NTT Group

Sustainability Report

2018

NTT Group

Contents

		Relevant GRI Standards	Relevant SDGs
001	**Contents and Editorial Policy**	102-3, 50, 51, 52, 53	—
006	**Top Message**	102-14, 15	—
012	**NTT Group in Brief**		
	Basic Information	102-1, 2, 4, 5, 6, 7, 8, 10, 13, 45/201-1	—
	Evaluations by Outside Parties	—	—
016	**NTT Group CSR**		
	NTT Group CSR Charter	102-16	—
	NTT Group's Material Issues	102-46, 47	
	CSR Management	102-18, 19, 20, 26, 29, 30, 31, 32	—
	Stakeholder Engagement	102-21, 33, 40, 42, 43, 44	
032	**Enrich Social Communication**		
	Contribute to Society through ICT	103-1, 2/203-1, 2	
	Improve Access to ICT	103-1, 2/203-1, 2	
	Pursue Customer Satisfaction	102-33/103-1, 2	
	Generate Innovation	103-1, 2	

Relevant SDGs

Note: Sustainable Development Goals (SDGs): The goals were incorporated into the 2030 Agenda for Sustainable Development adopted by the leaders of over 150 UN member nations at the UN Sustainable Development Summit in September 2015, and came into effect in January 2016. They comprise 17 goals and 169 targets based on the Millennium Development Goals (MDGs). To realize sustainable development, each member country should aim to achieve various goals by 2030, including eradicating poverty and hunger, responding to energy and climate issues, and pursuing a peaceful society.

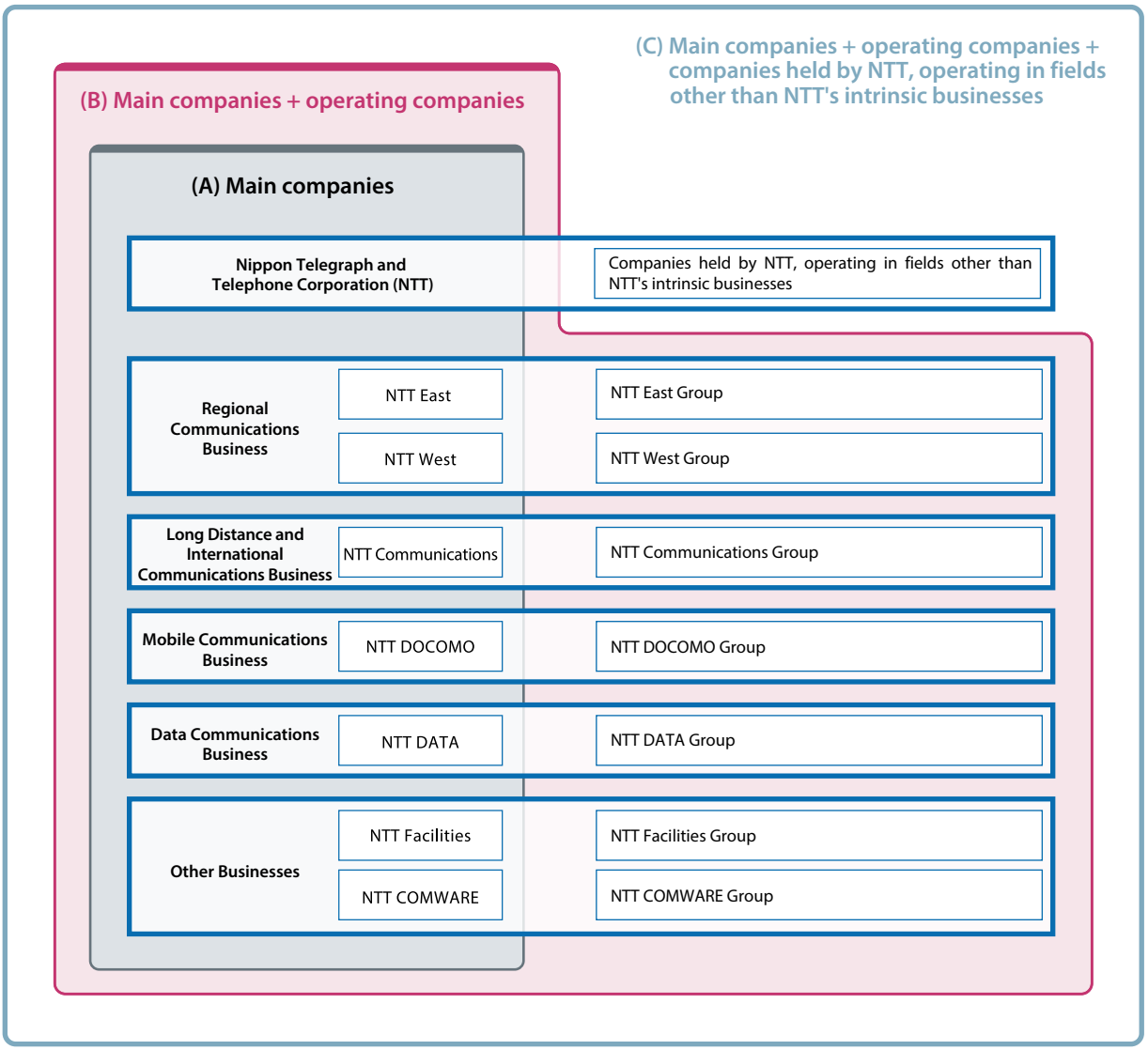
		Relevant GRI Standards	Relevant SDGs
052	**Protect the Global Environment**		
	Our Thinking Concerning the Environment	102-16, 18, 29/103-1, 2/ 302-4/305-5/306-2	
	Environmental Management	102-12, 18/307-1/308-1	
	Environmental Impacts Overview	301-1, 2, 3/302-1, 2/303-1/ 305-1, 2, 3, 5/306-1, 2	
	Realizing a Low Carbon Future	103-1, 2/302-1, 2, 4, 5/ 305-1, 2, 3, 5, 6	
	Implementing Closed Loop Recycling	103-1, 2/301-1, 2, 3/ 303-1, 2, 3/306-1, 2, 3, 4, 5	
	Planning a Future of Natural Harmony	103-1, 2/304-1, 2, 3, 4	
084	**Ensure Reliable Communications**		
	Reinforcing Information Security	102-12, 18/103-1, 2/203-2/418-1	
	Personal Information Protection	103-1, 2/418-1	
	Ensuring Stable and Reliable Communications Services	103-1, 2/203-1/417-1	
	Safety-Related Legal Compliance and Telecommunications User Etiquette	413-1/417-1	
099	**Unite the Energies of Team NTT**		
	Promoting Diversity	102-8/103-1, 2/401-1, 2/ 404-2/405-1	
	Respect for Human Rights	102-12, 16, 33/103-1, 2/406-1/407-1/ 408-1/409-1/411-1/412-1, 2	
	Reinforcing Value Chain Management	102-9/103-1, 2/308-1, 2/407-1/ 408-1/409-1/412-3/414-1, 2	
	Promoting Safety, Health and Welfare	103-1, 2/403-2, 3, 4	
	Creating Attractive Workplaces	102-33, 41/103-1, 2/201-1/ 401-2, 3/402-1/404-3/407-1	
	Human Resource Development	404-1, 2	
	Promoting a United Group Effort on Social Contribution Activities	103-1, 2/201-1/413-1	
132	**Governance**		
	Corporate Governance	102-18, 19, 20, 22, 23, 24, 25, 26, 27, 33, 35, 36, 37/405-1	—
	Compliance	102-16, 17, 33, 34/205-1, 2, 3/ 206-1/412-3/414-1, 2/415-1	—
	Risk Management	102-11, 15, 18, 29, 30, 31	—
	Tax Policy	—	—
	Intellectual Property Management	—	—
159	**Independent Assurance Statement**	102-56	
160	**Comparative Table with GRI Standards**	102-55	—

Editorial Policy

As in 2017, the composition of NTT Group Sustainability Report 2018 closely corresponds with items in the NTT Group CSR Priority Activities to enhance disclosure of information on items with higher priority for stakeholders, including investors who value ESG, and NTT Group. 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 our business strategies and operations, please refer to Annual Report 2018. 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.

Scope of Organization



(A) Main companies

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

(B) 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)

(C) Main companies + operating companies + companies held by NTT, operating in fields other than NTT's intrinsic businesses

(Companies held by NTT, operating in fields other than NTT's intrinsic businesses)

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

(D) Domestic Group companies: 242 companies

(E) Domestic and overseas Group companies: 922 companies

Reporting Period

April 1, 2017 to March 31, 2018 (fiscal 2018)

- Certain activities implemented after March 31, 2018 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 2018, 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

Related Information

- **CSR website (Japanese and English)**
  To provide the latest information on NTT Group CSR activities, we update our CSR website regularly and in a timely fashion. The latest information can be viewed in the Topics section on the site's homepage.

  WEB http://www.ntt.co.jp/csr_e/index.html

- **Annual Report (Japanese and English)**
  From fiscal 2015, 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 and English)**
- **Shareholders' Newsletter "NTTis" (Japanese and English)**
- **Corporate Governance Report (Japanese and English)**

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.
- Breakdown 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 2018 results of "Ensure Reliable Communications" and "Unite the Energies of Team NTT," and for the performance indicators for "Protect the Global Environment," from the NTT Group CSR Priority Activities appearing on pages 21 and 22.

Inquiries

CSR Promotion Office, General Affairs Department
Nippon Telegraph and Telephone Corporation
Otemachi First Square East Tower, 5-1, Otemachi 1-chome, Chiyoda-ku, Tokyo 100-8116, Japan
Tel: 81-3-6838-5560 Fax: 0120-145579
Inquiry Form

WEB https://www.ntt.co.jp/csr_e/contact/index.html

Top Message

NTT Group is accelerating its self-transformation to become "Your Value Partner" based on its Shared Values of "Connect," "Trust," and "Integrity."

Jun Sawada
President and Chief Executive Officer,
Representative Member of the Board

Leading by Example, Performance Tracking, and Speed

I joined Nippon Telegraph and Telephone Public Corporation roughly 40 years ago. In the years that followed, I was largely involved in research and development, taking part in designing the structures of telephone poles and manholes. Later, I became the manager of a telephone exchange where I was responsible for performing facility maintenance and interacting with customers on the front lines of operations. The majority of the other employees at that exchange had been situated longer than I was. This experience made me painfully aware of the difficultly of leading an organization. In this position, I tried to always lead by example. At the same time, I took steps to track the performance of our organization from various perspectives. Whether it be the number of telephone poles installed, the length of cables laid, or the number of customers at which installations were performed, I would track these metrics and compare them with figures from other organizations. I thereby aimed to foster employee ambition and drive transformation.

In 2000, I transferred to NTT Communications Corporation. During the period when I served as executive manager of the Corporate Strategy Planning Department, I was involved in over 10 M&As, many of which were for overseas companies. It was in 2014 when I became a Representative Member of the Board of the Company. Later, I held a concurrent position as the president of NTT Security Corporation, where I spearheaded the integration of the Group's cybersecurity companies. Over the years, I have held many concurrent titles at various companies. Faced with limited time to fulfill my duties in concurrent positions, I naturally came to emphasize speed in my work. Today, I consider management as adhering to the formula of mass (m) × acceleration (a) = force (F). As illustrated by this formula, swift decision-making and action can heighten organizational capacities. Though my position as president of the holding company has taken me away from the front lines, this has not changed the importance I place on frontline operations. In this position, I will track performance based on quantitative results while fostering work habits that instill a fundamental element of speed into the organization as I lead the transformation of NTT Group by example.

Mission of Acting Simultaneously as a Public Utility and a Private Company

Some may say that NTT Group, with its long history and massive scale, cannot change. While there is some truth to this statement, it is not completely accurate.

The privatization of Nippon Telegraph and Telephone Public Corporation in 1985 led to the formation of NIPPON TELEGRAPH AND TELEPHONE CORPORATION and NTT Group. At this time, the Group joined the ranks of many organizations requiring a unique approach toward management to act simultaneously as a public utility and as a private company, two hats that are said to be difficult to wear at once. Important tasks needing to be addressed include the ongoing provision of reliable communications infrastructure, the installation of communications infrastructure in underpopulated areas and on isolated islands, and effective responses to natural disasters. If there is anyone in Japan that is going to address these tasks, it should be NTT Group. In fact, we see this as our mission. This pride in our role as a public utility and our commitment to fulfilling this role are aspects of NTT that cannot change. This is the reason why I see the very act of management as being a CSR activity for NTT Group. At the same time, so long as we are a private company, we will also be obligated to continue generating profits. Fulfilling this obligation is also critical to our ability to function as a public utility. This obligation necessitates ongoing change.

In truth, the business structure of NTT Group has changed greatly over the years. At the time of our privatization in 1985, voice related revenues accounted for more than 80% of our operating revenues. In the fiscal year ended March 31, 2018, however, less than 20% of operating revenues came from voice related revenues. The main sources of our revenue today are IP / packet communications services and system integration services, which generated more than 60% of operating revenues in the fiscal year under review. In addition, overseas sales were 10 times higher in the fiscal year under review than in the fiscal year ended March 31, 2009. This change was a result of our focus on expanding overseas sales through M&As and organic growth that followed from our positioning global cloud services as the cornerstone of our business in the "Towards the Next Stage" Medium-Term Management Strategy, announced in November 2012. In February 2015, we launched the Hikari Collaboration Model, the world's first model for full-scale fiber-access services offered through a wholesale framework. These services represented a massive change as they were indicative of a shift in our business model, from supplying network services directly to customers to supporting customers in creating new businesses as an enabler. Under the "Towards the Next Stage 2.0" Medium-Term Management Strategy, which was launched in May 2015, we have been expanding our collaborative efforts with various partners as we evolve the Hikari Collaboration Model into a B2B2X model.

We have also been faithful in fulfilling our obligations to our shareholders. Since 1999, we have conducted more than ¥3 trillion in share buybacks on an aggregate basis. In addition, we are planning to raise dividend payments for the eighth consecutive year, and the targeted per share dividend payment is 6.8 times higher than in the fiscal year ended March 31, 2004.

Society expects NTT Group to support social infrastructure and to help resolve social issues. It was the process of self-transformation with the goal of living up to these expectations—during which we have always been mindful of the future social changes predicted from a long-term perspective—that has enabled us to continue evolving up until today. In other words, it is our aforementioned management approach of acting simultaneously as a public utility and a private company that has driven ongoing improvements in our corporate value thus far and that will continue to do so in the future.

Vision of Being "Your Value Partner"

I would next like to talk about the social changes we project in the future and the expectations that society will likely place on NTT Group in light of such changes. In recent years, it seems that we have entered a new stage of technological progress with someone predicting end

of Moore's law. There is a rising sense of anticipation for the resolution of social challenges through the advance of so-called digital transformations, which entail utilizing revolutionary digital technologies, such as those pertaining to the Internet of Things, big data, and artificial intelligence. The information communications sector is also expected to undergo massive changes. For example, NTT DOCOMO plans to begin providing commercial services based on fifth-generation (5G) communication standards in Japan in 2020. In addition, the year of 2020 will see major events, most notably the Tokyo 2020 Olympic and Paralympic Games.

