy Planning Department of Nippon Telegraph and Telephone East Corporation Head of the Planning Group of the Corporate Strategy Planning Department of Nippon Telegraph and Telephone East Corporation Head of the Public Relations of the Corporate Strategy Planning of the Company Senior Vice President, Managing Director of Corporate Marketing Strategy Department of NTT DOCOMO, INC. Senior Vice President Head of the Corporate Strategy Planning of the Company Member of the Board of the Company Member of the Board of Nippon Telegraph and Telephone East Corporation (present post) Senior Vice President Head of General Affairs Member of the Board of the Company (present post)	Member of the Board of Nippon Telegraph and Telephone East Corp.
Katsuhiko Kawazoe	Senior Vice President; Head of Research and Development Planning; Member of the Board	1	2,200	10	Apr. 1987 Aug. 2003 Oct. 2007 Jul. 2008 Jul. 2014 Jul. 2016 Jun. 2018	Joined the Company Senior Research Engineer of the Cyberspace Laboratories of the Cyber Communications Laboratory Group of the Company Senior Research Engineer of the Cyber Solutions Laboratories of the Cyber Communications Laboratory Group of the Company Vice President of Research and Development Planning of the Company Head of the Service Evolution Laboratories of the Service Innovation Laboratory Group of the Company Head of the Service Innovation Laboratory Group of the Company Senior Vice President Head of Research and Development Planning Member of the Board of the Company (present post)	None
Ryota Kitamura	Senior Vice President; Head of Corporate Strategy Planning	1	1,800	10	Apr. 1988 Oct. 2003 Jun. 2011 Jul. 2015 Jun. 2018	Joined the Company Senior Manager of the Corporate Strategy Planning Department of Nippon Telegraph and Telephone East Corporation Head of the Marketing Strategy Group of the Corporate Strategy Planning Department of Nippon Telegraph and Telephone East Corporation Vice President of Corporate Strategy Planning of the Company Member of the Board of Nippon Telegraph and Telephone West Corporation (present post) Senior Vice President Head of the Corporate Strategy Planning of the Company Member of the Board of the Company (present post)	Member of the Board of Nippon Telegraph and Telephone West Corp.

Name	Position Responsibility	Years on the Board	Shares Owned	Number of Meetings Attended	Background and Experience		Principal Concurrent Positions
Atsuko Oka	Senior Vice President; Head of Technology Planning	-	0	-	Apr. 1988	Joined the Company	None
					Aug. 2006	Director of IP Service Department of the Net Business Division of NTT Communications Corporation	
					Jul. 2010	Representative Director and President of NTT NaviSpace Corporation	
					Jul. 2012	Director of Integrated Customer Portal Taskforce of the Corporate Strategy Planning Department of NTT Communications Corporation	
					Aug. 2015	Vice President of IoT Office of the Corporate Strategy Planning Department of NTT Communications Corporation	
					Jul. 2017	General Manager of Business Platform Division Member of the Board of NTT Resonant Incorporated	
					Oct. 2017	General Manager of Solutions Business Division Member of the Board of NTT Resonant Incorporated	
					Jun. 2019	Senior Vice President Head of Technology Planning of the Company Member of the Board of the Company (present post)	
Katsuhiko Shirai	Outside Independent Member of the Board	7	4,300	13	Apr. 1965	Assistant of the First Faculty of Science and Engineering of Waseda University	Honorary Advisor of Waseda University
					Apr. 1968	Full-time lecturer of the Faculty of Science and Engineering of Waseda University	
					Apr. 1970	Assistant Professor of the Faculty of Science and Engineering of Waseda University	
					Apr. 1975	Professor of the Faculty of Science and Engineering of Waseda University	
					Nov. 1994	Director of Academic Affairs and Director of the International Exchange Center of Waseda University	
					Nov. 1998	Executive Director of Waseda University	
					Nov. 2002	President of Waseda University	
					Nov. 2010	Educational Advisor of Waseda University	
					Apr. 2011	Chairperson of the Foundation for the Open University of Japan	
					Jun. 2012	Member of the Board of the Company (present post)	
					Jun. 2012	Director of Japan Display, Inc.	
					Nov. 2016	Honorary Advisor of Waseda University (present post)	
Sadayuki Sakakibara	Outside Independent Member of the Board	7	9,500	13	Apr. 1967	Joined Toyo Rayon Co., Ltd. (currently registered as Toray Industries, Inc.)	Outside Director of SHIMANO INC.
					Jun. 1994	Director of the Corporate Planning Department of Toray Industries, Inc.	
					Jun. 1996	Director of the Board of Toray Industries, Inc.	Outside Director of Nitori Holdings Co., Ltd.
					Jun. 1998	Managing Director of Toray Industries, Inc.	
					Jun. 1999	Senior Managing Director of Toray Industries, Inc.	
					Jun. 2001	Executive Vice President of Toray Industries, Inc.	
					Jun. 2002	President of Toray Industries, Inc.	
					Jun. 2010	Chairman and Representative Member of the Board of Toray Industries, Inc. Director of the Board of Mitsui O.S.K. Lines, Ltd.	
					Jun. 2012	Member of the Board of the Company (present post)	
					Jun. 2013	Director of Hitachi, Ltd.	
					Jun. 2014	Chairman of the Japan Business Federation (Keidanren)	
					Jun. 2014	Chairman of the Board of Directors, Toray Industries, Inc.	
					Jun. 2015	Chief Senior Adviser and Chief Senior Counselor of Toray Industries, Inc.	
					Jun. 2017	Senior Adviser of Toray Industries, Inc.	
					Aug. 2018	Special Adviser of Toray Industries, Inc.	
					Mar. 2019	Outside Director of SHIMANO INC. (present post)	
					May 2019	Outside Director of Nitori Holdings Co., Ltd. (present post)	
Ken Sakamura	Outside Independent Member of the Board	-	300	-	Apr. 2000	Professor of the Interfaculty Initiative in Information Studies and the Graduate School of Interdisciplinary Information Studies of the University of Tokyo	Professor and Dean of Faculty of Information Networking for Innovation and Design of Toyo University
					Jan. 2002	Director of YRP Ubiquitous Networking Laboratory (present post)	
					Apr. 2009	Director of Institute of Infrastructure Application of Ubiquitous Computing of the Interfaculty Initiative in Information Studies of the University of Tokyo	Emeritus Professor of the University of Tokyo
					Oct. 2014	President of Vitalizing Local Economy Organization by Open Data & Big Data (present post)	
					Apr. 2017	Professor and Dean of Faculty of Information Networking for Innovation and Design of Toyo University (present post) Head of collaboration Hub for University and Business of Toyo University	
					Jun. 2017	Emeritus Professor of the University of Tokyo (present post)	
					Jun. 2019	Member of the Board of the Company (Present post)	

Name	Position Responsibility	Years on the Board	Shares Owned	Number of Meetings Attended	Background and Experience		Principal Concurrent Positions
Keiko Takegawa	Outside Independent Member of the Board	-	0	-	Jul. 2008	Director-General for Policies on Cohesive Society and Minister's Secretariat of Cabinet Office	Professor of Showa Women's University

Audit & Supervisory Board Member of MITSUI MINING & SMELTING CO., LTD. |
					Jul. 2009	Director-General for Gender Equality Bureau of Cabinet Office	
					Dec. 2012	Director-General of the Public Relations Office of Cabinet Office	
					Jul. 2014	Director of the Gender Equality Bureau of Cabinet Office	
					Apr. 2019	Professor of Showa Women's University (present post)	
					Jun. 2019	Member of the Board of the Company (present post)	
					Jun. 2019	Audit & Supervisory Board Member of MITSUI MINING & SMELTING CO., LTD. (present post)	

Activities and Evaluation of the Effectiveness of the Board of Directors

The Board of Directors of NTT decides important items related to the Group's management which have passed the "Executive Officers Meeting," made up of the president, senior executive vice presidents, full-time directors, and the heads of the staff organization, as well as the review of the various committees chaired by the president or a senior executive vice president and attended by the relevant directors, while also monitoring the status of the execution of the duties of the individual Members of the Board.

At the meetings of the Board of Directors, based on the authority of the individual Members of the Board, current issues in group management and the initiatives being taken to resolve them are reported and reviewed, and in the fiscal year ended March 31, 2019, active discussions were held centering on important matters related to company and group management, such as the formulation and release of the NTT Group Medium-Term Management Strategy "Your Value Partner 2025," and the establishment of a Global Holding Company and related transfer of subsidiaries. Furthermore, in addition to holding advance explanations for outside independent Members of the Board on matters discussed at previous meetings of the Board of Directors, in the fiscal year ended March 31, 2019, explanations of matters such as immediate issues and the status of considerations were also given by Representative Members of the Board after meetings of the Board of Directors. By striving to clarify the focus of execution of duties and the purpose of initiatives, we are working to strengthen the supervisory function of the Board of Directors.

Furthermore, to allow the outside independent Members of the Board to more deeply understand the Company's business, meetings were held to exchange ideas and opinions on the executives and individual management strategies of the major subsidiaries, and they attended exhibitions of the research and development which the Company is focusing its efforts into and received explanations on topics such as the results of cutting-edge research. Additionally, ideas and opinions on issues in Group management were exchanged among the outside independent Members of the Board and the Audit & Supervisory Board Members, among the outside independent Members of the Board and the Representative Members of the Board, among the outside independent Members of the Board and the executives of the major Group companies in and outside Japan, and among the outside independent Members of the Board of NTT and the outside independent Members of the Board of the major Group companies and other members.

In these meetings, we received opinions on NTT's Board of Directors from the outside independent Members of the Board and the Audit & Supervisory Board Members that adequate information is provided and Members of the Board engage in active discussion, thereby ensuring the Board's effectiveness.

Also, with the aim of strengthening corporate governance through continuous improvement of the effectiveness of the Board of Directors, in the fiscal year ended March 31, 2019, questionnaire surveys regarding the Board of Directors were conducted targeting all Members of the Board, and the effectiveness of the Board was evaluated. Questions were asked with regard to the role and responsibilities of the Board of Directors, its composition, and its operation, and the results, which were compiled through a third-party organization, confirmed that the Board was sufficiently fulfilling its important role and responsibilities, with a majority of positive opinions for about 80% of the questions.

Moreover, given that there were opinions that recommended increasing the number of outside Members of the Board and ensuring diversity among Members of the Board, three directors have been appointed after the General Meeting of Shareholders that was held on June 25, 2019, and as a result, the number of independent outside directors increased by two members, and two female directors were appointed for the first time.

Taking into account these initiatives, NTT has evaluated that the effectiveness of the Board of Directors is being ensured.

Nomination Policies and Procedure for Members of the Board

NTT Group strives to contribute to the resolution of social issues and the realization of a safer, more secure, and more affluent society. To accomplish this goal, the Group acts as a trusted "Your Value Partner" that customers continue to select in order to provide them with new value on a global basis. NTT has established the policy of positioning human resources who share these ideals in the upper ranks of NTT Group's management, and NTT is electing these human resources from

both inside and outside the Group.

In regard to Member of the Board candidates, individuals are elected based on their having the broad-ranging perspective and experience, superior management skills and leadership, strong business intuition, and motivation necessary to contribute to the overall development of NTT Group in order to facilitate the increasing of NTT Group's corporate value.

From the perspective of strengthening the function of supervising business execution, for outside independent Members of the Board, NTT elects individuals who present no risk of a conflict of interest with general shareholders. In principle, NTT appoints several outside independent Members of the Board.

The nomination procedure for Member of the Board candidates involves the review of candidates by the Appointment and Compensation Committee. The candidates are then approved by the Board of Directors and presented for voting at the General Meeting of Shareholders.

Audit & Supervisory Board

(As of June 30, 2019)

Name	Position Responsibility	Years on the Board	Shares Owned	Number of Meetings Attended		Background and Experience		Principal Concurrent Positions
				Board of Directors	Audit & Supervisory Board			
Akiko Ide	Audit & Supervisory Board Member	5	10,200	13	24	Apr. 1977	Joined Nippon Telegraph and Telephone Public Corporation	Audit & Supervisory Board Member of NTT, Inc.
						Jun. 2003	General Manager of Customer Services of NTT DOCOMO, INC.	
						Sep. 2004	Concurrently General Manager of Customer Services and General Manager of Information Security of NTT DOCOMO, INC.	
						Jun. 2005	General Manager of Customer Services of NTT DOCOMO, INC.	
						Apr. 2006	General Manager of the Corporate Citizenship Department of NTT DOCOMO, INC.	
						Jun. 2006	Executive Director and General Manager of the Corporate Citizenship Department of NTT DOCOMO, INC.	
						Jul. 2008	Executive Director and General Manager of the Chugoku Regional Office of NTT DOCOMO, INC.	
						Jun. 2012	Executive Director and Director of Information Security of NTT DOCOMO, INC.	
						May 2013	President and Chief Executive Officer of Radishbo-ya Co., Ltd.	
						Jun. 2013	Executive Director and Senior Manager in Charge of Commerce Business Promotion of NTT DOCOMO, INC.	
						Jun. 2014	Full-Time Audit & Supervisory Board Member of the Company (present post)	
						Aug. 2018	Audit & Supervisory Board Member of NTT, Inc. (present post)	
Takao Maezawa	Audit & Supervisory Board Member	3	9,704	13	24	Apr. 1978	Joined Nippon Telegraph and Telephone Public Corporation	Audit & Supervisory Board Member of NTT, Inc.
						Jun. 2006	Executive Manager of the Human Resources Management Department General Manager of the Training Institute Executive Manager of General Affairs of NTT Communications Corporation	
						Jun. 2008	Senior Vice President Deputy General Manager of the Enterprise Business Division Member of the Board of NTT Communications Corporation	
						Jun. 2011	Executive Vice President Deputy General Manager of the Enterprise Business Division Member of the Board of NTT Communications Corporation	
						Aug. 2011	Executive Vice President Head of the Second Sales Division Member of the Board of NTT Communications Corporation	
						Jun. 2012	President and CEO of NTT PC Communications Incorporated	
						Jun. 2016	Full-Time Audit & Supervisory Board Member of the Company (present post)	
						Aug. 2018	Audit & Supervisory Board Member of NTT, Inc. (present post)	

Name	Position Responsibility	Years on the Board	Shares Owned	Number of Meetings Attended		Background and Experience		Principal Concurrent Positions
				Board of Directors	Audit & Supervisory Board			
Takashi Iida	Outside Independent Audit & Supervisory Board Member	5	3,200	13	24	Apr. 1974	Registered as Attorney-at-Law (Daini Tokyo Bar Association) (registration up-to-date) Joined Mori Sogo Law Offices (currently Mori Hamada & Matsumoto)	Lawyer Corporate Auditor for Shimadzu Corp. Outside Director of Alps Alpine Co., Ltd.
						Apr. 1991	Deputy Chairman of the Daini Tokyo Bar Association	
						Apr. 1997	Executive Governor of the Japan Federation of Bar Associations	
						Apr. 2006	Chairman of the Daini Tokyo Bar Association	
						Apr. 2006	Vice President of the Japan Federation of Bar Associations	
						Jan. 2012	Established Kowa Law Office (present post)	
						Jun. 2012	Corporate Auditor (Part-Time) for Shimadzu Corporation (present post)	
						Jun. 2013	Corporate Auditor of JAFCO Co., Ltd.	
						Jun. 2013	Outside Director of Alps Electric Co., Ltd. (currently registered as Alps Alpine Co., Ltd.) (present post)	
						Jun. 2014	Outside Audit & Supervisory Board Member of the Company (present post)	
Hideki Kanda	Outside Independent Audit & Supervisory Board Member	-	0	-	-	Apr. 1977	Research Assistant of the Faculty of Law of the University of Tokyo	Professor of the Professional School of Law of Gakushuin University Emeritus Professor of the University of Tokyo Director of Sumitomo Mitsui Trust Bank, Limited
						Apr. 1980	Lecturer of the Faculty of Law of Gakushuin University	
						Apr. 1982	Associate Professor of the Faculty of Law of Gakushuin University	
						Apr. 1988	Associate Professor of the Faculty of Law of the University of Tokyo	
						Apr. 1991	Associate Professor of the Graduate Schools for Law and Politics of the University of Tokyo	
						May 1993	Professor of the Graduate Schools for Law and Politics of the University of Tokyo	
						Apr. 2016	Professor of the Professional School of Law (Law School) of Gakushuin University (present post)	
						Jun. 2016	Emeritus Professor of the University of Tokyo (present post)	
						Jun. 2017	Director of Sumitomo Mitsui Trust Bank, Limited (present post)	
						Jun. 2019	Outside Audit & Supervisory Board Member of the Company (present post)	
Kaoru Kashima	Outside Independent Audit & Supervisory Board Member	-	0	-	-	Nov. 1981	Joined Showa Audit Corporation (currently Ernst & Young ShinNihon LLC)	Managing Director of Ernst & Young ShinNihon LLC Director of Sumitomo Mitsui Trust Bank, Limited
						Apr. 1985	Registered as a certified public accountant (registration up-to-date)	
						Jun. 1996	Partner of Showa Ota & Co. (currently Ernst & Young ShinNihon LLC)	
						Jun. 2002	Senior Partner of ShinNihon & Co. (currently Ernst & Young ShinNihon LLC)	
						Jul. 2006	In charge of personnel of HR Development Headquarters of ShinNihon & Co.	
						Sep. 2010	Managing Director of Ernst & Young ShinNihon LLC In charge of the Corporate Culture Promotion Office In charge of the Public Relations Office	
						Jul. 2012	General Manager of Knowledge Headquarters Managing Director of Ernst & Young ShinNihon LLC	
						Jul. 2013	Representative Director of Ernst & Young Institute Co., Ltd.	
						Jun. 2019	Outside Audit & Supervisory Board Member of the Company (present post)	
						Jun. 2019	Director of Sumitomo Mitsui Trust Bank, Limited (present post)	

Activities and Evaluation of the Effectiveness of the Audit & Supervisory Directors

Audit & Supervisory Board Members attend meetings of the Board of Directors and other important meetings. In addition, Audit & Supervisory Board Members meet periodically with Representative Members of the Board and Members of the Board to exchange ideas and opinions and hold discussions on various topics.

In the fiscal year ended March 31, 2019, the Audit & Supervisory Board met 24 times. Moreover, separate from meetings

of the Audit & Supervisory Board, the Audit & Supervisory Board Members' Preliminary Deliberation Meeting met 37 times. These meetings provide a venue for the sharing of information. For example, at these meetings, Audit & Supervisory Board Members receive explanations from corporate officers of matters to be discussed at the Executive Officers Meeting. Furthermore, Audit & Supervisory Board Members work closely with Independent Auditors and the Internal Control Office. Audit & Supervisory Board Members exchanged opinions with the Company's Independent Auditor 9 times and the Internal Control Office 12 times, and receive explanations of audit plans and reports on the status of internal control systems and provide advice as needed.

In initiatives related to Group companies, Audit & Supervisory Board Members received information from the Representative Members of the Board of 20 major Group companies regarding the status of corporate governance and measures to maintain and enhance corporate governance, and discussions were conducted on those matters. In addition, Audit & Supervisory Board Members visited major bases in Japan and overseas (18 bases), received information from local representatives, and conducted discussions. Furthermore, Audit & Supervisory Board Members received reports regarding audit results from Audit & Supervisory Board Members of major Group companies and exchanged opinions with them. In addition, the Audit & Supervisory Board is implementing initiatives that contribute to enhancing the auditing activities of Audit & Supervisory Board Members of major Group companies, including regularly holding training sessions by outside experts for Audit & Supervisory Board Members of major Group companies.

Through these activities, Audit & Supervisory Board Members support the sound, steady growth of NTT and Group companies from an independent perspective that differs from that of executives. In addition, Audit & Supervisory Board Members contribute to the strengthening of corporate governance systems and the fostering of awareness of compliance matters.

Independent Members of the Board and Audit & Supervisory Board Members

Nomination Procedure for Outside Members of the Board and Outside Audit & Supervisory Board Members

From the perspectives of strengthening supervising functions for execution and guaranteeing appropriate audits of the execution of duties by Members of the Board, NTT has the policy of selecting individuals to serve as outside Members of the Board and outside Audit & Supervisory Board Members who do not represent risks of conflicts of interest with general shareholders. NTT designates outside Members of the Board and outside Audit & Supervisory Board Members who fulfill both the independence criteria stipulated by Tokyo Stock Exchange, Inc., and NTT's own independence standards as outside independent Members of the Board or outside independent Audit & Supervisory Board Members.