I suspect that these trends will result in NTT Group coming to be expected to address a diverse range of social issues by creating new businesses and industries through collaboration with an even broader spectrum of partners. I have no doubt in the ability of NTT Group to live up to these expectations due to its polyhedron, which is a product of its various connections with society and people in an exceptionally wide assortment of business fields. To accomplish this goal, we are working toward our vision of becoming "Your Value Partner" by offering value to and being chosen by customers, shareholders, local communities, employees, and all of our other stakeholders.

Upon assuming the position of president, I sought to explain "Your Value Partner," our vision for the future, in an easy-to-understand manner to our approximately 300,000 employees working in about 90 countries and regions around the world. We defined "Service Expertise," "Technical Expertise," and "Intelligence" as the qualities we look for in our employees, who will be integral to the realization of this vision. Meanwhile, our Shared Values were defined as "Connect," "Trust," and "Integrity," concepts that represent the very DNA of NTT.

At NTT, we hope to contribute to the realization of a smart society characterized by various connections that give rise to such innovations as connected cars, connected value chains, and connected industries. Connecting diverse business entities requires that we win trust, and trust must be earned by always maintaining a sense of integrity. These three Shared Values contribute to and enhance one another. Our Shared Values are also a factor differentiating NTT Group from its competitors that informs how we position ourselves and the direction of our management strategies.

Support Our Customers' Digital Transformations

The position of NTT Group in the domestic market could be described as "neutral." Our role is to connect various companies from a neutral standpoint, not bound by any particular capital relationship. The foundation for these efforts is formed by the trust we have cultivated over our years of operation. It is from this distinctive position that NTT Group is developing its B2B2X model and supporting its customer digital transformations. We are leveraging the advantages of this position of neutrality to engage in an increasingly wide range of collaborative initiatives. For example, we are working together with partners in fields such as sports, transportation, logistics, and manufacturing; taking part in numerous verification tests; and advancing the 2020 × Regional Revitalization Project, which is aimed at providing solutions to various challenges that local governments and businesses face.

NTT Group also aims to develop new services that respond to various needs in light of changes such as the emergence of cognitive networks, which are taking advantage of the platform provided by sophisticated 5G connections, as well as the trend toward software-based telecommunications businesses. Meanwhile, our policy for serving individual customers is to provide personalized services that support changes in their lifestyles.

Overseas, we must compete with powerful rivals, such as consulting firms, in all areas of operations. NTT Group is unique in its ability to comprehensively provide services spanning from global IP backbones and data centers that are of world-class scale and quality to consulting, application, and network integration services. Leveraging this strength, we aim to function as an enabler, as we do in Japan, to support our overseas customers' digital transformations.

The joint smart city verification test we are carrying out in Las Vegas is a prime example of this approach. The solution being tested is designed to contribute to public safety by installing sensors in urban areas and event sites that monitor crowds and transportation conditions and detect emergency situations, which makes it possible to predict and analyze incidents that are highly likely to be of a criminal nature.

Self-Transformation to Continue Being Chosen by Customers

If NTT Group wants to continue to be evaluated to have value and to be chosen by customers, it will need to keep transforming. For this reason, improving the profitability of global businesses has been positioned as a matter of top importance. We will pursue this goal by boosting competitiveness through improvements to the value of our products and services.

Overseas, we are seeking out those processes from among the unique product development, sales, and other business processes of specific companies that can be replaced with standardized processes. By integrating these processes, we will endeavor to provide high-value-added services and boost cost efficiency. The combination of the cloud capabilities of NTT Communications and Dimension Data completed in March 2018 is one facet of these efforts. Other initiatives include the establishment of NTT Venture Capital, L.P., through which we will step up investment in technological fields expected to see growth in the global market, and the intensification of our R&D activities in the global market.

In Japan, we must accept the fact that the growth of our traditional telecommunications business with be peaking in the future. At the same time, digital technologies are transforming existing industries and social structures are changing domestically due to trends such as the aging population, declining birth rate, and shrinking workforce. To address these changes, we are utilizing the various data gained through NTT Group's business activities to undertake our own digital transformation by boosting efficiency via work process monitoring and accelerating the development of new high-value-added services. To facilitate this undertaking, I equipped chief digital officers (CDOs) at major operating companies in August 2018. Going forward, the CDO of each company will be responsible for formulating and implementing digital strategies for addressing various operating environment changes.

Diversity and Inclusion That Are Critical to Global Management

I would now like to discuss aspects of global businesses that I place particular emphasis on.

I am convinced that diversity and inclusion are critical to global management. It was when I held a concurrent position as president of NTT Security that I truly developed a fundamental understanding of diversity and inclusion.

NTT Security is an intermediate holding company that oversees regional companies in the United States, Europe, Asia, and Japan that were established by acquiring five companies and extracting only the wholesale portion of the security operations. As such, its organization staffs 1,500 employees, more than 90% of whom are non-Japanese individuals gathered from 15 different countries. Although these employees recognized the importance of diversity, this acceptance was limited to words. Very few people were actually accepting toward the idea of people from other countries. For example, the belief that Japanese quality can lead to success in the global market—which is held so firmly by Japanese people—was just seen as overcompensating by those from other countries and regions. It is indeed true that our employees all had differing religions, cultures, and convictions, each believing that the ideas of their country were correct. I thus came to realize that treating "inclusion" as having the same meaning as "globalism" and imposing a specific set of values on these employees was the wrong approach.

The differences between regions were even more striking when viewed in terms of market trends. Around 70% to 80% of the basic designs and parts used in automobiles are standard across the globe, with the remaining 20% to 30% being adjusted to match specific market requirements, such as those pertaining to exhaust gas regulations. When it comes to IT services, however, there is almost nothing that is standardized. Rather, I see a need to make fine-tuned adjustments to

services based on the level of social development of a specific country or region, its systems, and its market and economic structures. This view led me to realize that the most fundamental aspect of inclusion is recognizing that there is no such thing as true globalism. We should therefore look to shape 80% of our operations based on local characteristics while basing the remainder on global conditions. At NTT Security, this recognition was reflected in the ratio of local to global authority. Previously, this ratio was 6:4, but this was changed to 8:2, greatly increasing the amount of authority delegated to local employees and contributing to smooth management. We also acknowledged that our Shared Values serve as the common point of understanding, the inclusive commitment, needed for functional teamwork.

In fall 2018, we will establish a global holding company (intermediate holding company) under NTT, to which control of NTT Communications, Dimension Data, NTT DATA, NTT Security, and NTT Innovation Institute will be transferred. An important aspect of management at the global holding company will be its participatory approach toward business operations in which the presidents of the operating companies it oversees, including non-Japanese managers, serve concurrently as directors of the global holding company. We will also delegate a great deal of authority and responsibility to the global holding company in order to allow managers who are well acquainted with the global market to carry out management based on their own ideas. This situation will result in managers who were previously only responsible for the interests of their own company being charged with responsibility for pursuing overall optimization as directors of the global holding company. I anticipate that this newfound responsibility will encourage more intimate coordination between Group companies.

We are also examining the possibility of integrating the operations of NTT Communications, Dimension Data, NTT Security, and NTT Innovation Institute into domestic and overseas units, with the tentative schedule calling for this integration to occur in summer 2019. NTT DATA will retain its listed status and its own brand, but will be expected to step up coordination with other Group companies.

Contribution to a Better Society with the Power of NTT Group

NTT Group has an asset portfolio worth over ¥20 trillion, which includes more than 7,300 telephone exchanges and communications networks spread across Japan. I see potential for us to generate greater value by further leveraging these assets. I also want us to create new value and contribute to society by utilizing our many talented people and our R&D capabilities.

One facet of our efforts to make such contributions was the establishment of TNcross Corp., a joint venture with Tokyo Electric Power Company Holdings, Inc. This company installs high-voltage, direct current systems at communications buildings and utilizes storage batteries to create new, high-efficiency energy services.

NTT Group consumes around 1% of all the electricity used in Japan. The sharp increase in data traffic seen in recent years has made improving energy efficiency even more important. For this reason, we have set the goals of doubling the energy efficiency of our telecommunications business and reducing power consumption by 10% leading up to 2025. NTT Group is also transitioning to electric vehicles (EVs) for its corporate fleet, and we have defined the goal of converting 50% of our fleet of general domestic corporate vehicles to EVs. Furthermore, the Group is in the process of preparing to join the EP100 and EV100 international initiatives pertaining to energy productivity and EVs, respectively.

However, we will not limit ourselves to environmental initiatives. Rather, we will incorporate social and governance perspectives to practice ESG management with the aim of contributing to the accomplishment of the United Nations Sustainable Development Goals.

New Medium-Term Management Strategies

In the fiscal year ended March 31, 2018, NTT Group broke records for operating revenues, operating income, and net income. In addition, we were able to achieve the medium-term financial targets of "Towards the Next Stage 2.0" with regard to earnings per share (EPS) growth, streamlining capital investment in our domestic network business, and cost reductions in fixed-line and mobile access networks. The only financial targets yet to be accomplished are those for overseas sales and operating income, but we are advancing initiatives with the goal of accomplishing these targets as quickly as possible.

The new medium-term management strategies is scheduled to be announced in November 2018. In this strategy, we plan to define targets and measures from short-, medium-, and long-term perspectives of three, five, and seven years.

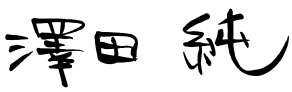
Fundamental Shift in Thinking to Drive New Value Creation

The pace of technological progress in recent years has been astounding. Unfortunately, in the midst of this progress, NTT Group has failed to create any truly world-changing technologies.

We have created telephony services that allow anyone to personally connect with other people. However, the current landscape is one in which communication is taking a community-like form, with the number of people one seeks to connect with usually being less than 100. This trend is most exemplified by social media services. Despite this landscape, our design philosophies are all rooted in telephony. There is much that we need to do in order to raise our value. It is therefore crucial that we do not allow ourselves to become complacent with our existing businesses. Rather, we must undertake a fundamental shift in thinking to drive the creation of new value. I spoke of how NTT has a polyhedron. I believe that we need to utilize this characteristic to exert an outward propulsion and step into new fields that lie outside of the domains of our existing businesses.

NTT Group seeks to undergo self-transformation to become "Your Value Partner." In advancing this transformation, I will tackle all challenges placed before us as we seek to continuously raise the corporate value of NTT Group through contributions to the Japanese and global societies.

September 2018



Jun Sawada
President and Chief Executive Officer,
Representative Member of the Board

Basic Information

(As of March 31, 2018)

NTT Group

Total Assets:	¥21,675.8 billion
Consolidated Operating Revenue:	¥11,799.6 billion
Consolidated Operating Income:	¥1,642.8 billion
Number of Employees:	282,533
Consolidated Subsidiaries:	922

NTT

Nippon Telegraph and Telephone Corporation (Holding Company)

Total Assets:	¥6,710.4 billion
Operating Revenues:	¥663.1 billion
Operating Income:	¥528.1 billion
Number of Employees:	2,644

Main Businesses: **For NTT Group as a whole, formulation of management strategies and promotion of basic research**

	Regional Communications Business	Long Distance and International Communications Business	Mobile Communications Business	Data Communications Business	Other Businesses
	Regional telecommunications operations in Japan and related businesses	Long-distance telecommunications operations in Japan, international telecommunications operations, solutions business, related businesses, etc.	Mobile phone business in Japan and overseas, related businesses, etc.	Systems integration, network system services, etc., in Japan and overseas	Real estate, finance, construction/ electric power, system development, advanced technology development, etc.
Operating Revenues	¥ 3,232.9 billion	¥ 2,218.9 billion	¥ 4,769.4 billion	¥ 2,043.1 billion	¥ 1,236.6 billion
Operating Income	¥ 354.3 billion	¥ 93.6 billion	¥ 982.1 billion	¥ 127.8 billion	¥ 78.6 billion
Capital Investment	¥ 549.6 billion	¥ 232.5 billion	¥ 576.4 billion	¥ 194.1 billion	¥ 122.1 billion
R&D Expenses*	¥ 81.1 billion	¥ 16.1 billion	¥ 91.8 billion	¥ 14.6 billion	¥ 105.3 billion
Number of Employees	67,600	45,350	27,450	118,000	24,150
Consolidated Subsidiaries	45	373	109	302	93

* Intersegment transactions: ¥102.0 billion

Employment

*1 As of March 31, 2018, estimated number of employees for 922 consolidated companies in NTT Group
*2 As of March 31, 2018, total number of employees of NTT, directly affiliated companies in Japan, and their affiliated companies in Japan (total of 38 companies)
*3 Section manager level or higher

Status of Employees

NTT Group

Name of segment	Number of employees*					
	Fiscal 2016		Fiscal 2017		Fiscal 2018	
Regional Communications Business	66,214	(64,745)	68,243	(58,419)	67,592	(50,393)
Long Distance and International Communications Business	43,758	(10,185)	43,842	(8,976)	45,320	(8,122)
Mobile Communications Business	26,129	(11,511)	26,734	(10,447)	27,464	(9,515)
Data Communications Business	80,526	(3,188)	111,657	(2,911)	118,006	(2,948)
Other Businesses	24,821	(10,226)	24,368	(9,993)	24,151	(9,503)
Total	**241,448**	**(99,855)**	**274,844**	**(90,746)**	**282,533**	**(80,481)**

* Numbers on the left in each fiscal year indicate full-time staff as of the final day of each consolidated fiscal year, which ends on March 31. Numbers in parentheses indicate the average number of temporary staff.

NTT

Number of employees*	Average age of employees	Average length of service (years)	Average annual salary (yen)
2,644 (54)	41.3	16.8	9,054,421

* Numbers do not include temporary staff. The annual average number of temporary staff is shown in parentheses.

List of Memberships

(As of September 30, 2018)

- Keidanren (Japan Business Federation, general incorporated association; vice chair)
- Telecommunications Carriers Association (incorporated association; director)
- Association of Radio Industries and Businesses (general incorporated association; director)
- Telecommunication Technology Committee (incorporated association; vice chairman)
- Tokyo Employers' Association (chairman)
- ITU Association of Japan (general incorporated association; council member)
- ICT Ecology Guideline Council

Major M&A During the Past Year

- **vCentric Technologies (India)**

October 2017

itelligence AG, a German subsidiary of NTT Data, made vCentric Technologies a subsidiary. vCentric Technologies is a company with strengths in S/4 HANA-related consulting and system architecting.

- **Goldfish ICT (Netherlands)**

June 2017

itelligence AG, a German subsidiary of NTT Data, made Goldfish ICT a subsidiary. Goldfish ICT is a company with strengths in system architecting and SAP consulting in the area of life sciences, agriculture, and foods, including agribusiness.

- **PT. Abyor International (Indonesia)**

May 2017

NTT DATA acquired PT. Abyor International, which engages in primarily SAP consulting, and made it a subsidiary.

Evaluations by Outside Parties

Dow Jones Sustainability Index (DJSI)

The DJSI is an index jointly developed by Dow Jones of the U.S. and RobecoSAM of Switzerland to evaluate the sustainability of companies from the three aspects of economy, environment and society. NTT has been selected for four consecutive years, as of September 2017, to the DJSI Asia Pacific, which covers companies in the Asia-Pacific region.

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

FTSE4Good Index Series

The FTSE4Good Index is a globally recognized ESG index created by FTSE Russell (U.K.), a wholly owned subsidiary of the London Stock Exchange Group. NTT was selected to the index as of August 2018 for the third consecutive year.

FTSE4Good

FTSE Blossom Japan Index

The FTSE Blossom Japan Index created by FTSE Russell tracks the performance of Japanese companies with excellent environmental, social and governance (ESG) practices. NTT was included in the index for the second consecutive year in June 2018.

FTSE Blossom Japan

MSCI Japan ESG Select Leaders

An index composed of companies that excel in ESG evaluation, selected from the MSCI Japan IMI Top 500 index. NTT was included in the MSCI Japan ESG Select Leaders in June 2018.

MSCI 2018 Constituent MSCI Japan ESG Select Leaders Index

MS-SRI

MS-SRI is a socially responsible investment stock index of 150 companies selected from about 4,000 listed Japanese companies by Morningstar based on their social quality. NTT has been selected for five consecutive years as of May 2018.

MS-SRI

Receipt of the Internet IR Award

Every year since 2012, NTT has received the Internet IR Award given by Daiwa Investor Relations Co. Ltd. This award recognizes companies that excel in the effective use of IR sites for information disclosure and communication activities

Internet IR Excellence Award 2017 Daiwa Investor Relations

Environmental Communication Grand Awards

NTT received an award for excellence (Chief Juror Award) in the environmental reporting category at the 21st Environmental Communication Awards, which are jointly sponsored by Japan's Ministry of the Environment and the Global Environmental Forum. NTT was recognized for its NTT Group Sustainability Report 2017.

Toyo Keizai CSR Ranking

NTT ranked 17th in the Fiscal 2017 Toyo Keizai CSR Ranking, which rates companies comprehensively based on their financial performance and CSR aspects.

Kurumin Certification (3 stars)

NTT has received Kurumin certification (3 stars). Based on the Law for Measures to Support the Development of the Next Generation, this certification from the Ministry of Health, Labour and Welfare recognizes companies that have formulated a Plan of Action for General Employers, have achieved targets set in the plan, and satisfy certain standards.

Recognition with PRIDE INDEX Gold status

work with Pride, a volunteer organization, has formulated the PRIDE Index as Japan's first evaluation of initiatives for sexual minorities (LGBT) in the workplace. NTT was recognized with Gold status, which recognizes outstanding companies, for the second consecutive year.

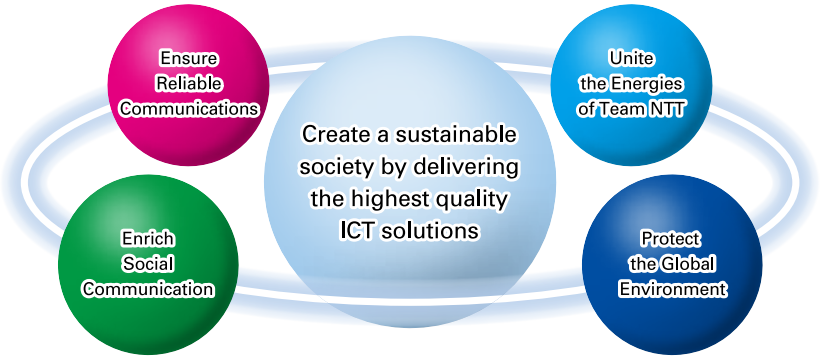
Recognition among the Top Hundred Telework Pioneers

Since 2015, the Ministry of Internal Affairs and Communications has recognized companies and organizations that introduce and utilize telework with the designation Telework Pioneers. NTT has been recognized among the Top Hundred Telework Pioneers, a selection of these pioneers that have been publicized as companies with significant track records in telework.

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.

In May 2016, we reviewed NTT Group's CSR Priority Activities, which represent the material issues pursued by Group companies, in a united effort to promote CSR and revised the NTT Group CSR Charter.



NTT Group CSR Charter

NTT Group delivers the highest quality ICT solutions as a "Value Partner" for customers and contributes to the creation of a prosperous and sustainable society with vibrant communication.

Our CSR Goals

Enrich Social Communication

Our innovative ICT expertise enhances societal connectivity and convenience while providing a communications environment for addressing local and international challenges to sustainable community development.

Protect the Global Environment

We reduce environmental impact throughout our business, apply ICT to alleviate the environmental load of society, and actively engage in resolving worldwide environmental issues.

Ensure Reliable Communications

We address social and ethical concerns as an infrastructure enterprise that supports society while protecting livelihoods by securing online information in a robust communications environment that can withstand natural disasters and cyber-attacks.

Unite the Energies of Team NTT

Team NTT and its partners maintain the highest ethical standards and respect for human rights in business; value diversity and personal growth in the workplace; and contribute to building vibrant local communities.

NTT Group CSR Charter WEB http://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 hope to 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 through collaboration with partners on technologies and knowledge.

NTT Group's **Material Issues**

In revising our CSR Charter and reviewing the CSR Priority Activities, we took the following steps based on the principles and processes of 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.

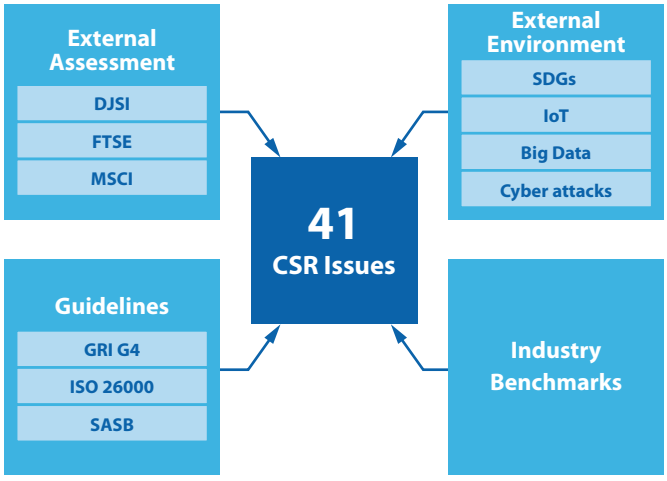
STEP 3 Confirm Validity

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

Materiality

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.



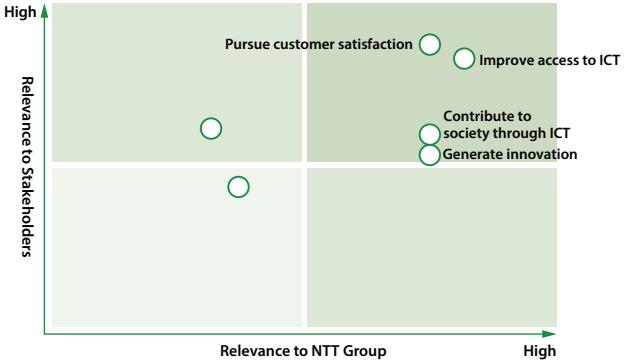
STEP2 Assign Priorities

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.

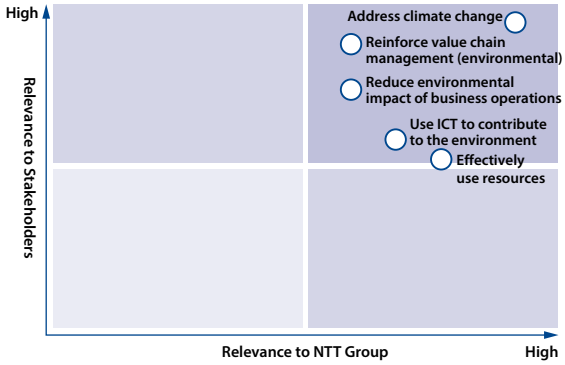
In assessing priorities, we sought to reflect the expectations of a broad range of stakeholders by also taking into account the results of the NTT Group employee satisfaction survey and feedback from customers.

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

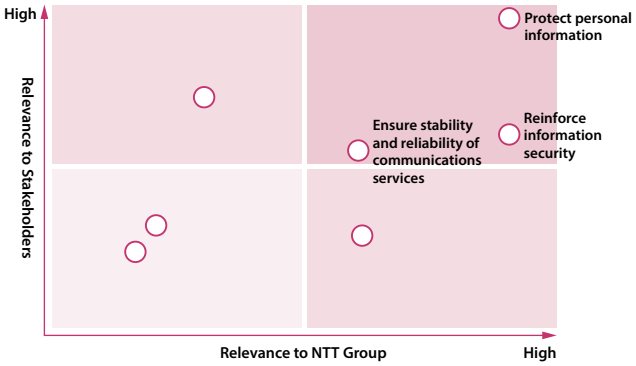
Enrich Social Communication



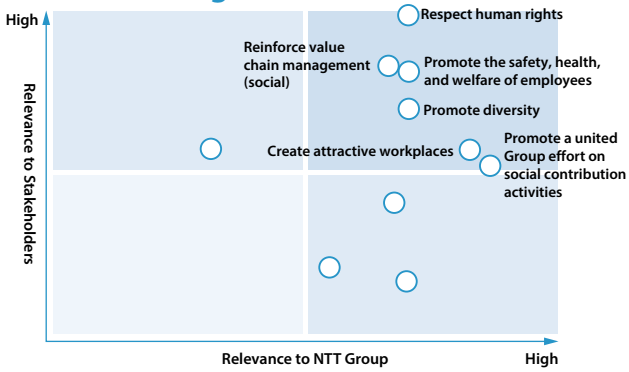
Protect the Global Environment



Ensure Reliable Communications



Unite the Energies of Team NTT



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

STEP3 Confirm Validity — Validation and Determination of New CSR Priority Activities

The identified CSR Priority Activities were examined by the Group CSR Committee attended by the CSR Committee Chairpersons of eight 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 18 items were determined as new CSR Priority Activities.

Enrich Social Communication

CSR Priority Activities

- **Contribute to society through ICT**
- **Improve access to ICT**
- **Pursue customer satisfaction**
- **Generate innovation**

Protect the Global Environment

CSR Priority Activities

- **Use ICT to contribute to the environment**
- **Reinforce value chain management (environmental)**
- **Address climate change**
- **Reduce environmental impact of business operations**
- **Effectively use resources**

Ensure Reliable Communications

CSR Priority Activities

- **Protect personal information**
- **Reinforce information security**
- **Ensure stability and reliability of communications services**

Unite the Energies of Team NTT

CSR Priority Activities

- **Promote diversity**
- **Respect human rights**
- **Reinforce value chain management (social)**
- **Promote the safety, health, and welfare of employees**
- **Create attractive workplaces**
- **Promote a united Group effort on social contribution activities**

Goals and Achievements 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.

While evaluating efforts using the PDCA cycle based on these KPI, we also make changes to the indicators pursuant to changes taking place in society or within the Group. In fiscal 2018, "Employment rate of people with disabilities" and "Implementation rate of specified health guidance" were added as KPI.

Enrich Social Communication

CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators (KPIs)	FY2016 Results	FY2017 Results	FY2018 Results	Relevant Pages
Contribute to society through ICT	Accelerate the B2B2X Business Model by taking opportunities to use "2020" and "Regional Vitalization"	Acceleration of the B2B2X Business Model	—	—	—	P033
Improve access to ICT	Enhance the system to provide diverse ICT services centered around the "Global Cloud Service" for the entire world Provide ICT services available for a broad range of customers, including the elderly and persons with disabilities	Sales of global services: 22.0 billion dollars (by FY2018)	15.6 billion US dollars	16.9 billion US dollars	19.51 billion US dollars	P040
		Global footprint: Expand	196 countries and regions	196 countries and regions	196 countries and regions	
		Percentage of the population covered by LTE: Expand	99%	99%	99%	
		Number of UD-capable products and services provided: Expand	12	11	14	
Pursue customer satisfaction	Provide high value-added products and services and fine-tuned support	Customer satisfaction survey: Better than in the previous fiscal year	First	First	Second	P043
		Number of improvements made based on suggestions from customers: More than in the previous fiscal year	558 improvements	446 improvements	496 improvements	
		Response rate and number of response hours at our call centers: Better than in the previous fiscal year	Response rate: approx. 73.3%	Response rate: approx. 80.9%	Response rate: approx. 88.6%	
		Improve facility utilization efficiency: Reduce cost by at least 200 billion yen (by FY2018)	Approx. 100 billion yen reduction	Approx. 136.4 billion yen reduction	Approx. 204.9 billion yen reduction	
		Establish highly efficient business operations: Reduce cost by at least 800 billion yen (by FY2018)	Approx. 414 billion yen reduction	Approx. 654 billion yen reduction	Approx. 856 billion yen reduction	
Generate innovation	In order to maintain our research and development as an important growth driver of NTT Group for the future, promote advanced R&D that will lead the world's information communications technologies	Number of patent applications	Approx. 2,250	Approx. 2,330	Approx. 2,220	P047
		Number of academic papers published outside the company	Approx. 1,720	Approx. 1,700	Approx. 1,670	
		Person-days of participation in international standardization meetings	Total of 2,780 person-days	Total of 2,920 person-days	Total of 2,890 person-days	

Protect the Global Environment

CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators (KPIs)	FY2016 Results	FY2017 Results	FY2018 Results	Relevant Pages
Use ICT to contribute to the environment **Reinforce value chain management** **Address climate change**	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 (by FY2030)	Data compiled from FY2017	8.9 times	10.1 times	P067
Reduce the environmental impact of business operations	Improve power efficiency to reduce the environmental impact of business operations	Power efficiency of communications services: At least 10 times higher than in FY2013 (by FY2030)		2.7 times	3.6 times	P068
Effectively use resources	Control the final disposal ratio of waste and work toward the effective use of resources	Final disposal ratio of waste: Zero emissions (under 1%) (by FY2030)		1.03%	1.18%	P077

Ensure Reliable Communication

CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators (KPIs)	FY2016 Results	FY2017 Results	FY2018 Results	Relevant Pages
Reinforce information security	Train security experts	Number of security experts: 10,000 (by FY2020)	20,000	31,000	39,000	P085
Protect personal information	Prevent leaks of personal information	Number of incidents of personal information leaks: 0	9	4	2	P092
Ensure stability and reliability of communications services	Provide stable communications services free of major communications problems	Stable service provision rate: 99.99%	100%	99.99%	100%	P094
		Number of major accidents: 0	0	2	0	

Unite the Energies of Team NTT

CSR Priority Activities	Medium-term Targets	CSR Quantitative Indicators (KPIs)	FY2016 Results	FY2017 Results	FY2018 Results	Relevant Pages
Promote diversity	Aggressively promote the active participation of women	Ratio of female managers: 6.0% (by FY2020)	4.0%	4.6%	5.10%	P101
	Expand employment of people with disabilities	Employment rate of people with disabilities*: 2.2% (50 or more employees) (newly established in fiscal 2018)	NTT: 2.3%	NTT: 2.4%	NTT: 2.6%	P103
			Major NTT Group Companies in Japan: 2.2%	Major NTT Group Companies in Japan: 2.3%	Major NTT Group Companies in Japan: 2.5%	
			All Group companies in Japan: 2.0%	All Group companies in Japan: 2.1%	All Group companies in Japan: 2.3%	
Respect 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	15	17	27	P110
		Percentage of participation in training concerning human rights: More than in the previous fiscal year	92.0%	92.9%	93.6%	P109
Reinforce value chain management	Appropriate management of environmental and social risks, including value chains	Number of confirmed high-risk suppliers: 0	0	0	0	P113
Promote the Safety, Health, and Welfare of Employees	Enhance safety measures and the safety mindset of employees in order to prevent accidents causing injury or death and industrial accidents	Number of accidents causing injury or death during construction work: 0	10	18	9	P116
		Number of industrial accidents: 0	2	4	3	
	Conduct specified health guidance and maintain employees' health	Implementation rate of specified health guidance: 60% (newly established in fiscal 2018)	18.9%	19.1%	22.9%	P117
Create attractive workplaces	Provide workplaces where employees can work with good spirits	Employee satisfaction: Better than in the previous fiscal year	3.88 (out of 5)	3.83 (out of 5)	3.79 (out of 5)	P121
Promote a united Group effort on social contribution activities	Employees actively participate in volunteer activities	Percentage of employees participating in volunteer activities: 80% (by FY2020)	69.0%	69.7%	70.7%	P129