Independence Standards

In order to meet the independence criteria, a person may not fall under any of the categories below in the last three fiscal years.
   (a) A person who executes business in a partner company that exceeds NTT's Standards[1]
   (b) A person who executes business in a lending company that exceeds NTT's Standards[2]
   (c) A consultant, an accountant, a lawyer, or any other person providing professional services, who received monetary payments or any other gain in assets equal to or more than ¥10 million, excluding the Board Members' or Audit & Supervisory Board Members' compensation, from NTT or its major subsidiaries[3] in any of the last three fiscal years
   (d) A person who executes business in an organization that received donations exceeding NTT's Standards[4]

Even if any of (a) through (d) above applies to a person, where it has been decided that a person meets the Independence Standards, the reasons shall be explained and disclosed at the time of the person's appointment as the Independent Member of the Board or Audit & Supervisory Board Member.

[1] "A partner company that exceeds NTT's Standards" is defined as a company that has had any business dealing with NTT and its major subsidiaries[3] in any of the last three fiscal years equal to or more than 2% of the total operating revenues of NTT and its major subsidiaries for the respective fiscal year.

[2] "A lending company that exceeds NTT's Standards" is defined as a company in which the total amount of borrowings on a consolidated basis in any of the last three fiscal years equals to or is more than 2% of NTT's consolidated total assets for the respective fiscal year.

[3] The major subsidiaries are NIPPON TELEGRAPH AND TELEPHONE EAST CORPORATION, NIPPON TELEGRAPH AND TELEPHONE WEST CORPORATION, NTT COMMUNICATIONS CORPORATION, NTT DATA CORPORATION, and NTT DOCOMO, INC.

[4] An "organization that received donations exceeding NTT's Standards" is defined as an organization which received donations from NTT and its major subsidiaries[3] in any of the last three fiscal years exceeding ¥10 million or 2% of the total income of the organization, whichever is larger, during the respective fiscal year.

Criteria for Selection and Activities of Outside Members of the Board and Audit & Supervisory Board Members

NTT, in order to strengthen functions for appropriately supervising and auditing business execution, seeks to strengthen its auditing system by appointing four outside independent Members of the Board. Each outside independent member of the board has a wealth of experience as operational director of an academic educational institution, as a corporate manager or as an officer of public relations and diversity promotion in the government; each has a high level of integrity and insight and,

by providing advice from a wide-ranging managerial perspective, plays an important role in helping to strengthen the supervisory function for business execution.

Outside Members of the Board receive reports from the corporate auditors and Internal Control Office regarding audit plans and results, and also oversee business operations by providing input as needed.

NTT appoints three outside independent Audit & Supervisory Board Members out of the five total Audit Supervisory & Board Members. NTT expects that each outside independent Audit & Supervisory Board Member conduct future audits based on the knowledge and insight they have gained throughout their careers. NTT's Audit & Supervisory Board, including the outside independent Audit & Supervisory Board Members, periodically exchange information with NTT's accounting auditors regarding audit plans, audit results and other information. The Audit & Supervisory Board also exchanges information with the Internal Control Office, including information relating to internal audit results.

Compensation of Members of the Board and Audit & Supervisory Board Members

For the purpose of improving objectivity and transparency in the compensation of Members of the Board, NTT has established the Appointment and Compensation Committee, which consists of four Members of the Board, including two outside independent Members of the Board. After discussion at this committee, compensation-related decisions are made by the Board of Directors.

Compensation of Members of the Board (excluding outside Members of the Board) consists of a base salary and a bonus. The base salary is paid monthly on the basis of the scope of each Member of the Board's roles and responsibilities. The bonus is paid taking into account NTT's business results for the respective fiscal year. Also, Members of the Board make monthly contributions of a defined amount or more from their base salary and bonus toward the purchase of NTT shares through the Board Members Shareholding Association, in order to reflect NTT's medium- and long-term business results in compensation. Purchased shares are to be held by Members of the Board throughout their terms of office. In order to maintain a high level of independence, compensation of outside Members of the Board consists of a base salary only, and is not linked to NTT's business results.

For the same reason, compensation of Audit & Supervisory Board Members consists of a base salary only. The amount of this salary is determined by resolution of the Audit & Supervisory Board.

Compensation of Independent Auditor

NTT and its major subsidiaries pay compensation to KPMG AZSA LLC, NTT's Independent Auditor, and other member firms of the KPMG network for audit services and for non-audit services.

Audit services	Auditing of the financial statements of NTT and its consolidated subsidiaries in Japan and overseas
Non-audit services	Include the provision of guidance and advice related to International Financial Reporting Standards, tax returns, and tax consultation for consolidated subsidiaries in Japan and overseas.

Internal Control

Overview of Internal Control Systems

NTT has established Basic Policies Concerning the Maintenance of Internal Control Systems for NTT Group, which were approved via resolution by the Board of Directors.

Based on these policies, NTT Group has established an Internal Control Office, which oversees the establishment of internal control rules and frameworks. In addition, NTT Group evaluates the effectiveness of the internal control systems based on audit reviews and uniform audits regarding high-risk matters affecting the entire Group. Necessary improvements will be implemented accordingly.

In regard to internal control systems for financial reporting based on the Financial Instruments and Exchange Act, the Company takes appropriate measures to ensure the reliability of its financial reporting. To facilitate these measures, tests and evaluations are performed on the implementation status of pertinent internal control systems.

Basic Policy of the Internal Control Systems https://www.ntt.co.jp/about_e/tousei.html

Strategic Shareholdings

NTT does not hold so-called "cross-shareholdings" to create stable shareholders, and has no plans to hold them in the future.

On the other hand, as one of its business policies, the Company pursues collaboration and open innovation with partners in various industries to contribute to medium- to long-term improvement in corporate value. Based on this policy, NTT holds and sells shares based on its determination of whether doing so would contribute to the improvement of medium- to long-term corporate value.

With respect to exercising voting rights of strategic shareholdings, NTT exercises voting rights acquired through share ownership, as it sees fit and appropriate, and upon determining whether it is an initiative that would contribute to the improvement of medium- to long-term corporate value, from the perspective of sustainable growth of the companies NTT invests in, and improving corporate value for both NTT and the companies.

Data

(As of June 30, 2019)

			Boundary	Unit	FY2018	FY2019	FY2020
Number of Board Members					12	12	15
	Inside	Male			10	10	10
		Female			0	0	1
		Total			10	10	11
	Outside independent	Male			2	2	3
		Female			0	0	1
		Total	NTT alone		2	2	4
Ratio of female Board Members				%	0	0	13.3
Number of Audit & Supervisory Board Members					5	5	5
	Inside	Male			1	1	1
		Female			1	1	1
		Total			2	2	2
	Outside independent	Male			2	2	2
		Female			1	1	1
		Total			3	3	3
Ratio of female Audit & Supervisory Board Members				%	40.0	40.0	40.0

(As of March 31, 2019)

		Boundary	Unit	FY2017	FY2018	FY2019
Board of Directors	Number of meetings			12	12	13
	Attendance			98.1	97.2	99.1
	Outside independent Board Member attendance		%	100	87.5	100
Audit & Supervisory Board	Number of meetings			22	22	24
	Attendance			96.4	95.2	99.2
	Outside independent Audit & Supervisory Board Member attendance		%	94.0	93.7	98.7
Appointment and Compensation Committee		NTT alone	Meetings	1	1	3
Total Compensation of Members of the Board and Audit & Supervisory Board Members (Number of payees)[1->4]	Members of the Board			510 (11)	519 (10)	547 (13)
	Audit & Supervisory Board Members		Million yen (number of people)	74 (3)	74 (2)	74 (2)
	Board and Outside Audit			71 (5)	75 (5)	75 (5)
	Total			655 (19)	668 (17)	696 (20)
Compensation of NTT's Independent Auditor	Compensation for audit services			5,004	6,036	4,433
	Compensation for non-audit services		Million yen	567	398	299
	Total			5,571	6,434	4,732

*1 At the 21st Ordinary General Meeting of Shareholders, the maximum limit on total annual compensation of Members of the Board was set at an aggregate of ¥750 million and the maximum limit on total annual compensation of Audit & Supervisory Board Members was set at an aggregate of ¥200 million.

*2 May include compensation to Board and Audit & Supervisory Board members who retired at the conclusion of the Ordinary General Meeting of Shareholders for the same fiscal year.

*3 Total compensation of Members of the Board includes ¥101 million in bonuses for the fiscal year.

*4 In addition to the above, Members of the Board who are also employees received bonuses for their service as employees.

Compliance

Policies and Concepts

It is imperative to conduct business in compliance with laws and regulations in the jurisdictions where we operate, and maintain high ethical standards in order to promote sound corporate activities. Recognizing this, NTT drew up the NTT Group Corporate Ethics Charter in 2002.

The charter, which applies to all officers and employees of NTT Group, lays out the basic principles of corporate ethics and provides specific guidelines for ethical behavior. The stipulations in the guidelines are intended to remind everyone of their duty as members of a telecommunications group that bears significant responsibility to society in terms of preventing dishonesty, misconduct, and the disclosure of corporate secrets, as well as refraining from exchanging excessive favors with customers and suppliers, and ensuring that they conduct themselves according to the highest ethical standards in both private and public activities.

NTT Group Corporate Ethics Charter

1. Recognizing the establishment of corporate ethics as one of its most important missions, top management shall exert its leadership to ensure that the spirit of this Charter is adopted throughout the Company, and shall assume full responsibility for solving any problems when any event inconsistent with that spirit occurs.

2. Every person with subordinate employees shall not only act in a self-disciplined manner, but shall also always provide guidance and assistance to his/her subordinate staff to ensure that their conduct is in conformity with our corporate ethics.

3. Every officer and employee of the NTT Group shall not only comply with all laws and regulations, social standards, and internal company rules whether in Japan or overseas, but officers and employees shall also hold the highest ethical philosophy within himself/herself both in public and in any private situations. Among other things, each officer and employee, as an officer or employee of a member of a Global Information Sharing Corporate Group, shall keep himself/herself fully aware that any disclosure of customer or other internal privileged information constitutes a materially wrongful act. Also, as a member of a group of companies which holds great social responsibilities, he/she shall strictly refrain from giving or receiving from customers, business partners, and other interested parties excessive gratuities.

4. Each NTT Group company, at the first opportunity, shall take initiatives to provide training programs in order to help its officers and employees enhance their awareness of our corporate ethics.