* Results as of June 1 every year

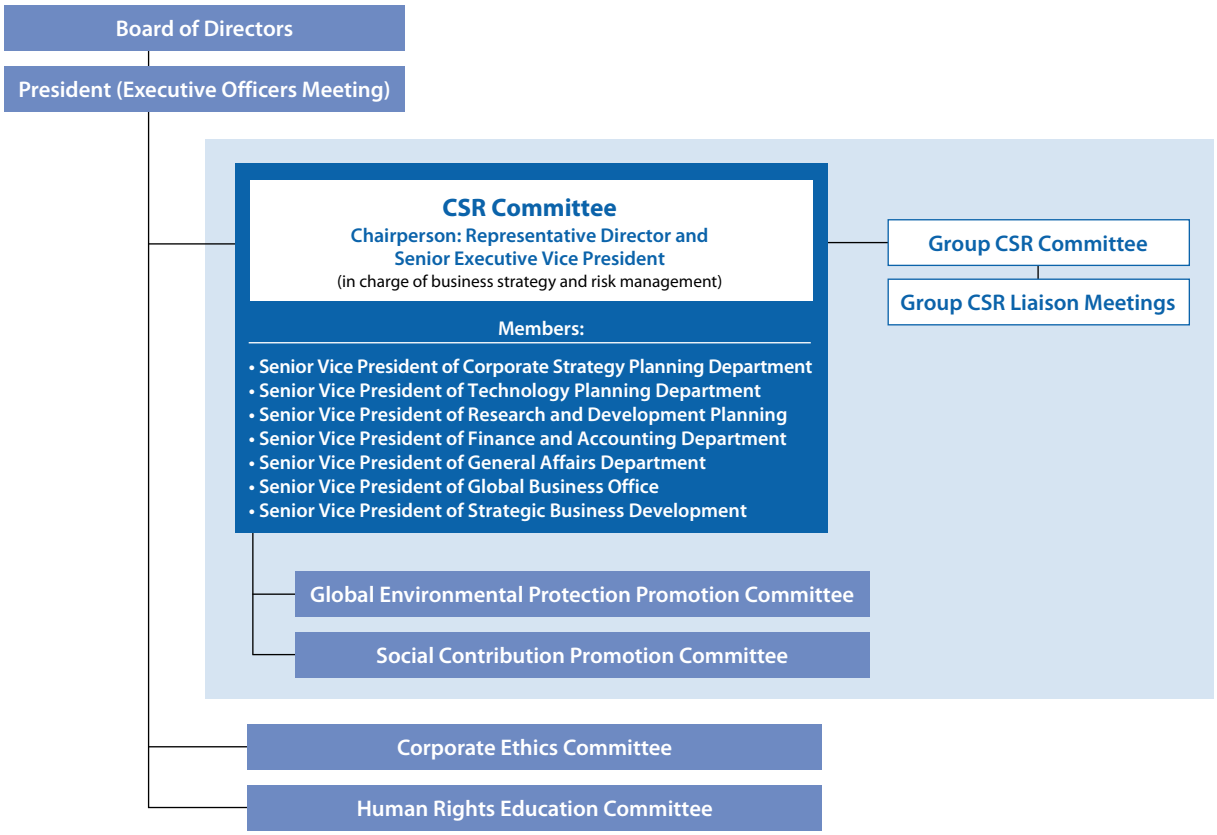
CSR Management

CSR Management System

In fiscal 2016, NTT established the CSR Committee, 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 sought to advance our Group CSR management by holding meetings of the Group CSR Committee, chaired by the chairperson of NTT's CSR Committee (representative director and senior executive vice president) and comprising chief CSR officers (senior executive vice presidents and the executive vice president) of major NTT Group 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.

NTT Group CSR Organization



NTT Group's PDCA Cycle for Promoting CSR

CSR Commitment

NTT Group delivers the highest quality ICT solutions as a "Value Partner" for customers and contributes to the creation of a prosperous and sustainable society with vibrant communication.

P PLAN

- Determine CSR Priority Activities and set targets (Corporate Communication Promotion Meetings)
- Determine and revise CSR Priority Activities and materiality

D DO

- Efforts by each business unit

C Check (Evaluation)

- Understand the status of goal attainment
- Publish the CSR Report
- Communicate with stakeholders
- Collect opinions and assess (dialogue, internal and external surveys, etc.)

A Action (Improvement)

- Provide feedback of customer voices
- Review activities

Stakeholder Engagement

- Customers (Corporations and Individuals)
- Shareholders and Investors
- Employees (Employees, Their Families and Retired Employees)
- Local Communities
- Business Partners
- ICT Companies and Industry Associations
- Central Government and Administrative Agencies

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. The Fiscal 2018 CSR Conference, the fifth such conference, was held in February 2018. Among the over 200 people in attendance were CSR and environmental staff from Group companies and employees interested in CSR.

At the event, 7 superior CSR initiatives, selected from among 45 submitted in advance from domestic and overseas Group companies, were presented by the staff in charge of the initiatives. In addition to domestic Group companies, participation by Chile-based everis and South Africa-based Dimension Data made the conference a global one. The event also featured Presentations on Social Contribution Ideas, which we have held continuously since fiscal 2015. Relevant staff presented 3 ideas, chosen from among 119 submitted by employees throughout the Group.

Another feature of the event was a panel discussion with Dai-ichi Life on the theme of instilling CSR philosophy. In addition, a display section adjoining the main venue presented a booth to introduce and sell fair trade-related products created in collaboration with NPOs, a booth to introduce NTT Group's special-purpose subsidiaries, an area for visitors to experience blind soccer, and other exhibits. We also promoted understanding of initiatives within the Group aimed at LGBT and other sexual minorities at the event. We will continue to hold the conference over the coming years and will enhance measures to promote participation by Group employees, in order to further instill CSR awareness.

NTT Group CSR Conference WEB http://www.ntt.co.jp/csr_e/groupcsr/conferences.html

Superior CSR Initiatives WEB http://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 creating a safe, secure and prosperous society that serves people, communities and the global environment. 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 AccountAbility 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

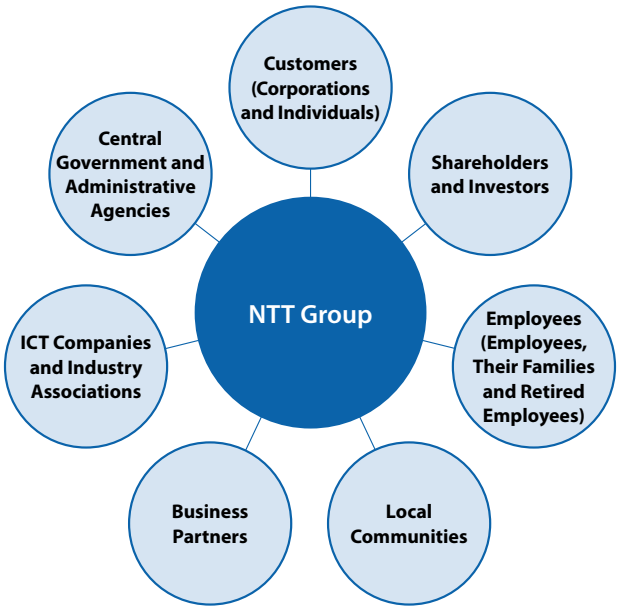
The first priority after concluding the engagement should be the communication of the results of the engagement, both internally and to participating stakeholders, and externally to the wider public where necessary, through website and/or report publication. Such communication should include an indication 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, central government and administrative agencies.



Major Stakeholders

NTT Group consists of Nippon Telegraph and Telephone Corporation and its subsidiaries and affiliates, of which 922 are consolidated subsidiaries as of March 31, 2018. Its business lines include regional communications, long-distance and international communications, data communications and mobile communications. 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

As we strive to be chosen as a "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.

Methods of Engagement (examples)

- Customer information service
- Customer satisfaction surveys
- Website, social media
- Annual reports

Why We Engage

NTT Group endeavors to enhance customer satisfaction and become a "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

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.

Methods of Engagement (examples)

- General Meeting of Shareholders, earnings reports
- Explanatory presentation for individual investors
- Explanatory presentation for institutional investors
- Annual reports

Why We Engage

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

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.

Methods of Engagement (examples)

- Employee satisfaction surveys
- Regular interviews
- Dialogue between labor and management
- Corporate ethics helplines
- CSR Conference

Why We Engage

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

We will advance alongside local communities by implementing social contributions and disaster countermeasures through our ICT business.

Methods of Engagement (examples)

- Support and collaboration through social contribution activities
- Negotiations with local residents on construction work, system development and other activities
- Support through donations and sponsorships

Why We Engage

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

We will seek to work together to create and implement services that address a variety of social issues.

Methods of Engagement (examples)

- Inquiry forms
- Disclosure of procurement policies and guidelines
- Questionnaires of suppliers
- Briefing for suppliers

Why We Engage

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

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.

Methods of Engagement (examples)

- Participation in industry associations and related initiatives
- Participation in conferences

Why We Engage

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 that make policy decisions on information and telecommunications, employment and the economy, the environment, and other issues

NTT's Approach

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.

Methods of Engagement (examples)

- Response to laws and regulations
- Policy proposals
- Participation in joint projects between the government and private sector

Why We Engage

We will respond to and comply with central and local government 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 and Investors

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 26 of these briefings in fiscal 2017, and hosted a booth at the Nikkei IR and Investment Fair 2016, with a total of approximately 2,000 individual investors attending these events. The 32nd annual General Shareholders Meeting was held in June 2017 with 6,759 shareholders in attendance. Please see page 138 for our dialogue with shareholders and investors. 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 March 2016, we invited RobecoSAM, a Swiss ESG rating institution, to our head office for a discussion on the CSR efforts of each NTT Group company and on enhancing the transparency of information disclosure through publications such as the Sustainability Report. NTT Group will continue to maintain regular communication with ESG rating institutions and investors promoting ESG investment.

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.

Enrich Social Communication

We will leverage ICT to help address social issues and create a more prosperous and convenient society.

INDEX

033 Contribute to Society through ICT

040 Improve Access to ICT

043 Pursue Customer Satisfaction

047 Generate Innovation

Contribute to Society through ICT CSR Priority Activity

Relevant GRI Standards

- 103-1,2
- 203-1,2

Relevant SDGs

Policies and Concepts

In recent years, financial markets have begun to evaluate non-financial information, such as a company's environmental, social and governance initiatives, generating greater demand for ESG investing. At the same time, greater attention is being given to the potential of the private sector's technologies and know-how following the adoption of the Sustainable Development Goals (SDGs) by the United Nations in 2015, which calls for companies to become global partners in sharing innovations that can solve social issues.

Amidst this, NTT Group has made significant changes to its business structure. We recognize that businesses combining broadband and information systems inside and outside Japan represent a new form of business that will unlock the further growth for NTT Group, while also enhancing industrial competitiveness and helping to solve community issues.

For example, building a new value creation model maximizing ICT, such as AI and IoT, know-how and knowledge that not only streamlines the operations and reduces the environmental impacts of a single company, but also raises the productivity of society as a whole, conserves the global environment and solves social issues, will result in growth opportunities for NTT Group and represents a duty we have to society as a global corporation with some 280,000 employees as well as countless customers and business partners around the world.

NTT Group considers itself a Value Partner, which collaborates not only with customers and telecommunications providers, but also companies from different industries and local governments. In this capacity, we are continually working to contribute to society using the power of ICT through our B2B2X model.

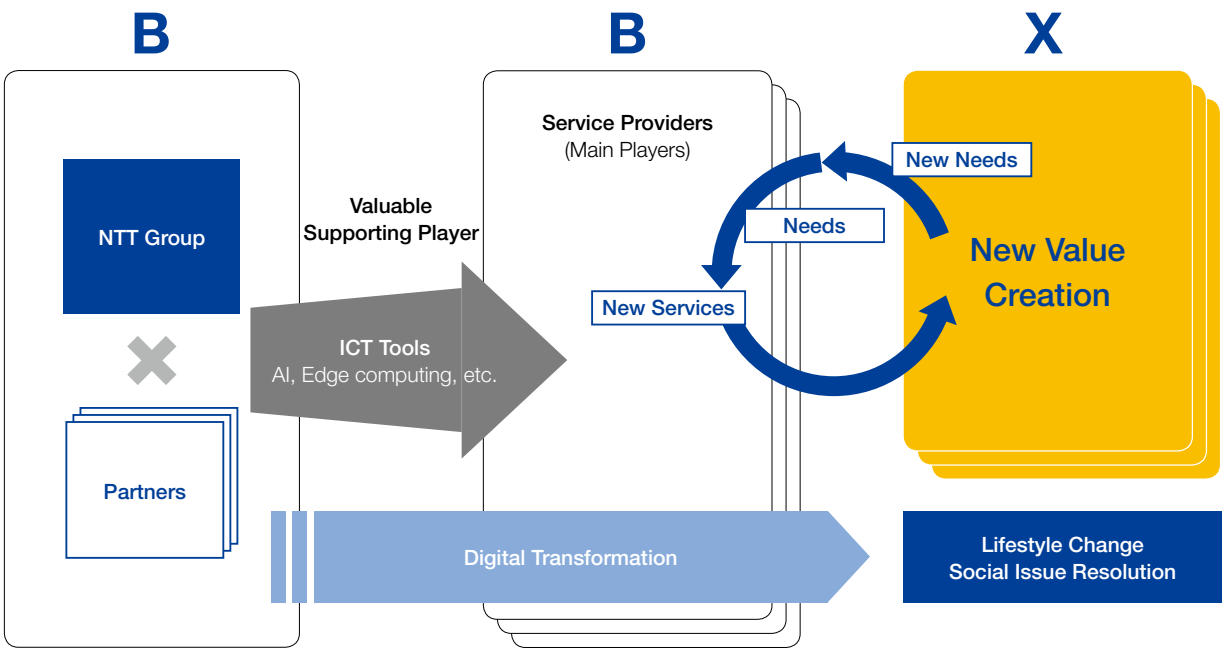
Organization for Implementation

NTT Group makes the promotion of B2B2X one of the pillars of our growth strategy. At regularly held meetings of the Board of Directors, debate over future actions is deepened, and the progress is reported on at General Meetings of Shareholders.

For NTT Group, accelerating the B2B2X business is an initiative to transform from our old model of directly providing services to individuals and companies, to a new model of delivering added value to end users through support for service providers in a variety of fields, by leveraging social and technological currents such as digitalization, the IoT, and artificial intelligence (AI). With the digitalization of information, the acquisition, processing, and distribution of a variety of data take place freely over networks, and the effective use of underutilized, or "sleeping," assets and know-how becomes possible. Moreover, the advance of the IoT means that it will become possible to grasp the state of all manner of things when necessary, not only through smartphones and other mobile devices, but also through network-connected sensors and monitors in machines, buildings, and infrastructure. Furthermore, the adoption of AI makes the instantaneous processing and analysis of large volumes of collected data possible, and dramatically enhances the possibilities for supporting the creation of new added value by service providers.

We are now working to resolve social issues while expanding the B2B2X model. Through actions such as improving Wi-Fi environments so they are easy even for visiting tourists to use, and revitalizing local economies and responding to aging populations and declining birthrates through collaboration with diverse companies and organizations.

B2B2X Business Model



Main Initiatives

Examples of the B2B2X Business at Work

Under the NTT Group medium-term management strategy Towards the Next Stage 2.0, we are promoting the B2B2X business that creates high value-added services. We do so through collaboration with partners from other sectors and local governments to solve various issues of this modern society, such as enhancement of industrial competitiveness and revitalization of local economies.

In an example from the sports business field, we are deepening our collaboration with the J.League soccer league, and are promoting user participation-oriented event measures linked to social media and to the utilization of NTT Group's ICT services and assets. In addition, we draw out the maximum potential of ICT and collaborate with global partners, with NTT Group as a whole working to make industries "Smart."

Conclusion of a Top Partner Contract and an Official Technology Partner Contract with the J.League

In order to improve the utilization rate of stadiums and expand opportunities for fans and supporters of J.League club teams to enjoy matches, we promote initiatives such as fan participation-oriented match viewing experiences tied to NTT Group's ICT services and social media, and live public viewing of away games on large screens in home stadiums.

To cultivate new fans, we are making efforts to develop new entertainment experiences using NTT Group's AR, VR, and other such latest technologies, as well as promoting the usage of past video held by J.League and linking digital content with DOCOMO shops. We are also working to strengthen the digital customer base for J.League club teams.

Sapporo Smart City Initiatives

In July 2016, NTT Group joined the Sapporo City ICT Utilization Platform Study Panel, and the Group has since proceeded to advance smart city initiatives in Sapporo City. Targeting a wide range of fields, including tourism, transportation, and snowfall countermeasures, these initiatives have been aimed at invigorating and resolving the issues faced in the region. As one facet of these initiatives, the DATA-SMART CITY SAPPORO ICT platform open data website was established in January 2018 through a public-private partnership. Regional economic stimulus measures are being advanced through cooperation between Sapporo City and local companies, with examples of such cooperation including the sharing and analysis of data that is beneficial to business growth. Today, the number of companies participating in these initiatives is gradually expanding, and we are seeing participation from various industries, including the commercial facility, lodging, and tourism industries. With the aim of accelerating these initiatives, NTT Group is coordinating with the Ministry of Economy, Trade and Industry's project for promoting sharing of industry data* to facilitate more sophisticated data analyses and thereby make further contributions to regional economic development.

Sapporo City is known globally for its heavy snowfall, and, being a massive city with a population of 2.0 million, this metropolis is forced to spend exorbitant amounts on snow removal each year. Moreover, snow impedes people's everyday lives as well as distribution in the city for roughly half of each year. NTT Group sought to address this situation by using ICT to share the expertise of skilled snow removal operators and to compile daily snow removal measure reports (Figure 1). These measures targeted massive improvements in snow removal efficiency. In addition, we have conducted the first automated driving trial on public roads (Figure 2). Taking place in the heart of Sapporo City, this trial was geared toward alleviating traffic congestion in the city. As seen in these initiatives, NTT Group is working to resolve various social issues in Sapporo.

* This Ministry of Economy, Trade and Industry fiscal 2017 adjusted budget project is designed to promote data collection and utilization between several companies in the five priority fields for connected industries (1. Automated driving and mobility services, 2. Biotechnologies and materials, 3. Smart life, 4. Plant / infrastructure safety management, and 5. Manufacturing and robotics).

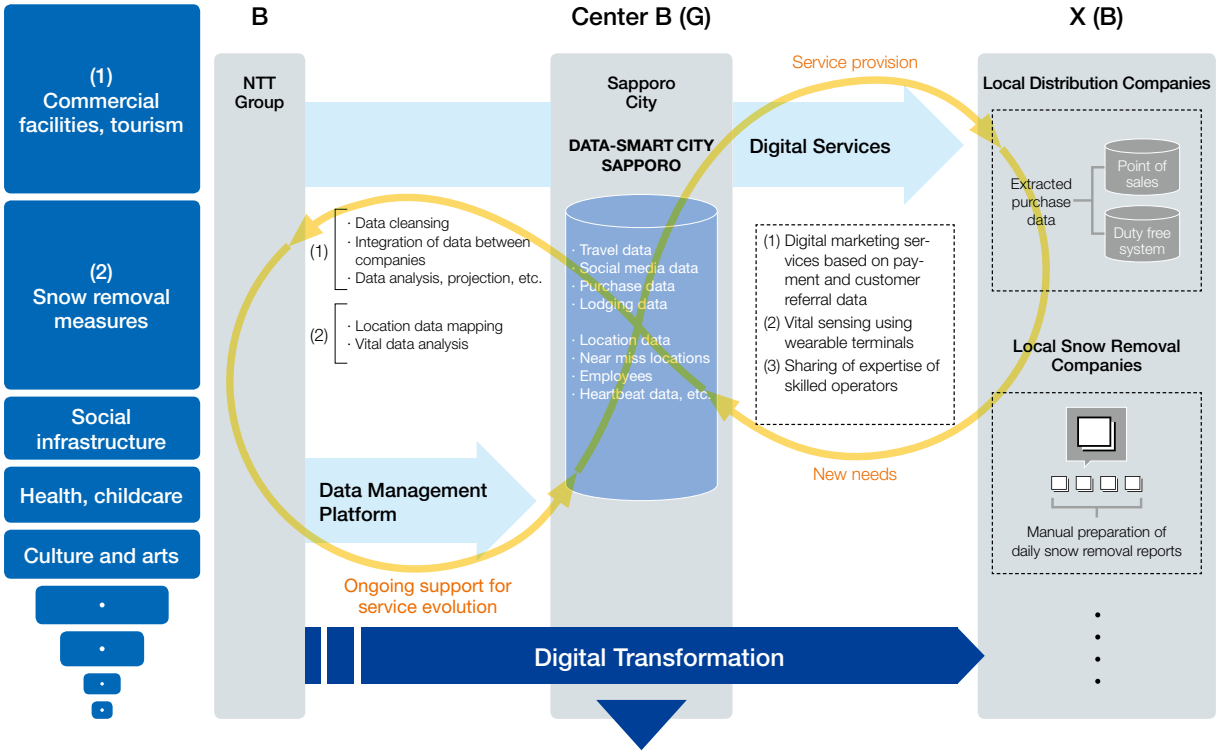


Figure 1: Snow Removal Measures

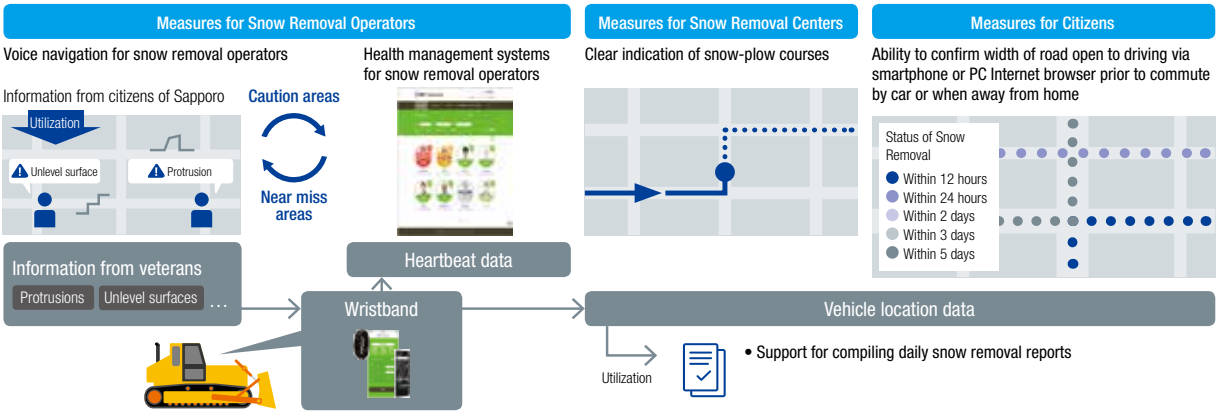
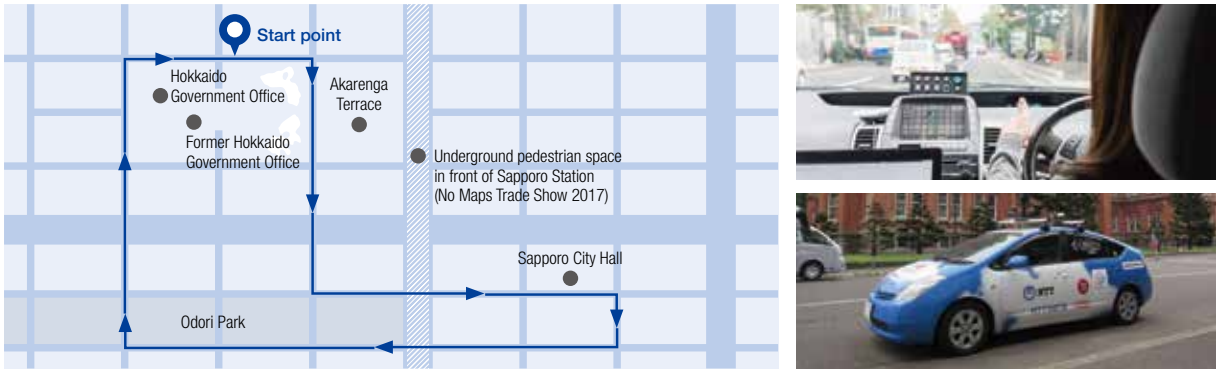


Figure 2: Automated Driving



Yokohama Smart City Initiatives

Yokohama City is promoting open innovation for utilizing data and creating new value through coordination with private-sector companies via means such as the use of data to accurately track conditions and identify issues when formulating municipal government policy. Following the formulation of Yokohama City's plan for the utilization of public and private data as well as the establishment of the School of Data Science at Yokohama City University, NTT signed the Agreement for Comprehensive Collaboration for Realizing a Super-Smart Society by Utilizing Public and Private Data. This agreement is part of Yokohama City's efforts to step up public-private-academia collaboration regarding the utilization of public and private data to realize a super-smart society.*

Based on this agreement, we will expand the scope of our initiatives for utilizing data in various fields, including healthcare, welfare, child-rearing, and education, to improve the convenience of people's lives and for realizing more efficient and effective governing through data-based policy making. Yokohama City and NTT Group will seek to address the increasingly complicated and diverse needs of citizens.

In conjunction with government policy, NTT Group will expand the initiatives it is conducting in Sapporo City, Fukuoka City, and Yokohama City to ordinance-designated cities, communities, and regional economic spheres across Japan. These efforts will function as a platform for working together with communities to resolve the issues they face and to invigorate these communities.

* As defined by the 5th Science and Technology Basic Plan approved by the Cabinet Office in January 2016, a super-smart society is one in which people can receive the items and services they need when and in the amount required. This society should be capable of providing fine-tuned responses to various social needs and making high-quality services available to all. In this manner, an ultra-smart society will enable people to overcome differences of age, gender, region, and language to live empowered and comfortable lives.

Las Vegas Smart City Initiative

The recent rise in crime and disasters in urban areas is placing even more importance on the duty of local governments, police and fire departments, and other authorities to protect the safety of citizens at city and event sites where large numbers of people gather. Fulfilling this duty requires that these authorities be able to track the movement of crowds and traffic conditions and detect emergency situations. Facilitating swift initial responses is of particular importance. Accordingly, there is a need for public safety solutions that install various sensors to allow relevant organizations to maintain an up-to-the-moment understanding of situations and that predict and analyze incidents that are highly likely to be of a criminal nature.

To respond to this need in Las Vegas, NTT, NTT DATA, NTT Communications, and Dimension Data have partnered with Dell Technologies Inc. Working together with the city, these companies will pool their expertise to realize a public safety solution that accommodates the needs of both relevant authorities and citizens.

The public safety solution we are verifying in Las Vegas has three notable characteristics.

The first characteristic is its reactive nature, which facilitates swift responses to accidents and incidents. Information from surveillance cameras and sensors is analyzed by micro data centers (edge systems) neighboring the monitored area to quickly detect accidents or incidents and dispatch police or fire fighters or make prompt announcements as necessitated by the situation.

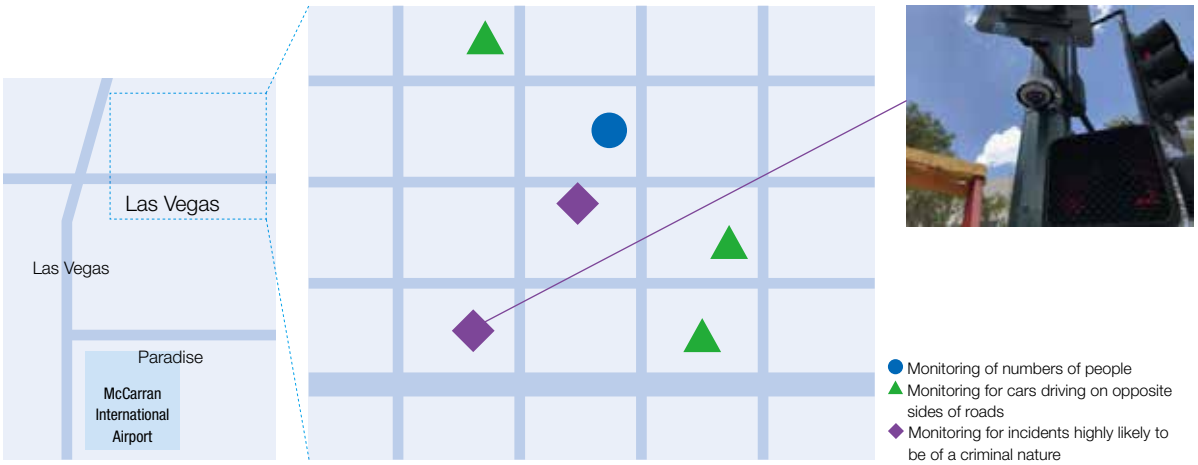
The second characteristic of this solution is its proactive, predictive response capabilities. By utilizing multisource information to analyze trends based on information from various sources, this solution employs AI technologies to predict crowding, cars driving on opposite sides of roads, and incidents that are highly likely to be of a criminal nature in order to furnish preemptive responses.

The third characteristic is its swift and efficient deployment of ICT resources. By combining NTT's orchestration technologies and DELL Technologies' virtualization technologies, we have created the innovative Cognitive Foundation architecture, which allows for integrated construction, configuration, management, and operation of the user's existing ICT resources.