5. Every officer and employee of the NTT Group shall direct his/her efforts to prevent wrongful or scandalous acts which may potentially occur as specialization and advancement of our business proceeds. Each NTT Group company shall improve its system to prevent such acts, including, for instance, the re-assignment of contract representatives who have remained with the same customers for a long period of time, and the improvement of monitoring tools to protect customer and other information.

6. Any officer or employee who may come to know of the occurrence of any wrongful act or any scandal shall promptly report the wrongful act or scandal to his/her superior or other appropriate persons. If he/she is not able to make such a reporting, he/she may contact the "Corporate Ethics Help Line (Contact Point)." It should be noted that every officer and employee who reports the occurrence of any wrongful act or scandal shall be protected so that the reporting party shall not suffer any negative consequences due to such reporting.

7. In the event of an occurrence of any wrongful act or scandal, each NTT Group company shall be committed to the settlement of the problem by taking appropriate steps through a speedy and accurate fact finding process, and responding in a timely, suitable, and transparent manner in order to fulfill its social accountability.

NTT Group Corporate Ethics Charter   https://www.ntt.co.jp/csr_e/governance/compliance.html

Organization for Implementation

NTT has a Corporate Ethics Committee under the Executive Officers Meeting with a senior executive vice president as chair. The committee meets twice a year with the aim of thoroughly promoting NTT Group's corporate ethics and maintaining discipline. It reports to the Board of Directors twice a year, particularly concerning the status of reports made to the Corporate Ethics Help Line, and the Board of Directors discusses reported matters when necessary.

NTT Group has Corporate Ethics Committees and corporate ethics officers at Group companies. We foster a corporate climate of observing laws and corporate ethics, investigate wrongful acts and scandals based on our Corporate Ethics Help Line operational rules, hold regular meetings for the compliance officers of Group companies, and work across the Group to promote compliance.

Main Initiatives

Prevention of Bribery

NTT Group has the NTT Group Corporate Ethics Charter, which mandates compliance with all laws and regulations, social standards, and internal company rules whether in Japan or overseas. With regard to the prevention of bribery, we have an Anti-Bribery Handbook containing important matters to be understood and complied with by our employees. The contents of this handbook are made known to all employees in Japan and overseas through emails and other means.

In addition, NTT, NTT East and NTT West stipulate that taking bribes is forbidden under the Act on Nippon Telegraph and Telephone Corporation, etc. (hereafter "the NTT ACT") and that breaches are punishable by law. Following the Act on Prevention of Unjust Acts by Organized Crime Groups, contributions and other types of support are only given to charitable organizations deemed suitable by NTT Group. We have a zero tolerance approach to corruption.

In fiscal 2019, no illegal conduct associated with bribery or contribution/support was confirmed within NTT Group.

Political Contributions

As a holding company, and in compliance with Japan's Political Funds Control Law, NTT refrains from making political contributions, while a few Group companies make political contributions at their own discretion and in accordance with the relevant laws and regulations as well as the companies' respective codes of corporate ethics.

Request to Business Partners for Compliance and Risk Assessment

The Guidelines for CSR in Supply Chain, the operational guidelines we issue to our suppliers, clearly outlines fair trade practices and business ethics (nine articles). With respect to major suppliers, we conducted a survey on the status of CSR procurement. We checked activities concerning compliance in general, including their response to preventing corruption, illegal political contributions and antisocial forces, and also requested further improvements where necessary.

Compliance with Anti-Monopoly Laws

NTT Group has adhered to the Anti-Monopoly Act to ensure its business activities align with a fair and competitive business environment. These initiatives have been effective, as evidenced by the fact that continuing from the previous fiscal year, we were not fined for violation of anti-monopoly regulations in fiscal 2019.

Initiatives to Promote Awareness of the NTT Group Corporate Ethics Charter

At NTT, top management demonstrates that compliance requires NTT Group to comply with laws and conduct business with everyone having strong ethics. Also, the presidents of each NTT Group company have declared their commitment to identify risks related to illegal or illicit activities and never tolerate any form of impropriety. To ensure the effectiveness of the NTT Group Corporate Ethics Charter, we offer training sessions on corporate ethics to employees and, through a website for employees, we explain the declaration in detail and give examples of corporate ethics issues. Employees are reminded of the importance of ethics in June and December each year in an effort to raise their level of understanding. Furthermore, NTT conducts annual surveys of employees to measure their awareness, and the results are then used for awareness enhancement initiatives.

Corporate Ethics and Compliance Training

Corporate ethics training is conducted as part of continuous educational activities for all officers and employees. This training is tailored to meet the specific compliance and corruption risks of each company throughout NTT Group.

Furthermore, training for officers is also conducted every year.

Anti-Bribery Handbook

As a tool to help employees prevent corruption, we created the new Anti-Bribery Handbook in fiscal 2015, which is made known to all employees at NTT Group companies inside and outside of Japan through emails and other means. Along with a message from the president, the Anti-Bribery Handbook provides examples regarding the basics of bribery and facilitation payments to instill correct knowledge and understanding in all employees.

Competition Law Handbook

NTT Group created a Competition Law Handbook in fiscal 2020 as a tool for ensuring compliance with competition law among employees and it has been made known to all employees at NTT Group companies inside and outside of Japan. The handbook contains the basics regarding compliance with competition law within a Q&A format, as well as specific examples that might be found within the Company's business activities, in order to instill correct knowledge and understanding of competition law compliance in employees.

Check System for Penetration of Corporate Ethics

NTT conducts an annual survey that includes NTT Group companies in order to ascertain the extent to which employees are aware of compliance. At each NTT Group company, monitoring is performed under four different functions, comprising the departments in charge of business operations, compliance and internal auditing, as well as the Audit and Supervisory Board members, to ensure neutral and multifaceted checks are being performed.

NTT checks the status of compliance audit implementation at NTT Group companies with an internal auditing department and directly confirms the status of compliance initiatives inside NTT and at NTT Group companies without an internal auditing department. In fiscal 2018, these checks were performed on 13 NTT Group companies, including NTT.

Establishment of Corporate Ethics Help Line Contact Point

To prevent illegal conduct or a scandal, each Group company has set up an internal consulting center to handle reports of improper activities. In addition, NTT has established the Corporate Ethics Help Line as an external contact point for NTT Group companies and outsources its operation to a law firm. The help line also handles consultations and reports related to human rights issues (see page 065). The NTT Group Corporate Ethics Charter clearly states that people who file reports with these help lines will be protected from any disadvantage arising from the fact that they filed a report. The content of the consultations and reports are investigated and handled by the staff member in charge, and a report is submitted to the Corporate Ethics Committee of each Group company. All reports are collected at least once a year by NTT, where the response status is ascertained and reported to the Board of Directors.

In addition, since the contact point is independent from management, there is an independent reporting route to Audit & Supervisory Board Members. Reports made through our Corporate Ethics Help Line (external contact point) are in principle sent directly to Audit & Supervisory Board Members at the same time; reporting only to Audit & Supervisory Board Members is also possible.

Number of Reports Received by the Corporate Ethics Help Line (External Contact Point)

We monitor the number of reports received by the Corporate Ethics Help Line, and publish this number in our Sustainability Report and on NTT Group's CSR website.

Reports to the corporate ethics help line by type of violation

	FY2017			FY2018			FY2019		
	Number of Reports			Number of Reports			Number of Reports		
		Disciplinary actions	Warnings		Disciplinary actions	Warnings		Disciplinary actions	Warnings
Overall Number of Reports	365	32 (5)	71	350	23 (1)	75	334	18 (1)	77
Compliance Violations	103	32 (5)	71	98	23 (1)	75	95	18 (1)	77
Violation of Internal Rules	103	32 (5)	71	98	23 (1)	75	95	18 (1)	77
Violation of Laws and Regulations	0	0	0	0	0	0	0	0	0
No Violation	262	—	—	252	—	—	239	—	—
Harassment: Number of Reports	154	10 (0)	23	168	15 (0)	23	184	10 (1)	34
Compliance Violations	33	10 (0)	23	38	15 (0)	23	44	10 (1)	34
Violation of Internal Rules	33	10 (0)	23	38	15 (0)	23	44	10 (1)	34
Violation of Laws and Regulations (Violation of Human Rights)	0	0	0	0	0	0	0	0	0
No Violation	121	—	—	130	—	—	140	—	—
Misconduct: Number of Reports	77	2 (0)	15	73	1 (0)	23	44	2 (2)	10
Compliance Violations	17	2 (0)	15	24	1 (0)	23	12	2 (2)	10
Violation of Internal Rules	17	2 (0)	15	24	1 (0)	23	12	2 (2)	10
Violation of Laws and Regulations (Bribery, Accounting Fraud, Disguised Contracting, etc.)	0	0	0	0	0	0	0	0	0
No Violation	60	—	—	49	—	—	32	—	—
Fraud (personal use of company funds): Number of Reports	38	11 (2)	5	32	5 (1)	7	28	3 (0)	5
Compliance Violations	16	11 (2)	5	12	5 (1)	7	8	3 (0)	5
Violation of Internal Rules	16	11 (2)	5	12	5 (1)	7	8	3 (0)	5
Violation of Laws and Regulations	0	0	0	0	0	0	0	0	0
No Violation	22	—	—	20	—	—	20	—	—
Other: Number of Reports	96	9 (3)	28	77	2 (0)	22	78	3 (0)	28
Compliance Violations	37	9 (3)	28	24	2 (0)	20	31	3 (0)	28
Violation of Internal Rules	37	9 (3)	28	24	2 (0)	20	31	3 (0)	28
Violation of Laws and Regulations	0	0	0	0	0	0	0	0	0
No Violation	59	—	—	53	—	—	47	—	—

* Numbers in parentheses indicate dismissals

The Whistleblowing Mechanism Guidelines, revised in December 2016 by the Consumer Affairs Agency, recommend that neutral and fair third-party assessments be carried out. We had such an assessment carried out in May 2017 and received the comment that overall, a whistleblowing mechanism is in place and is being administered appropriately.

Details of assessment

1. Investigation of the mechanism and operational status of the help line in order to verify its effectiveness in terms of utilization and reliability.
2. Sample survey on the establishment of regulations and responses to whistleblowers, etc.
3. Confirmation of compliance with the Whistleblowing Mechanism Guidelines.
4. Interviews with administrators and discussion about operational issues.

Disciplinary Actions against Confirmed Violations

A compliance violation or breach of the NTT Group Corporate Ethics Charter is dealt with using the disciplinary measures taken in accordance with the disciplinary code established at each Group company. This includes pay cuts and work suspension, and may also be reflected in assessments (evaluations) and personnel transfers.
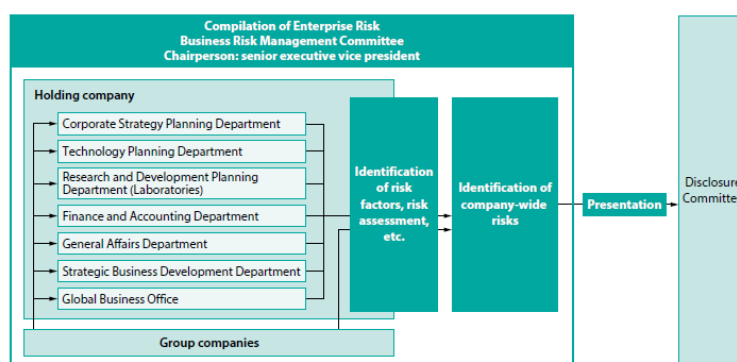
Risk Management

Policies and Concepts

NTT Group faces a rapidly changing business environment, including intensified competition in the information and telecommunications sector. In this context, NTT Group companies are exposed to an increasing amount of business risk.

NTT Group strives to minimize the impact of losses that could result from the materialization of risk by anticipating and preventing the occurrence of potential risks. As part of these efforts, NTT has formulated the NTT Group Business Risk Management Manual and has distributed it to all Group companies so that the entire Group can work together to conduct risk management. This manual contains policies for addressing various forms of risk facing NTT Group's business operations and approaches to coordination among NTT Group companies.

In addition, each Group company has formulated its own manuals and other guidelines, which reflect its specific business operations, business environment, and other factors, and is using these materials to control business risks.

Organization for Implementation

At NTT, Risk Management Regulations are in place, which define fundamental policies concerning in-house risk management for effective and efficient business operations. Risk management is carried out based on a continuous PDCA cycle under the leadership of the Business Risk Management Committee, chaired by the representative director and senior executive vice president, and comprised of heads of departments and offices as committee members.


At NTT Group, the Representative Director and Senior Executive Vice President of NTT is assigned ultimate responsibility for risk management, while each executive officer serves as the risk officer for the business area they are placed in charge of.

Identifying Material Risks

From time to time, NTT reviews assumed risks and management policies based on changes in the social environment.

The Business Risk Management Committee leads implementation of periodic risk analysis processes for each organization. A report is submitted to the Board of Directors, which reviews the results as well as the overall risk factors of each organization, prioritizes the material risks, and decides on responses.

Matters pertaining to risk management are discussed at meetings of the Business Risk Management Committee. As part of risk monitoring, each department in charge reports on the status of monitoring and risk mitigation effects to the Business Risk Management Committee, while the Internal Control Office conducts individual audits on the status of initiatives to address material risks and reports results to the Board of Directors in the subsequent fiscal year.
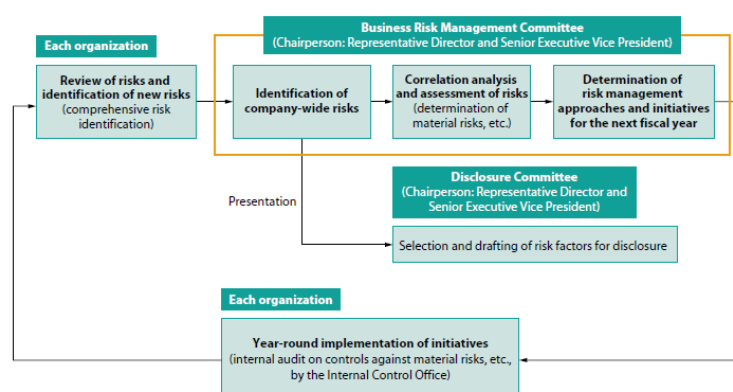
Response to Individual Risks

<Important Risk>

Risk from Cyber Terrorism

In recent years, as threats related to information security have become increasingly sophisticated and diversified, causing incidents such as damage due to cyberattacks and information leaks to emerge as social problems, developing information security countermeasures for smartphones, cloud services and other new ICT services has become an increasing concern.

Given these circumstances, service interruptions or disruptions in the quality of NTT Group's services due to cyberattacks, such as targeted attacks or unauthorized access of NTT Group's communication networks, servers or other equipment, or the leakage, tampering or loss of information due to intrusions into company networks, could occur, which could harm NTT Group's credibility and corporate image and thereby adversely affect NTT Group's results of operations and financial condition.

In consideration of these risks, NTT Group has been promoting the introduction of the latest research results, continuously strengthening network security, and strengthening its efforts to train highly-skilled personnel in the security field.

Risks Caused by Catastrophic Disasters

NTT Group has operations both domestically and abroad, and supports society and business activities through its communications networks and information systems. In addition, NTT Group provides a multitude of services that serve as necessary lifelines that ensures people's safety in their everyday lives.

With respect to the provision of these services, natural disasters such as earthquakes, tsunamis, typhoons and floods, pandemics such as new strains of influenza, and other issues including a larger-than-expected increase in telecommunication traffic, terrorism, armed action, regional conflict and various other events could cause system and network failure or threaten the safety of NTT Group employees. As a result, there may be occasions when disruptions in NTT Group's business operations make it impossible to provide reliable services, which may lead to NTT Group being held liable for related damages, potentially damaging NTT Group's credibility and corporate image. A large-scale disaster in particular could not only severely damage NTT Group's telecommunications networks, but could also harm NTT Group employees or cause damage to systems that could take a long time to restore, and the resulting emergency electricity use restrictions could hinder NTT Group's ability to provide reliable services. These events may lead to reductions in income and substantial repair costs.

In consideration of these risks, NTT Group has implemented a variety of measures, including strengthening the durability and water resistance of exchange offices, re-assessing its transmission lines, making capital investments in its network facilities to strengthen network resilience and accelerate response time in the event of malfunctions, conducting safety confirmation drills for its employees in preparation for disasters and improving initial response to restoration activities by AI-based damage prediction. Through these various efforts, NTT Group is taking steps towards ensuring safe and secure operations of its networks and systems which are essential to the provision of services.

NTT Group also provides and delivers systems and services to customers in the system integration business, which typically operates under a service contract model in which services are completed from the receipt of orders through the delivery dates.

As a result of this model, NTT Group generally assumes full contractual responsibility at all stages, but there is a possibility that a deviation from initial estimates or problems in project management at the development stage could result in cost overruns or losses due to delivery delays.

In consideration of these risks, for projects that are above a certain size, NTT Group has a review committee review cost estimates and the feasibility of project plans, and also monitors the progress of projects after they have been commissioned.

Investment Risk

NTT Group engages in joint ventures, alliances and collaborations, as well as acquisitions and other strategic investments to expand its global business operations in particular in response to changes in market structure and customers' needs.

However, NTT Group may not be able to maintain or enhance the value or financial performance of, or achieve sufficient synergies with, the domestic or overseas operations in which it has invested or agreed to invest or that it may in the future acquire. In addition, there may be occasions when NTT Group will suffer potential losses resulting from the dissolution or disposition of its investments, partnerships or other cooperative initiatives. Furthermore, the recent increase in the number of foreign subsidiaries within NTT Group may result in increased fragmentation within the group and render a common understanding difficult to achieve. There may be occasions when it is difficult for NTT to exert the control over its overseas subsidiaries necessary to oversee their business and operations. In addition, there is a risk that factors related to cross-border business, such as legal restrictions relating to investment and competition, differences in tax systems, differences in business customs including contract practices, labor relations, and international politics, may pose challenges to NTT Group's management of its overseas business activities. If such risks materialize, NTT Group's results of operations and financial condition may be adversely affected.

In consideration of these risks, NTT Group is proactively striving to expand its global business operations, and has worked to achieve expected returns from these endeavors by carrying out periodic post-acquisition monitoring of its investments. In addition, NTT Group established a global holding company, NTT, Inc., and is taking initiatives to further enhance the group governance and risk management of its global business.

Risk from Compliance Violations

NTT Group is subject to a wide variety of laws and regulations, as the scope of its business encompasses a variety of products and services both in Japan and abroad. As a result, some of NTT Group's business activities require licenses, notifications, and permit approvals. In addition, it is possible that NTT Group's growing business operations, especially outside of Japan, could be subject to additional burdens stemming from, among other things, the local rules and regulations of the countries in which NTT operates, or the lack thereof, the unpredictable nature of commercial and judicial interpretations of such local laws, the adoption of new laws and the revision of existing laws.

With respect to laws and regulations, it may not always be possible to eliminate compliance risk and reputational risk from loss of credibility, including, for example, in the case of an employee's improper personal behavior. The occurrence of any of the risks described above could adversely affect NTT Group's business, including its reputation and credibility, as well as NTT Group's ability to obtain new subscribers or its eligibility to secure governmental contracts, which could in turn adversely affect NTT Group's results of operations and financial condition.

In consideration of these risks, based on NTT Group's understanding that legal compliance is an extremely important corporate responsibility, NTT Group is working towards further strengthening its compliance systems in light of the tightening of bribery and anti-corruption laws in foreign countries, particularly the United States and the United Kingdom.

There is increasing societal demand to ensure the protection of confidential information, such as customers' personal information, as well as increasing requirements to protect such information from a legal standpoint.

However, given the further sophistication of criminal activities aimed at obtaining personal information and other confidential information, it is possible that NTT Group will be unable to eliminate the risk of a leak or misuse of confidential information.

In consideration of these risks, NTT Group has historically made efforts to protect confidential information, such as its customers' personal information, and NTT Group has also implemented the NTT Group Information Security Policy, which requires enhanced internal information management, training and awareness-raising for officers and employees. NTT Group expects to continue being able to ensure the proper management of confidential information in accordance with this policy.

<Emerging Risks*>

Risks Arising from Climate Change

Responsible for environmental activities across the whole Group, the Environmental Protection Office is assigned to identify environmental risks that could affect our businesses not only environmentally but also financially. As for the risks and opportunities with respect to individual facilities and equipment, monitoring and assessment are conducted through a collaborative effort between staff in charge of environmental issues and those responsible for facilities, and these individuals are appointed for every Group company. We consider future climate change a particularly imperative issue and are therefore working toward the environmental targets that have been set for the years leading up to 2030 (see page 031).