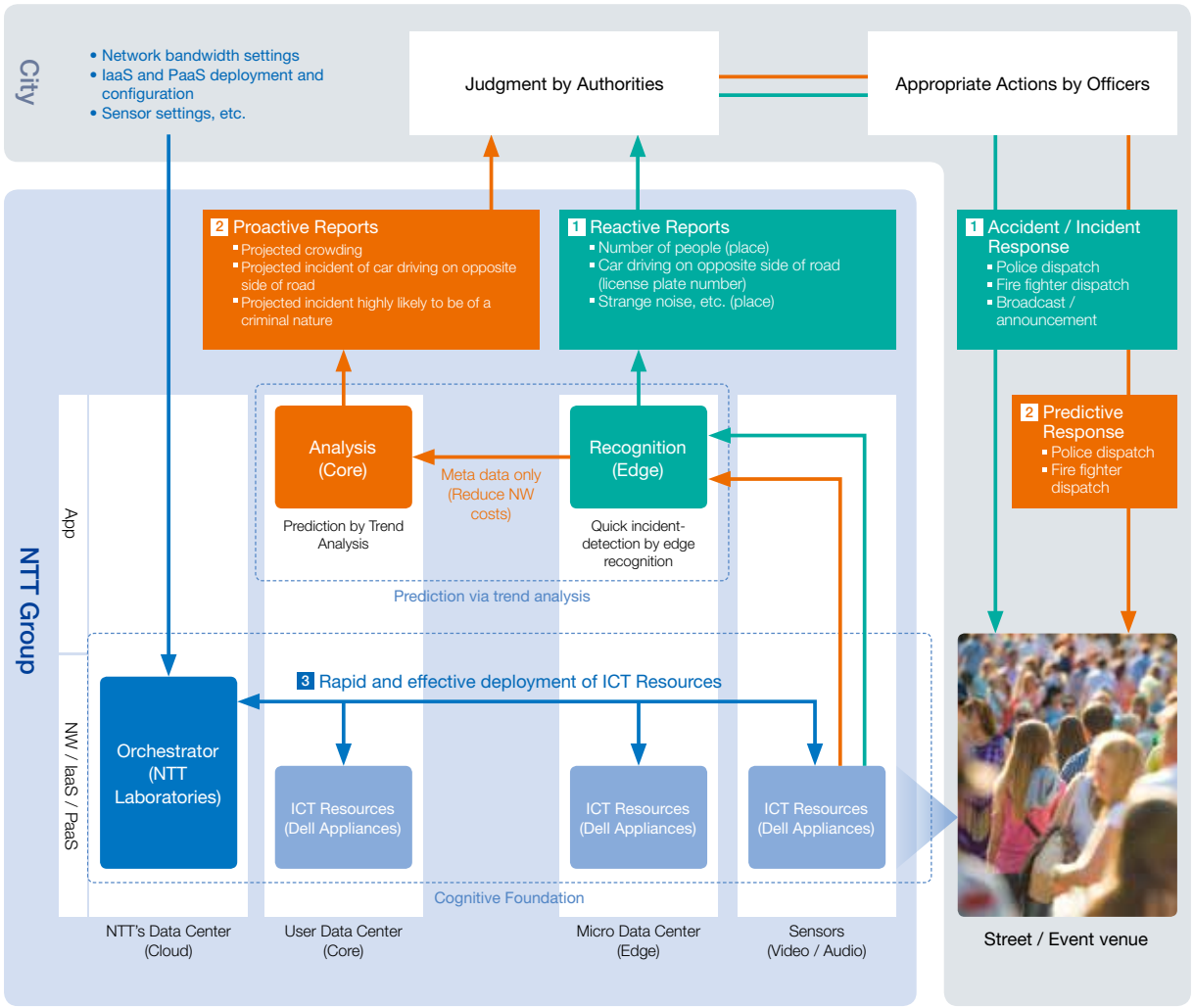
We are able to provide fully integrated services to customers by taking advantage of the robust product lineup of DELL Technologies, the AI and orchestration technologies of NTT Laboratories, the integration capabilities of NTT DATA and Dimension Data, and the data centers of NTT Communications. By supplying public safety solutions that make use of technologies for comprehensive management of cutting-edge AI, IoT, and ICT resources, we will contribute to the creation of digital societies.

Together with Dell Technologies, NTT Group plans to launch a commercial version of this solution for cities in the United States and around the world. This launch is scheduled for winter 2018, after the completion of the joint verification test. Furthermore, we anticipate that the Cognitive Foundation architecture will be a powerful asset going forward, and we intend to leverage this asset to expand B2B2X businesses in various ICT fields, including agriculture, factories, and connected cars.

Verification Test Involving the Installation of Numerous Sensors in Downtown Las Vegas



Overview of Public Safety Solution in Las Vegas



Realize to create safe environment in public area by cutting-edge technologies

1 Incident responsive actions (Reactive)
Quick detection and response to incident/accident by the edge analysis at the nearest micro data center

2 Predictive actions (Proactive)
Advanced prediction and proactive response by utilizing trend analysis and multi source sensor data

3 Rapid and effective deployment of ICT resources
Realize by remotely controlling ICT resources dynamically and rapidly in multi layer and end–end point

Improve Access to ICT CSR Priority Activity

Relevant GRI Standards

- 103-1,2
- 203-1,2

Relevant SDGs

Policies and Concepts

NTT Group provides telephone services including subscribed phones, public phones, and emergency numbers that can be used fairly and reliably by all households in Japan. NTT Group has fulfilled its responsibility as an electronic communications provider, migrating, on average across Japan, more than 90% of fixed access networks to fiber optics while NTT DOCOMO achieved a population coverage of 99% for its LTE service.

At the same time, a number of new issues have emerged in terms of the ICT access network. These include improving regional ICT access in areas with a high cost for building access networks, such as mountainous regions and remote islands, providing services that are easy to use for people with disabilities, and enhancing Japan's Wi-Fi environment that can be used by the increasing number of foreign tourists visiting Japan in recent years.

Organization for Implementation

NTT Group, as a Value Partner continually chosen by its customers, contributes to creating an ICT access environment that can be used easily by all. Specifically, we work with other partners to offer a diverse range of fee systems and service variations through the wholesale fiber access service of NTT East and NTT West and the MVNO service of NTT DOCOMO. In this manner, we are working to ensure ICT access services are closely in tune with customer needs.

Two of our major goals under our CSR priority activities include enhancing the system to provide diverse ICT services globally and providing ICT services available for a broad range of customers, including the elderly and persons with disabilities. Indicators for these goals are expanding countries of service and expanding the number of universal design-capable products and services. In addition, we have worked diligently to improve ICT access through proactive initiatives including special discounts on dedicated lines for educational facilities, discounts on mobile phone use for persons with special needs, and increasing the number of Wi-Fi spots in urban areas and tourist destinations.

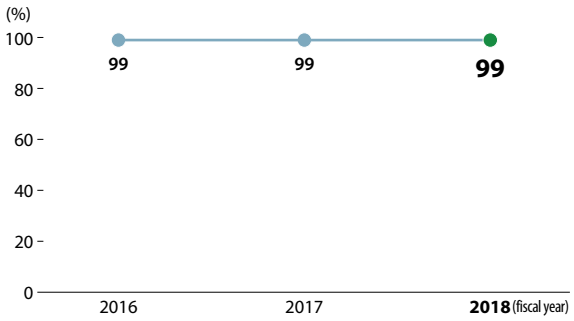
Main Initiatives

Migrating Access Networks to Fiber Optics and Expanding Wi-Fi Environments

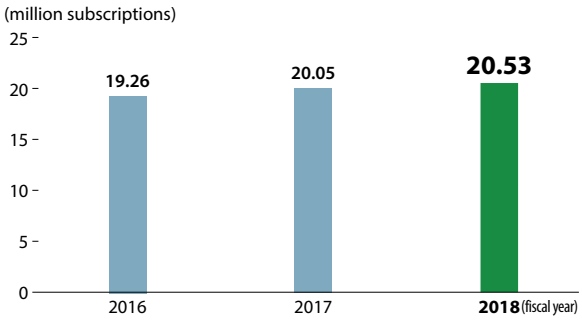
NTT Group has been working to switch communication lines to fiber optic lines, which are high-speed and provide large-capacity Internet access, since August 2001. While expanding scenarios for the use of services such as IP telephone services and video streaming services, NTT East and NTT West are engaging in B2B2X business development through the Hikari Collaboration Model that provides optic fiber access service and other services to a variety of business operators. The companies are also striving to invigorate the ICT market through the creation of new value, and to enhance ICT services through collaboration with business operators in diverse industries.

In terms of developing the Wi-Fi environment for which demand continues to rise with the spread of mobile phones and tablet devices, NTT DOCOMO achieved a population coverage of 99% for its LTE service and work is also being advanced on building and operating new Wi-Fi spots by the entire NTT Group, including not only NTT DOCOMO, but NTT East and NTT West as well. We are accelerating efforts to develop Wi-Fi spots through public-private partnerships to deal with the recent increase of foreign visitors.

Percentage of the population covered by LTE



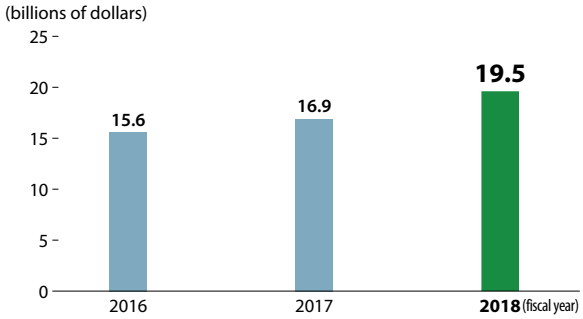
Number of fiber optic access service subscriptions



Improving ICT Access Around the World

In expanding its business globally, NTT Group is making steady progress with enhancing its lineup of global cloud services through M&A and improving access to ICT. To accommodate the various needs of customers around the world as a one-stop service, NTT Group is enhancing its service provision capabilities in a broad range of fields from ICT infrastructure to applications related to cloud services, improving its response capabilities from consulting to system development and maintenance when customers migrate to cloud solutions, and enhancing its service provision capabilities on a global scale.

Sales of global services

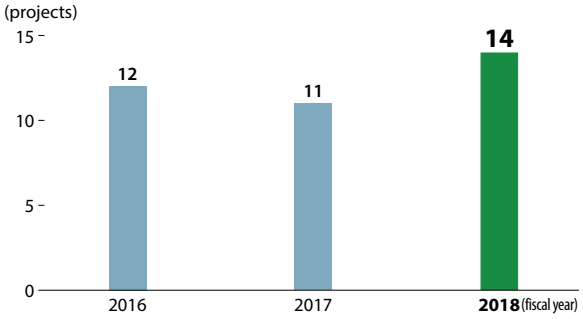


Initiatives for Universal Design*

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 trials and expanded functions)

Number of universal design-capable products and services



Examples of Universal Design Products and Services in Fiscal 2018

- "petoco" home communication device
- New Visual Voicemail feature, an evolution of voice mail service
- Bedside IT Services using hospital rooms' existing televisions
- Installation of a Next-Generation Parking Lot, evolved through ICT and collaboration with local government, in Hiroshima Prefecture

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.

The Group established the NTT Group Web Accessibility Policy in March 2014. 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 WEB http://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 WEB https://business.ntt-east.co.jp/service/schoolplan/ (Japanese only)

NTT West WEB https://flets-w.com/cpn/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.

WEB https://www.nttdocomo.co.jp/charge/discount/hearty/about/index.html

Pursue Customer Satisfaction CSR Priority Activity

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, enhancing products and services, and influencing development based on the "voice" of customers received through survey, 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 customer satisfaction surveys, 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.

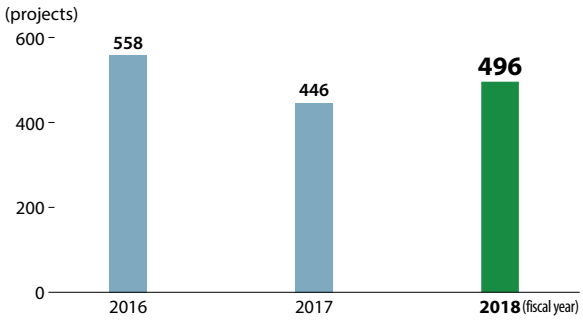
Main Initiatives

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.

Number of improvements made based on suggestions from customers

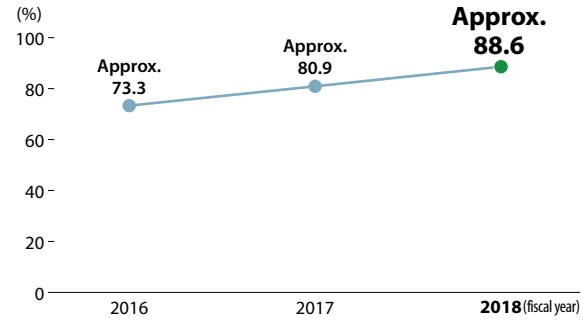


Reflecting the "Voice" of Customers

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.

Response rate at our call centers



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

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

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

NTT Communications "For Increased Customer Satisfaction" WEB https://www.ntt.com/about-us/cs/cs.html (Japanese only)

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

Examples of Improvement in Fiscal 2018

Company	Initiatives
NTT EAST	• Improved the Disaster Message Board (web171) with a language selection display for easier use by foreigners
NTT WEST	• Used video to show settings when switching from FLET'S HIKARI Premium to FLET'S HIKARI NEXT service, making configuration easier
NTT DOCOMO	• Expanded the application of the Simple Plan to Ultra Pack for single-user customers • Enabled the receipt of restored data through an expanded-function dedicated app for the mobile phone data restoration service
NTT Communications	• Improved visibility of the content of the OCN Mobile ONE app

Customer Satisfaction Survey

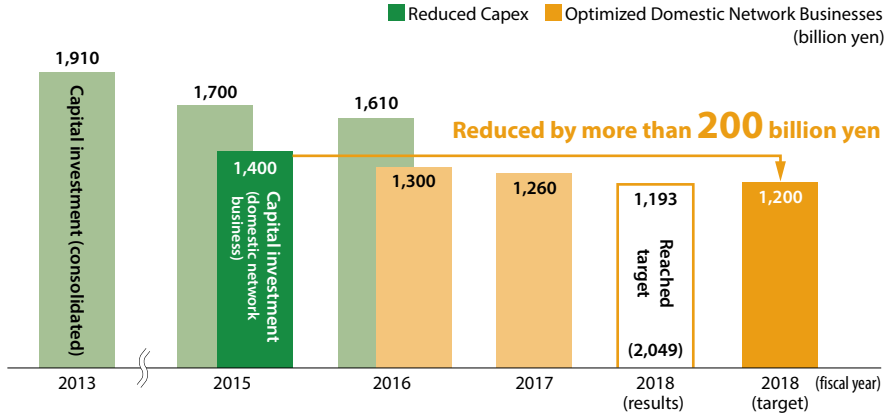
The companies of NTT Group receive high marks in customer satisfaction surveys by outside survey organizations. We will continue working to improve our products and services to even better enhance customer satisfaction.