Service interruptions caused by damages to telecommunications equipment could occur frequently, owing to the increased scale and frequency of natural disasters such as torrential rainfall and typhoons attributable to climate change. This could lead to secondary affects due to the interruption of important telecommunication services, such as the 110, 119 and 118 numbers, and the inability to quickly restore services in such situations could damage the Company's reputation. In response, we are working to mitigate these effects should a natural disaster strike. This includes the use of multi-routing for communications networks and reinforcing disaster prevention measures of buildings housing our telecommunications equipment. Furthermore, we are also implementing measures that will enable us to quickly restore services in the event of a disaster by expanding the use of disaster resilient equipment and conducting regular training drills for disaster response personnel.

Please see page 041 for details about climate change risks and opportunities.

Risk of Workforce Shortages Caused by the Acceleration of the Reverse in Globalization

The recent political trend indicating the emergence of nationalism and populism, and growing worldwide uncertainty about the rise in terrorist and cyber terrorist attacks, could potentially cause a reversal in globalization, restricting the freedom of movement of human resources and making it difficult for NTT Group to secure the labor force it requires. Specifically, shortages of cyber security personnel could inhibit responses to security incidents that occur at customers or within NTT

Group, making it difficult to sustainably grow the security business, which is a core strategic business of NTT Group. In turn, this could affect profits and damage the Company's reputation.

In response to this risk, we are stepping up hiring of security personnel at Group companies inside and outside Japan as well as enhancing industry-wide training programs for developing the talent we require. Additionally, we are developing cross-functional security responses (incident detection, resolution, damage minimization, prevention, etc.) across NTT Group through NTT-CERT, which offers personnel who are experts in cutting edge and advanced security.

* Significant risks caused by unexpected changes.

Tax Policy

Basic Policy

All directors and employees of NTT Group have declared their commitment to complying with all laws and regulations, social standards, and internal company rules, whether in Japan or overseas, and acting in accordance with the highest ethical standards in both private and public activities. In tax-related operations, we also strive to maintain and enhance tax compliance by setting up guidelines and educating our employees.

Governance Structure

NTT has established a basic policy of internal control systems for NTT Group to deal with various risks including tax risks which has been approved by NTT's board. We define each company's roles in tax-related operations as follows.

> (1) NTT
> NTT establishes the basic policy and guidelines of tax-related operations and promotes appropriate measures in cooperation with its consolidated subsidiaries. NTT strives to gather information regarding regulations, notifies subsidiaries of any changes to regulations, and supervises subsidiaries.
>
> (2) NTT's Consolidated Subsidiaries
> NTT's consolidated subsidiaries fulfill their tax duties including preparing and filing tax returns, making tax payments, and dealing with tax audits appropriately in accordance with the basic policy and guidelines. NTT's consolidated subsidiaries report information and submit relevant documents to NTT as necessary.

Optimizing Tax costs

NTT and its consolidated subsidiaries should strive to utilize appropriately and effectively the tax relief measures with a view to maximizing shareholder value of NTT Group. NTT and its consolidated subsidiaries shall not implement any measures which may be considered or interpreted as tax evasion by regulators.

Tax Risks

When undertaking international transactions, NTT and its consolidated subsidiaries should ensure such transactions are given due consideration in advance of execution. NTT and its consolidated subsidiaries should consult with tax advisors and seek advice as necessary.

Furthermore, we have laid out the following measures regarding transfer pricing taxation and controlled foreign companies rules.

> **Transfer Pricing Taxation**
> - Prices that are applied to NTT Group's international transactions will be calculated in accordance with the laws and regulations of each country or region and the Transfer Pricing Guidelines published by the OECD and also in accordance with the "arm's length principle."
> - In cases where the documentation of the price calculation method is obligatory, or where such documentation is necessary due to factors such as transaction size and potential taxation risks, we will generate the documents in an appropriate manner.
>
> **Controlled Foreign Companies Rules**
> - When investing in a low-tax country, we will make appropriate tax payments in accordance with the laws and regulations of the relevant country or region.

Relationship with Tax Authorities

NTT Group aims to maintain good relationships with tax authorities through communication with them. All explanations given to tax authorities should be based on facts. NTT and its consolidated subsidiaries should work with them in a sincere and

appropriate manner.

If tax authorities were to notify NTT and its consolidated subsidiaries of tax adjustments, NTT and its consolidated subsidiaries should determine the cause of such issue (s) immediately, and take appropriate measures to prevent similar recurrences, unless NTT and its consolidated subsidiaries file a petition of objection or tax lawsuit.

Income Taxes Paid

	FY2017 (Billions of yen)
Japan	504.7
Others	39.5
Total	544.2

Independent Assurance Statement

SusA
Sustainability Accounting Co.,Ltd.

Independent Assurance Statement

September 25, 2019

Mr. Jun Sawada
President and Chief Executive Officer, Member of the Board
NIPPON TELEGRAPH AND TELEPHONE CORPORATION

1. Purpose

We, Sustainability Accounting Co., Ltd., have been engaged by NIPPON TELEGRAPH AND TELEPHONE CORPORATION ("the Company") to provide limited assurance on the Company's Performance Indicators during the fiscal year 2018 (April 1, 2018 to March 31, 2019) reported on NTT Group Sustainability Report 2019 which indicate the results of each indicator for "Ensure Reliable Communication" and "Unite the Energies of Team NTT" under CSR Priority Activities, GHG emissions; 0.16 million t-CO_2e for Scope1, 3.29 million t-CO_2e for Scope2 and 17.24 million t-CO_2e for Scope3, 562 thousand tons of total waste, and 6.28 million m³ of water withdrawal (tap water) The purpose of this process is to express our conclusion on whether the Performance Indicators were calculated in accordance with the Company's standards. The Company's management is responsible for calculating the Performance Indicators. Our responsibility is to independently carry out a limited assurance engagement and to express our assurance conclusion.

2. Procedures Performed

We conducted our assurance engagement in accordance with International Standard on Assurance Engagement 3000 (ISAE 3000) and International Standard on Assurance Engagement 3410 (ISAE 3410). The key procedures we carried out included:

- Interviewing the Company's responsible personnel to understand the Company's standards and reviewing the Company's standards
- Visiting to one of the Company's sites
- Performing cross-checks on a sample basis and performing a recalculation to determine whether the Performance Indicators were calculated in accordance with the Company's standards.

3. Conclusion

Based on the procedures performed, nothing has come to our attention that causes us to believe that the Performance Indicators have not been calculated in all material respects in accordance with the Company's standards.

Takashi Fukushima
Representative Director
Sustainability Accounting Co., Ltd.

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Comparative Table with GRI Standards

</div>

General Standard Disclosures

(V): Vision & Action Book

Disclosure	Indicator	Page	
Organizational Profile			
102-1	Name of the organization a. Name of the organization.	P003	Scope of Disclosure
102-2	Activities, brands, products, and services a. A description of the organization's activities. b. Primary brands, products, and services, including an explanation of any products or services that are banned in certain markets.	P5 (V)	NTT Group Now
102-3	Location of headquarters a. Location of the organization's headquarters.	P001	Inquiries
102-4	Location of operations a. Number of countries where the organization operates, and the names of countries where it has significant operations and/or that are relevant to the topics covered in the report.	P003	Scope of Disclosure Reference: List of NTT Group companies https://www.ntt.co.jp/gnavi_e/index.html
102-5	Ownership and legal form a. Nature of ownership and legal form.	P003	Scope of Disclosure

102-6	Markets served
	a. Markets served, including:
	  i. geographic locations where products and services are offered;
	  ii. sectors served;
	  iii. types of customers and beneficiaries.
		P003
		P5 (V)
			Scope of Disclosure
			NTT Group Now

102-7	Scale of the organization
	a. Scale of the organization, including:
	  i. total number of employees;
	  ii. total number of operations;
	  iii. net sales (for private sector organizations) or net revenues (for public sector organizations);
	  iv. total capitalization (for private sector organizations) broken down in terms of debt and equity;
	  v. quantity of products or services provided.
		P004	Basic Information

102-8	Information on employees and other workers a. Total number of employees by employment contract (permanent and temporary), by gender. b. Total number of employees by employment contract (permanent and temporary), by region. c. Total number of employees by employment type (full-time and part-time), by gender. d. Whether a significant portion of the organization's activities are performed by workers who are not employees. If applicable, a description of the nature and scale of work performed by workers who are not employees. e. Any significant variations in the numbers reported in Disclosures 102-8-a, 102-8-b, and 102-8-c (such as seasonal variations in the tourism or agricultural industries). f. An explanation of how the data have been compiled, including any assumptions made.	P004 P081	Basic Information Personnel and Labor Data
102-9	Supply chain a. A description of the organization's supply chain, including its main elements as they relate to the organization's activities, primary brands, products, and services.	P066-068	Reinforce value chain management

102-10	Significant changes to the organization and its supply chain
	a. Significant changes to the organization's size, structure, ownership, or supply chain, including:
	  i. Changes in the location of, or changes in, operations, including facility openings, closings, and expansions;
	  ii. Changes in the share capital structure and other capital formation, maintenance, and alteration operations (for private sector organizations);
	  iii. Changes in the location of suppliers, the structure of the supply chain, or relationships with suppliers, including selection and termination.
		P004	Major M&A During the Past Year

102-11	Precautionary Principle or approach a. Whether and how the organization applies the Precautionary Principle or approach.	P041-042 P100-103	Initiatives for Tackling Climate Change Risk Management
102-12	External initiatives a. A list of externally-developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes, or which it endorses.	P039 P054	Pursuing Initiatives across the Industry for Energy –Efficient ICT Devices Management of CSIRT
102-13	Membership of associations a. A list of the main memberships of industry or other associations, and national or international advocacy organizations.	P004	List of Memberships

Disclosure	Indicator	Page	
Strategy			
102-14	Statement from senior decision-maker a. A statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and its strategy for addressing sustainability.		Message from the President https://www.ntt.co.jp/csr_e/topmessage.html
102-15	Key impacts, risks, and opportunities a. A description of key impacts, risks, and opportunities.	P041-042 P100-103	Initiatives for Tackling Climate Change Risk Management
Ethics and Integrity			
102-16	Values, principles, standards, and norms of behavior a. A description of the organization's values, principles, standards, and norms of behavior.	P005 P030 P031 P063 P096	NTT Group CSR Charter NTT Group Global Environment Charter NTT Group Environmental Statement NTT Group's Human Rights Charter, Our Basic Policy on Human Rights NTT Group Corporate Ethics Charter

102-17	Mechanisms for advice and concerns about ethics
	a. A description of internal and external mechanisms for:
	   i. seeking advice about ethical and lawful behavior, and organizational integrity;
	   ii. reporting concerns about unethical or unlawful behavior, and organizational integrity.
		P098	Establishment of Corporate Ethics Help Line Contact Point

Governance			
102-18	Governance structure a. Governance structure of the organization, including committees of the highest governance body. b. Committees responsible for decision-making on economic, environmental, and social topics.	P011 P034 P084-085 P100	CSR Management System Environmental Management Overview of Corporate Governance Systems Risk Management System
102-19	Delegating authority a. Process for delegating authority for economic, environmental, and social topics from the highest governance body to senior executives and other employees.	P011	CSR Management System
102-20	Executive-level responsibility for economic, environmental, and social topics a. Whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental, and social topics. b. Whether post holders report directly to the highest governance body.	P011 P085-089	CSR Management System Board of Directors
102-21	Consulting stakeholders on economic, environmental, and social topics a. Processes for consultation between stakeholders and the highest governance body on economic, environmental, and social topics. b. If consultation is delegated, describe to whom it is delegated and how the resulting feedback is provided to the highest governance body.	P013-016	Stakeholder Engagement

102-22	Composition of the highest governance body and its committees
	a. Composition of the highest governance body and its committees by:
	   i. executive or non-executive;
	   ii. independence;
	   iii. tenure on the governance body;
	   iv. number of each individual's other significant positions and commitments, and the nature of the commitments;
	   v. gender;
	   vi. membership of under-represented social groups;
	   vii. competencies relating to economic, environmental, and social topics;
	   viii. stakeholder representation.
		P084-095	Corporate Governance

102-23	Chair of the highest governance body a. Whether the chair of the highest governance body is also an executive officer in the organization. b. If the chair is also an executive officer, describe his or her function within the organization's management and the reasons for this arrangement.	P085-089	Board of Directors

102-24	Nominating and selecting the highest governance body
	a. Nomination and selection processes for the highest governance body and its committees.
	b. Criteria used for nominating and selecting highest governance body members, including whether and how:
	   i. stakeholders (including shareholders) are involved;
	   ii. diversity is considered;
	   iii. independence is considered;
	   iv. expertise and experience relating to economic, environmental, and social topics are considered.
		P090
		
		P091
		
		P092
			Nomination Policies and Procedure for Members of the Board
			Activities and Evaluation of the Effectiveness of the Audit & Supervisory Directors
			Criteria for Selection and Activities of Outside Members of the Board and Audit & Supervisory Board Members

102-25	Conflicts of interest
	a. Processes for the highest governance body to ensure conflicts of interest are avoided and managed.
	b. Whether conflicts of interest are disclosed to stakeholders, including, as a minimum:
	   i. Cross-board membership;
	   ii. Cross-shareholding with suppliers and other stakeholders;
	   iii. Existence of controlling shareholder;
	   iv. Related party disclosures.
		P084-095	Corporate Governance

Disclosure	Indicator	Page	
102-26	Role of highest governance body in setting purpose, values, and strategy a. Highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental, and social topics.	P011 P084-085	CSR Management System Overview of Corporate Governance System
102-27	Collective knowledge of highest governance body a. Measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental, and social topics.	P089 P091	Activities and Evaluation of the Effectiveness of the Board of Directors Activities and Evaluation of the Effectiveness of the Audit & Supervisory Directors
102-28	Evaluating the highest governance body's performance a. Processes for evaluating the highest governance body's performance with respect to governance of economic, environmental, and social topics. b. Whether such evaluation is independent or not, and its frequency. c. Whether such evaluation is a self-assessment. d. Actions taken in response to evaluation of the highest governance body's performance with respect to governance of economic, environmental, and social topics, including, as a minimum, changes in membership and organizational practice.	-	
102-29	Identifying and managing economic, environmental, and social impacts a. Highest governance body's role in identifying and managing economic, environmental, and social topics and their impacts, risks, and opportunities - including its role in the implementation of due diligence processes. b. Whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental, and social topics and their impacts, risks, and opportunities.	P011 P041-042 P100-103	CSR Management System Initiatives for Tackling Climate Change Risk Management
102-30	Effectiveness of risk management processes a. Highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental, and social topics.	P011 P100-103	CSR Management System Risk Management
102-31	Review of economic, environmental, and social topics a. Frequency of the highest governance body's review of economic, environmental, and social topics and their impacts, risks, and opportunities.	P011 P100-103	CSR Management System Risk Management
102-32	Highest governance body's role in sustainability reporting a. The highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material topics are covered.	P011	CSR Management System
102-33	Communicating critical concerns a. Process for communicating critical concerns to the highest governance body.	P013-016 P016 P021 P065 P075 P098	Stakeholder Engagement Engagement with Shareholders, Investors, and Other Relevant Organizations Customer Contact Points Contact Point for Human Rights Issues Favorable Labor-Management Relationship Establishment of Corporate Ethics Help Line Contact Point
102-34	Nature and total number of critical concerns a. Total number and nature of critical concerns that were communicated to the highest governance body. b. Mechanism (s) used to address and resolve critical concerns.	P098	Establishment of Corporate Ethics Help Line Contact Point

102-35	Remuneration policies
	a. Remuneration policies for the highest governance body and senior executives for the following types of remuneration:
	  i. Fixed pay and variable pay, including performance-based pay, equity-based pay, bonuses, and deferred or vested shares;
	  ii. Sign-on bonuses or recruitment incentive payments;
	  iii. Termination payments;
	  iv. Clawbacks;
	  v. Retirement benefits, including the difference between benefit schemes and contribution rates for the highest governance body, senior executives, and all other employees.
	b. How performance criteria in the remuneration policies relate to the highest governance body's and senior executives' objectives for economic, environmental, and social topics.
		P085-089
		P093
			Board of Directors
			Compensation of Members of the Board and Audit & Supervisory Board Members

102-36	Process for determining remuneration a. Process for determining remuneration. b. Whether remuneration consultants are involved in determining remuneration and whether they are independent of management. c. Any other relationships that the remuneration consultants have with the organization.	P093	Compensation of Members of the Board and Audit & Supervisory Board Members
102-37	Stakeholders' involvement in remuneration a. How stakeholders' views are sought and taken into account regarding remuneration. b. If applicable, the results of votes on remuneration policies and proposals.	P093	Compensation of Members of the Board and Audit & Supervisory Board Members

Disclosure	Indicator	Page	
102-38	Annual total compensation ratio a. Ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country.	The ratio of the compensation per director to the compensation per employee in Japan, an important country for NTT Group. 5.3:1	
102-39	Percentage increase in annual total compensation ratio a. Ratio of the percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country.	-	
Stakeholder Engagement			
102-40	List of stakeholder groups a. A list of stakeholder groups engaged by the organization.	P014-015	Identifying Stakeholders
102-41	Collective bargaining agreements a. Percentage of total employees covered by collective bargaining agreements	P075	Favorable Labor-Management Relationship
102-42	Identifying and selecting stakeholders a. The basis for identifying and selecting stakeholders with whom to engage.	P012-015	Stakeholders Engagement
102-43	Approach to stakeholder engagement a. The organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	P012-015	Stakeholders Engagement

102-44	Key topics and concerns raised
	a. Key topics and concerns that have been raised through stakeholder engagement, including:
	  i. how the organization has responded to those key topics and concerns, including through its reporting;
	  ii. the stakeholder groups that raised each of the key topics and concerns.
		P012-015	Stakeholders Engagement

Reporting Practice			
102-45	Entities included in the consolidated financial statements a. A list of all entities included in the organization's consolidated financial statements or equivalent documents. b. Whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	P004	NTT Group in Brief Reference: List of NTT Group companies https://www.ntt.co.jp/gnavi_e/index.html
102-46	Defining report content and topic Boundaries a. An explanation of the process for defining the report content and the topic Boundaries b. An explanation of how the organization has implemented the Reporting Principles for defining report content.	P007-010	NTT Group's Material Issues
102-47	List of material topics a. A list of the material topics identified in the process for defining report content.	P007-010	NTT Group's Material Issues
102-48	Restatements of information a. The effect of any restatements of information given in previous reports, and the reasons for such restatements.	Not applicable	
102-49	Changes in reporting a. Significant changes from previous reporting periods in the list of material topics and topic Boundaries.	Not applicable	
102-50	Reporting period a. Reporting period for the information provided.	P002	Reporting Period
102-51	Date of most recent report a. If applicable, the date of the most recent previous report.	P002	Reporting Period
102-52	Reporting cycle a. Reporting cycle.	P002	Reporting Period
102-53	Contact point for questions regarding the report a. The contact point for questions regarding the report or its contents.	P001	Inquiries

102-54	Claims of reporting in accordance with the GRI Standards
	a. The claim made by the organization, if it has prepared a report in accordance with the GRI Standards, either:
	  i. 'This report has been prepared in accordance with the GRI Standards: Core option';
	  ii. 'This report has been prepared in accordance with the GRI Standards: Comprehensive option'.
		-	

102-55	GRI content index
	a. The GRI content index, which specifies each of the GRI Standards used and lists all disclosures included in the report.
	b. For each disclosure, the content index shall include:
	  i. the number of the disclosure (for disclosures covered by the GRI
	  ii. Standards);
	  iii. the page number (s) or URL (s) where the information can be found, either within the report or in other published materials;
	  iv. if applicable, and where permitted, the reason (s) for omission when a required disclosure cannot be made.
		Comparative Table with GRI Standards (refer to this table)	

Disclosure	Indicator	Page	

102-56	External assurance
	a. A description of the organization's policy and current practice with regard to seeking external assurance for the report.
	b. If the report has been externally assured:
	  i. A reference to the external assurance report, statements, or opinions. If not included in the assurance report accompanying the sustainability report, a description of what has and what has not been assured and on what basis, including the assurance standards used, the level of assurance obtained, and any limitations of the assurance process;
	  ii. The relationship between the organization and the assurance provider;
	  iii. Whether and how the highest governance body or senior executives are involved in seeking external assurance for the organization's sustainability report.
		P106	Independent Assurance Statement