Optimizing Capacity Utilization and Establishing Highly Efficient Business Management

Under its medium-term management strategy, Towards the Next Stage 2.0, NTT Group sought to optimize capacity utilization and establish highly efficient business management. We strived to reduce capital investment in the domestic network business by at least 200 billion yen by fiscal 2018, compared to fiscal 2015, so that we could optimize capacity utilization and reduce operational costs on fixed line/mobile access networks by at least 800 billion yen, which would ensure highly efficient business management.

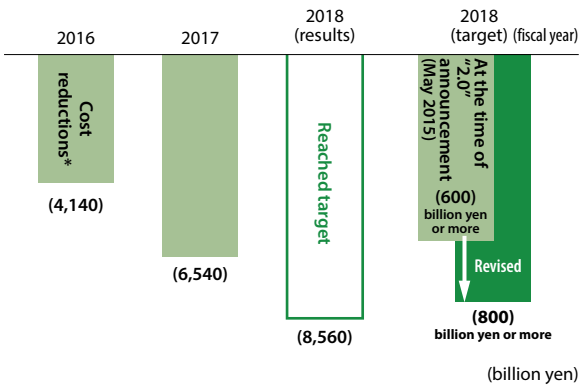
We set the reduction of procurement costs and greater sophistication and efficiency of ICT systems as themes for the improvement of efficiency of capital investment, and set the reduction of business operating costs as a theme for improvement of service. As a result, we established high operational efficiency in work and achieved our initial targets.

Streamlining Capital Investment



Notes: 1. Excludes real estate assets.
2. Excludes NTT Communications' data centers and certain other assets.

Cost Reductions



* Excludes impact of revision in depreciation method.

Generate Innovation CSR Priority Activity

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. We also seek to overcome numerous problems involving safety, disaster readiness, and improvement of productivity, 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, acting not as NTT Group alone, but in partnership with counterparts in wide-ranging industries.

Organization for Implementation

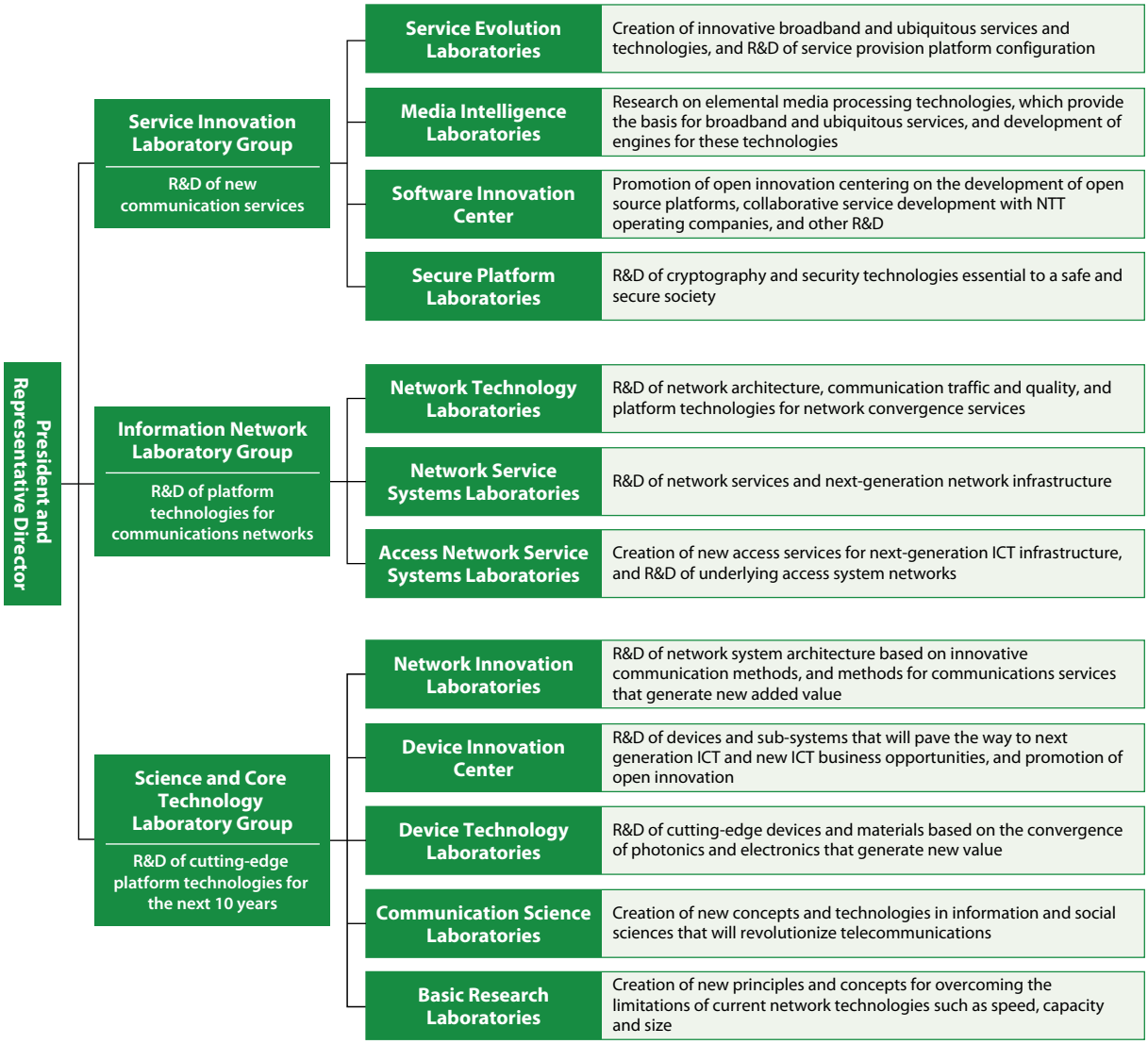
With respect to R&D undertaken by NTT Group, NTT's three laboratory groups are responsible for conducting basic research that serves as the backbone of telecommunications, such as basic and component technologies related to services and networks, while each operating company conducts applied research that is more closely related to its business. NTT Group currently employs about 5,500 researchers and spends approximately 210 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.

NTT R&D Organization Chart



Main Initiatives

Collaboration in R&D

NTT's research and development engaged in many projects under our medium-term management strategy Towards the Next Stage 2.0. Especially, we accelerated the creation of high value added services through combining the core technologies of our laboratories and the advantages of various players from different industries, with the aim of migrating to a new business model known as the B2B2X model.

As an example, NTT and Shochiku Company Limited are working together on a new kabuki experience driven by the latest ICT technology. In March 2018, we held "Virtual Kabuki Theatre in Fukushima" as an activity to support recovery from the Great East Japan Earthquake. On the day of the event, we used NTT Laboratory's Kirari! immersive tele-presence technology to show a video of the "KABUKI LION SHI-SHI-O" performance from May 2016 in Las Vegas, giving residents of Fukushima Prefecture the feeling of watching kabuki actors perform live before their eyes.

Collaboration through AI Technologies

NTT Group does not aim for AI to emulate human intelligence or thoughts, but rather for it to substitute for, or support, certain activities, and coexist/co-create with people, fostering the realization of an enriched society.

We have defined four types of AI technologies that we will work with: Agent-AI, Heart-Touching-AI, Ambient-AI, and Network-AI. In addition, we have chosen corevo® as the brand name for the Group's AI technologies based on our desire to create revolutions with our AI technologies through collaboration with various leading players in the field.

NTT Group aims to utilize its AI technologies to resolve social issues and strengthen industrial competitiveness through joint efforts together with collaboration partners and local government agencies.

In terms of the IoT, the degree to which data and other information can be collected is of utmost importance. NTT Group has long been optimally utilizing an array of wired and wireless technologies for inter-equipment communications to respond to the needs of customers for communications among various pieces of equipment (e.g., meters, monitoring terminals, vending machines, security devices). Calling upon the track record and experience cultivated through this process, we will provide network technologies and solutions for the coming IoT era.

The advent of the IoT will no doubt necessitate the use of a substantially larger range of equipment than seen previously. The types of data needing to be collected will be equally varied, consisting of text and numerical data as well as images, voice recordings, and videos.

NTT Group seeks to provide customers with IoT networks that are optimally managed and operated to fulfill the communication conditions this era will require. To accomplish this goal, it will not be enough to simply offer access to communication lines. Rather, we must integrate technologies for managing IoT networks in their entirety as well as data distributed processing technologies, security technologies, and an assortment of various other IoT technologies. NTT Group possesses a wealth of technologies and experience that will enable it to rise to this challenge, and we are committed to supporting customers looking to adopt the IoT with our expertise and systems.

corevo website WEB http://www.ntt.co.jp/corevo/e/ corevo

Utilization and Involvement in Open Source Software (OSS)

At NTT, we develop reliable software centered on OSS and provide support services to NTT Group by utilizing NTT Group's R&D functions and open innovation with the OSS community around the world, in order to contribute to the realization of innovative and easy to use ICT services.

Specifically, we are working to contribute to TCO reductions across the life cycle of ICT systems, contribute to the creation and growth of innovative ICT services solutions, and develop human resources who can be active in global open innovation markets.

Initiatives Aimed at 2020

As part of its initiatives aimed at 2020, NTT must not only contribute to the provision of telecommunication services that deliver safety, security and comfort, but also help provide the best possible hospitality to visitors from inside and outside Japan. Specifically, we are pursuing technology that will deliver highly realistic sensations, allowing people around the world on a real-time basis to feel as if they are actually there, so that everyone can share in the excitement.

Moreover, we are promoting R&D toward creating technology to understand the needs of people, such as visitors to Japan, in order to realize the provision of more proactive services.

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. As of the end of fiscal 2018, we owned approximately 13,900 patents in Japan and 3,300 outside of Japan.

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. 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.

NTT discloses its licensing policy and procedures along with detailed information on its R&D activities and technological licenses.

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

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

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

Results of R&D Activities in Fiscal 2018

Patents

In recent years, we have been focusing on building a global patent network in line with the globalization of our business.

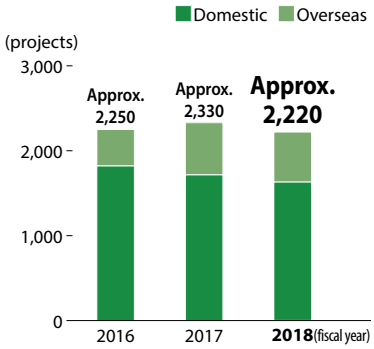
Scientific Papers and External Announcements

R&D achievements by our laboratories are actively presented at conferences for experts and published in specialized academic journals.

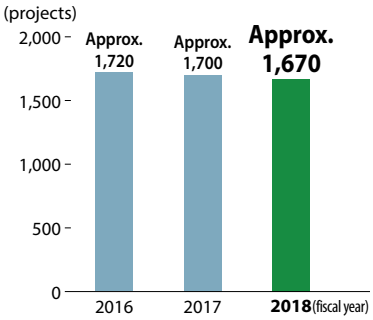
Standardization Activities

Backed by R&D activities across a broad spectrum of telecommunications technologies, we actively participate in standardization projects undertaken by various organizations, including the ITU and ISO, as well as forums where recent discussions have been under way. By doing this, we shoulder a part of NTT's corporate activities and pursue the orderly development of global telecommunications.

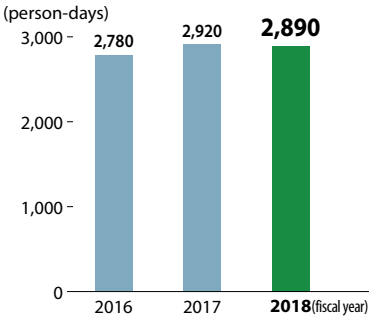
Number of patent applications



Number of scientific papers published



Participation in international standardization meetings



Public Recognition and Technological Awards

NTT has been recognized as a Top 100 Global Innovator by Clarivate Analytics* (headquartered in Philadelphia, USA) for seven years running since fiscal 2012.

The Top 100 Global Innovators are selected based on the four main criteria of overall patent volume, patent-grant success rates, global reach and invention influence as evidenced by citations. Based on the scores for each, the top 100 companies around the world are selected for their innovation, compliance with intellectual property protection, and inventions that influence the world. NTT understands the award certifies that R&D activities of NTT Group are pioneering inventions with significant value in a global market.

* Thomson Reuters' IP & Science business was sold to Onex Corporation and Baring Private Equity Asia, and was renamed Clarivate Analytics.

Protect the Global Environment

We are committed to reducing both the environmental impacts of our own business activities and those of society as a whole through providing ICT services.

INDEX

053 Our Thinking Concerning the Environment
060 Environmental Management
065 Environmental Impacts Overview
066 Realizing a Low Carbon Future
077 Implementing Closed Loop Recycling
082 Planning a Future of Natural Harmony

Our Thinking Concerning the Environment

Relevant GRI Standards

- 102-16,18,19
- 103-1,2
- 302-4
- 305-5
- 306-2

Relevant SDGs

—

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 WEB http://www.ntt.co.jp/kankyo/e/management/charter.html

History of NTT Group's Environmental Activities

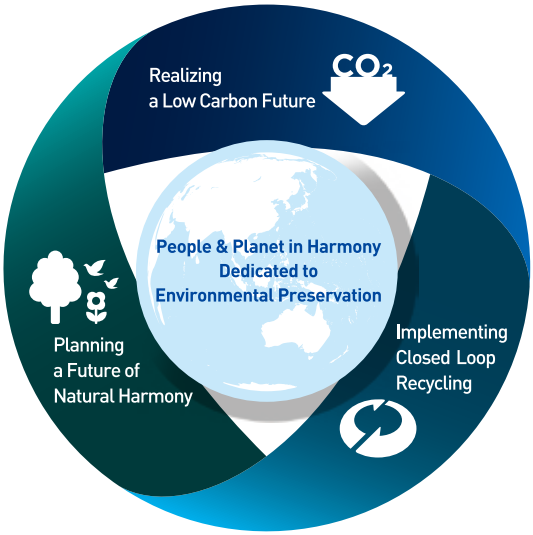
1991	**April**	Set up the Environmental Response Office.
	July	Set up the Global Environmental Protection Promotion Committee as a decision-making organ.
	October	Established the NTT Global Environmental Charter stipulating the basic environmental principles, basic policies and promotion system. Formulated the Basic Program of Environmental Protection to set targets for key action plans.
1992	**March**	Formulated a detailed program compiling the action plans of each business unit.
1997	**November**	Set up issue-based committees for promoting initiatives on six key issues.
1999	**July**	Changed the name of the organization to the Environmental Protection Office following the restructuring of NTT. Established the new NTT Group Global Environmental Charter to clearly express our basic principles and policies. Formulated NTT Group Ecology Program 21 as our basic concept for promoting environmental protection.
2000	**March**	Set our targets for fiscal 2011 on paper resource management, global warming prevention and waste management.
2006	**May**	Formulated the NTT Group Vision for Environmental Contribution as a guideline for activities for contributing to the reduction of environmental impact for society.
2010	**November**	Added "conservation of biodiversity" to the basic policy of the NTT Group Global Environmental Charter. Announced THE GREEN VISION 2020 as NTT Group's environmental vision for fiscal 2021.
2016	**September**	Announced "The NTT Group Environmental Statement," which expresses the future of our planet and the kind of enterprise we would like to become in that future. Set "The Eco Strategy 2030" as the targets for fiscal 2031.