Management Approach			

103-1	Explanation of the material topic and its Boundary
	a. An explanation of why the topic is material.
	b. The Boundary for the material topic, which includes a description of:
	  i. where the impacts occur;
	  ii. the organization's involvement with the impacts. For example, whether the organization has caused or contributed to the impacts, or is directly linked to the impacts through its business relationships.
	c. Any specific limitation regarding the topic Boundary.
		P019
		P021
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			Contribute to Society through ICT and Data Usage
			Pursue Customer Satisfaction
			Reinforce and Globalize Research and Development
			Our Thinking Concerning the Environment
			Realizing a Low Carbon Future
			Implementing Closed Loop Recycling
			Planning a Future of Natural Harmony
			Reinforce Information Security
			Personal Information Protection
			Ensure Stability and Reliability of Communications Services
			Promote Diversity
			Respect for Human Rights
			Reinforce Value Chain Management
			Ensure Employee Safety
			Promote Health Management
			Create Attractive Workplaces
			Promote a United Group Effort on Social Contribution Activities

103-2	The management approach and its components
	For each material topic, the reporting organization shall report the following information:
	a. An explanation of how the organization manages the topic.
	b. A statement of the purpose of the management approach.
	c. A description of the following, if the management approach includes that component:
	  i. Policies
	  ii. Commitments
	  iii. Goals and targets
	  iv. Responsibilities
	  v. Resources
	  vi. Grievance mechanisms
	  vii. Specific actions, such as processes, projects, programs and initiatives
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103-3	Evaluation of the management approach
	a. An explanation of how the organization evaluates the management approach, including:
	  i. the mechanisms for evaluating the effectiveness of the management approach;
	  ii. the results of the evaluation of the management approach;
	  iii. any related adjustments to the management approach.
		-	

Topic-specific Standards

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200: Economic			
Economic Performance			
201-1	Direct economic value generated and distributed	P004	Basic Information
		P073, P081	Improving Human Resource Management and Payment Systems
		P076, P083	Promote a United Group Effort on Social Contribution Activities
201-2	Financial implications and other risks and opportunities due to climate change	P041-042	Initiatives for Tackling Climate Change
201-3	Defined benefit plan obligations and other retirement plans	Reference: Annual securities report, Employee Benefits, pages 183-189 https://www.ntt.co.jp/ir/library_e/yuho/pdf/34yuho.pdf	
201-4	Financial assistance received from government	Reference: Annual securities report, Major Shareholders, page 69	
Market Presence			
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	-	
202-2	Proportion of senior management hired from the local community	-	
Indirect Economic Impacts			
203-1	Infrastructure investments and services supported	P019-020	Contribute to society through ICT and Data Usage
		P020	Pursue Customer Satisfaction
		P022-026	Reinforce and Globalize Research and Development
		P057-058	Ensure Stability and Reliability of Communications Services
203-2	Significant indirect economic impacts	P019-020	Contribute to society through ICT and Data Usage
		P022-026	Reinforce and Globalize Research and Development
		P054	Management of CSIRT
Procurement Practices			
204-1	Proportion of spending on local suppliers	-	
Anti-corruption			
205-1	Operations assessed for risks related to corruption	P097	Prevention of Bribery
205-2	Communication and training about anti-corruption policies and procedures	P097	Initiatives to Promote Awareness of the NTT Group Corporate Ethics Charter
205-3	Confirmed incidents of corruption and actions taken	P097	Initiatives to Promote Awareness of the NTT Group Corporate Ethics Charter
Anti-competitive Behavior			
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	P097	Compliance with Anti-Monopoly Laws
300: Environmental			
Materials			
301-1	Materials used by weight or volume	P038	Environmental Impacts Overview
		P045	Paper Management and Recycling
		P049	Environmental Performance Data
301-2	Recycled input materials used	P038	Environmental Impacts Overview
		P044-45,	Implementing Closed Loop Recycling
		P049	Environmental Performance Data
301-3	Reclaimed products and their packaging materials	P038	Environmental Impacts Overview
		P044-45,	Implementing Closed Loop Recycling
		P045	Paper Management and Recycling
Energy			
302-1	Energy consumption within the organization	P038	Environmental Impacts Overview
		P040-041	CO_2 Emissions of NTT Group
		P047-048	Environmental Performance Data
302-2	Energy consumption outside of the organization	P038	Environmental Impacts Overview
		P047-048	Environmental Performance Data
302-3	Energy intensity	-	
302-4	Reduction of energy consumption	P031-033	The Eco Strategy 2030
		P039-043	Realizing a Low Carbon Future
302-5	Reduction in energy requirements of products and services	P039-043	Realizing a Low Carbon Future
Water			
303-1	Water withdrawal by source	P038	Environmental Impacts Overview
		P045	Water Management
303-2	Water sources significantly affected by withdrawal of water	P045	Water Management
303-3	Water recycled and reused	P045	Water Management
Biodiversity			
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	P046	Planning a Future of Natural Harmony
304-2	Significant impacts of activities, products, and services on biodiversity	P046	Planning a Future of Natural Harmony
304-3	Habitats protected or restored	P046	Planning a Future of Natural Harmony
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	P046	Planning a Future of Natural Harmony

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Emissions			
305-1	Direct (Scope 1) GHG emissions	P038 P040-041 P047-048	Environmental Impacts Overview CO_2 Emissions of NTT Group Environmental Performance Data
305-2	Energy indirect (Scope 2) GHG emissions	P038 P040-041 P047-048	Environmental Impacts Overview CO_2 Emissions of NTT Group Environmental Performance Data
305-3	Other indirect (Scope 3) GHG emissions	P038 P048	Environmental Impacts Overview Environmental Performance Data
305-4	GHG emissions intensity	-	
305-5	Reduction of GHG emissions	P031-033 P039-043	The Eco Strategy 2030 Realizing a Low Carbon Future
305-6	Emissions of ozone-depleting substances (ODS)	-	
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	-	
Effluents and Waste			
306-1	Water discharge by quality and destination	P038 P045 P049	Environmental Impacts Overview Water Management Environmental Performance Data
306-2	Waste by type and disposal method	P031-033 P038 P049	The Eco Strategy 2030 Environmental Impacts Overview Environmental Performance Data
306-3	Significant spills	P045 P045	Hazardous Waste Water Management
306-4	Transport of hazardous waste	P045	Hazardous Waste
306-5	Water bodies affected by water discharges and/or runoff	P045	Water Management
Environmental Compliance			
307-1	Non-compliance with environmental laws and regulations	P037	Compliance with Environmental Laws and Regulations
Supplier Environmental Assessment			
308-1	New suppliers that were screened using environmental criteria	P036 P066-068	Pursuing Initiatives across the Industry for Energy-Efficient ICT Devices Reinforce Value Chain Management
308-2	Negative environmental impacts in the supply chain and actions taken	P066-068	Reinforce Value Chain Management
400: Social			
Employment			
401-1	New employee hires and employee turnover	P081	Personnel and Labor Data
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	P062 P062 P073 P074	Continuous Employment of Employees at Retirement Age Rehiring Program for Employees Who Resigned Promoting Work-Life Management Support for Balancing Work with Childcare or Nursing Care
401-3	Parental leave	P074	Support for Balancing Work with Childcare or Nursing Care
Labor/Management Relations			
402-1	Minimum notice periods regarding operational changes	P071	Favorable Labor-Management Relationship
Occupational Health and Safety			
403-1	Workers representation in formal joint management–worker health and safety committees	100% of full-time employees are represented.	
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	P082	Number of Employees Using Company Systems, Working Hours, etc.
403-3	Workers with high incidence or high risk of diseases related to their occupation	P069	Ensure Employee Safety
403-4	Health and safety topics covered in formal agreements with trade unions	P069	Ensure Employee Safety
Training and Education			
404-1	Average hours of training per year per employee	P076	Helping Employees Develop their Abilities
404-2	Programs for upgrading employee skills and transition assistance programs	P076-077	Human Resource Development
404-3	Percentage of employees receiving regular performance and career development reviews	P072	Fair Evaluation and Compensation
Diversity and Equal Opportunity			
405-1	Diversity of governance bodies and employees	P061-062 P085-89 P090-091	Promote Diversity Board of Director Audit & Supervisory Board
405-2	Ratio of basic salary and remuneration of women to men	-	
Non-discrimination			
406-1	Incidents of discrimination and corrective actions taken	P065	Incidents of Human Rights Violations and Corrective Actions
Freedom of Association and Collective Bargaining			
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	P030-065 P066-068 P075	Respect for Human Rights Reinforce Value Chain Management Favorable Labor-Management Relationship
Child Labor			
408-1	Operations and suppliers at significant risk for incidents of child labor	P030-065 P066-068	Respect for Human Rights Reinforce Value Chain Management

Disclosure	Indicator	Page	
Forced or Compulsory Labor			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	P030-065 P066-068	Respect for Human Rights Reinforce Value Chain Management
Security Practices			
410-1	Security personnel trained in human rights policies or procedures	-	
Rights of Indigenous Peoples			
411-1	Incidents of violations involving rights of indigenous peoples	P065	Incidents of Human Rights Violations and Corrective Actions
Human Rights Assessment			
412-1	Operations that have been subject to human rights reviews or impact assessments	P030-065	Respect for Human Rights
412-2	Employee training on human rights policies or procedures	P065	Group-wide Human Rights Training and Education Programs
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	P066-068 P097	Reinforce Value Chain Management Prevention of Bribery
Local Communities			
413-1	Operations with local community engagement, impact assessments, and development programs	P057-058 P078-079	Ensure Stability and Reliability of Communications Services Promote a United Group Effort on Social Contribution Activities
413-2	Operations with significant actual and potential negative impacts on local communities	Not applicable	
Supplier Social Assessment			
414-1	New suppliers that were screened using social criteria	P066-068 P097	Reinforce Value Chain Management Prevention of Bribery
414-2	Negative social impacts in the supply chain and actions taken	P066-068 P097	Reinforce Value Chain Management Prevention of Bribery
Public Policy			
415-1	Political contributions	P097-098	Prevention of Bribery
Customer Health and Safety			
416-1	Assessment of the health and safety impacts of product and service categories	The Act on Nippon Telegraph and Telephone Corporation, etc. prohibits NTT from providing services directly to users. For that reason, NTT does not assess the health and safety impacts of its products and services.	
416-2	Incidents of non-compliance concerning the health and safety impacts of products and service	Not applicable	
Marketing and Labeling			
417-1	Requirements for product and service information and labeling	P058	Ensure Stability and Reliability of Communications Services
417-2	Incidents of non-compliance concerning product and service information and labeling	Not applicable	
417-3	Incidents of non-compliance concerning marketing communications	Not applicable	
Customer Privacy			
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	-	
Socioeconomic Compliance			
419-1	Non-compliance with laws and regulations in the social and economic area	Not applicable	