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 (see page 59), 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

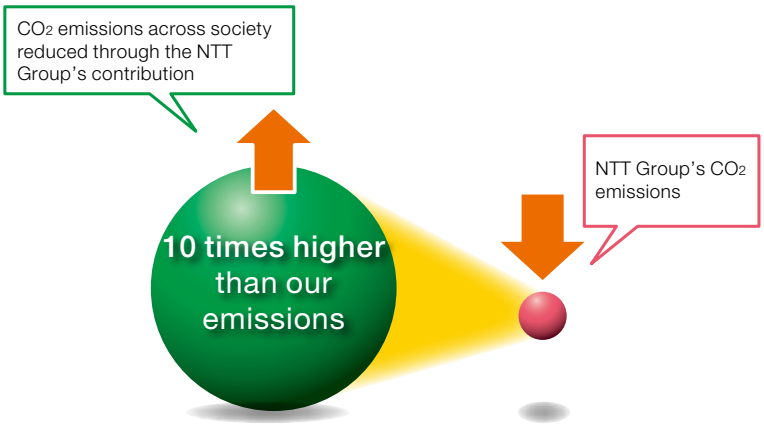
We will contribute to reducing the CO_2 emissions of society by at least 10 times more than the NTT Group's own emissions.

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



Improvement of Telecom Power Efficiency

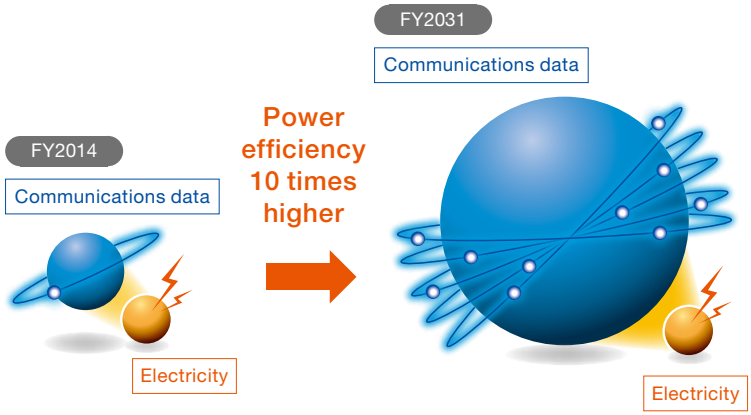
We will raise power efficiency per data transmission in our telecommunications businesses by at least 10 times compared to fiscal 2014 levels.

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



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.

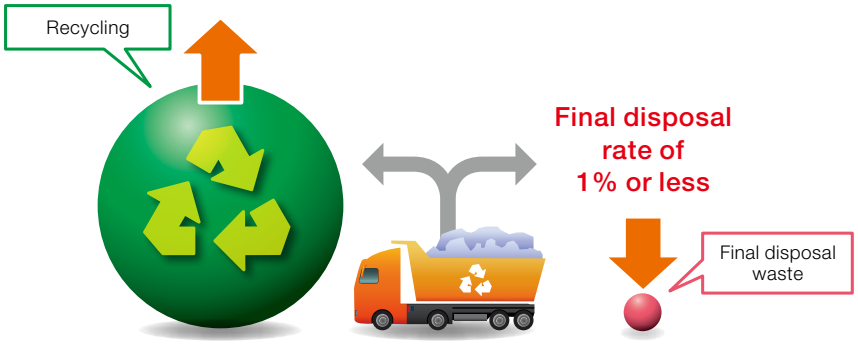
* Zero emissions: NTT Group considers a final disposal rate of 1% or less to be that which satisfies zero emissions conditions.

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



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

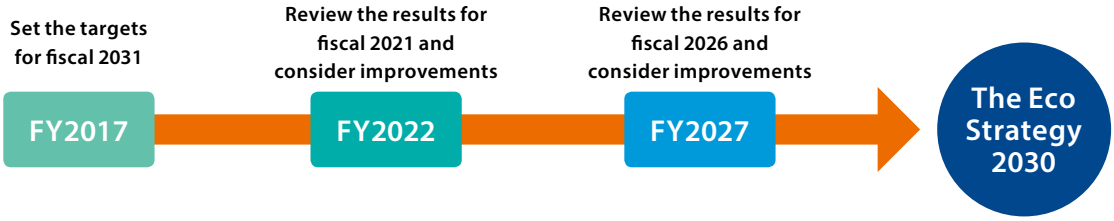
Recognizing ecosystem as the foundation that sustains our social activities, we will promote preservation of the Earth's ecosystem. We will pursue initiatives centered on preserving biodiversity and work to solve issues related to the blessings from these ecosystems, such as water and food.

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.



Identifying the Priority Environmental Issues of NTT Group

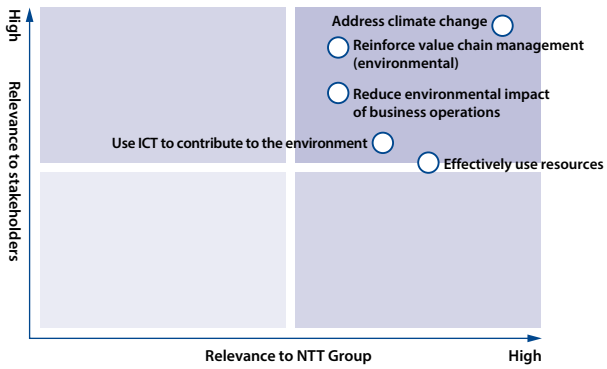
We identified five issues as NTT Group's CSR Priority Activities in the domain of Protect the Global Environment: using ICT to contribute to the environment; reinforcing value chain management; addressing climate change; reducing the environmental impact of business operations; and effectively using resources (see page 18).

These CSR Priority Activities are related to activities and initiatives encompassing a broad area of the environment. To focus on our priority issues related to the environment, we carried out a materiality analysis to examine them in greater detail.

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.

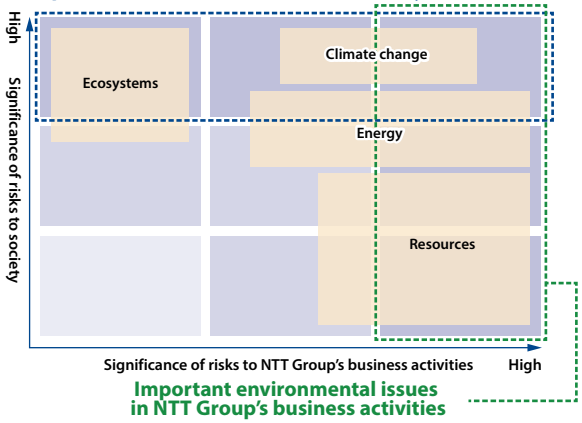
We will promote the contribution to solving important environmental issues in society through all our activities, such as by providing ICT services and developing groundbreaking technologies and activities undertaken by our employees. We will also work to reduce our own environmental impact with regard to the environmental issues of significant importance to NTT Group's business activities.

NTT Group CSR Priority Activities (Protect the Global Environment)



Focusing on priority issues related to the environment

Important environmental issues in society



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 CO_2 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 CO_2 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

Environmental Management

Relevant GRI Standards

- 102-12,18
- 307-1
- 308-1

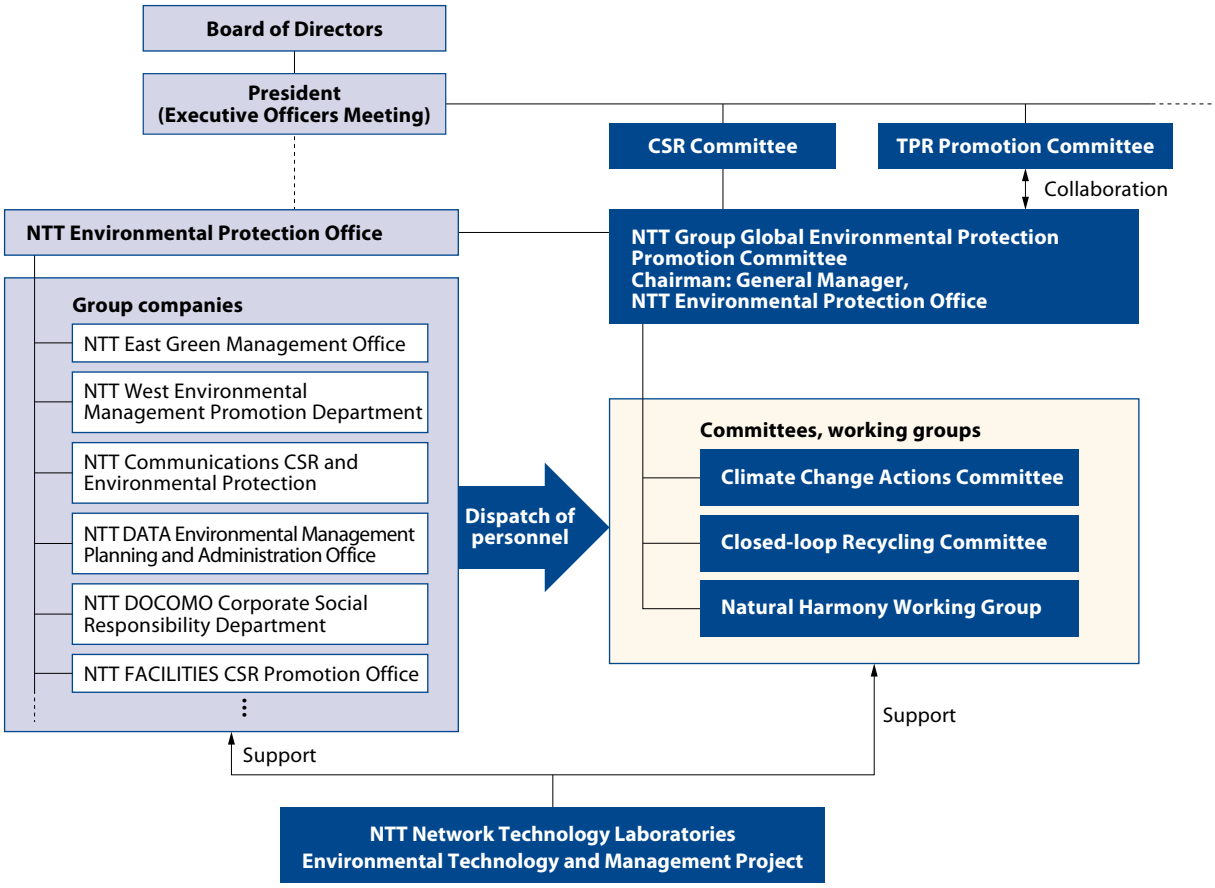
Relevant SDGs

Organization for Environmental Management

We established the NTT Group Global Environmental Protection Promotion Committee as an internal unit under the CSR Committee (see page 23) 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 TPR 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.

Planned participation in EP100*1 and EV100*2

NTT Group has indicated specific numerical targets for improvement of power efficiency and for the transformation to e-Mobility, and plans to participate in the EP100 and EV100 international initiatives for energy efficiency sponsored by The Climate Group. By participating in international initiatives like these, we will be declaring NTT Group's environmental initiatives to the outside world and expressing our stance toward addressing international environmental issues.

As for specific numerical targets, we will double energy efficiency and reduce energy consumption by 10% between fiscal 2018 and fiscal 2026 in our telecommunications business, and will have 50% of our vehicles be electric vehicles by 2025, and 100% by 2030.

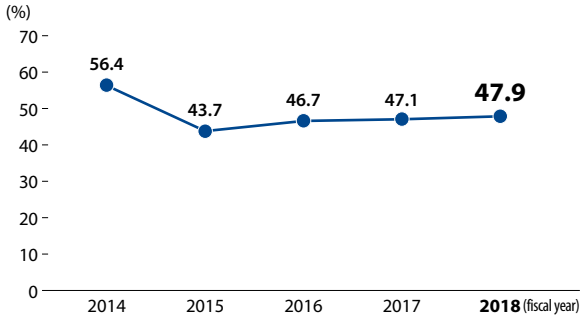
*1 EP100: An international initiative by which participating companies aim to double the energy efficiency of their businesses (through 50% improvement in energy consumption efficiency, etc.).
*2 EV100: An international initiative to promote companies' use of electric vehicles and to improve the environment for electric vehicles.

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.

Status of ISO 14001 Certification Acquisition (employee coverage)



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).

In fiscal 2018, costs for the prevention of pollution increased from the previous fiscal year due to a significant increase in the volume of hazardous materials processed, despite decreases in costs of resource recycling, including recycling and processing of telecommunications equipment and facilities. Investments decreased from fiscal 2017, primarily due to a reduction in replacement of inefficient equipment. Economic benefits increased from fiscal 2017 due to further cost reductions accompanying the reuse of decommissioned telecommunications equipment.

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 (millions of yen)		Environmental costs (millions of yen)		Economic benefits (millions of yen)			Material benefits (thousands of tons)		
	Fiscal 2017	Fiscal 2018	Fiscal 2017	Fiscal 2018		Fiscal 2017	Fiscal 2018		Fiscal 2017	Fiscal 2018
(1) Business area costs	**9,090**	**6,970**	**18,820**	**19,750**						
Pollution prevention costs	**360**	**70**	**4,190**	**6,220**						
Global environmental conservation costs	**8,630**	**6,780**	**3,420**	**3,200**	Cost reductions through energy conservation	**9,720**	**8,860**	Reductions in CO_2 emissions through energy conservation measures	**482**	**305**
Resource recycling costs	**100**	**120**	**11,210**	**10,330**	Revenues from sale of recyclable waste (decommissioned communications equipment, etc.)	**6,870**	**6,570**	Recycled decommissioned communications equipment	**240**	**220**
					Waste disposal cost reductions through recycling	**270**	**150**	Recycled construction waste	**175**	**133**
					Cost reductions through reuse of decommissioned communications equipment	**27,160**	**38,300**	Recycled civil engineering works waste	**140**	**129**
					Cost reductions through reuse of communications devices	**11,810**	**11,060**	Recycled office waste	**36**	**33**
					Cost reductions through reuse of office waste materials	**0.0**	**10**	Other recycled items	**10**	**8**
(2) Upstream/downstream costs	**90**	**80**	**11,030**	**10,680**	Revenues from sale of recyclable waste (subscriber communications devices, etc.)	**570**	**490**	Number of communications devices collected from customers (thousands)	**9,771**	**8,560**
					Cost reductions in postal expenses through computerization	**15,570**	**14,910**			
(3) Administrative costs	**70**	**80**	**4,620**	**4,650**						
(4) R&D costs	**2,290**	**2,590**	**7,830**	**7,930**						
(5) Citizenship activity costs	**0.0**	**0.0**	**60**	**40**						
(6) Environmental remediation costs	**0.0**	**0.0**	**0.0**	**0.0**						
Total	**11,540**	**9,730**	**42,360**	**43,050**	**Total**	**71,970**	**80,340**			

• 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 (130 companies in total).

• Applicable period

- Data for fiscal 2018 is from April 1, 2017 to March 31, 2018.
- Data for fiscal 2017 is from April 1, 2016 to March 31, 2017.

• 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 Guideline for Buildings
- Energy Efficiency Guidelines
- 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. Our 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 the 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 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 http://www.ecoict.jp/eng/index.html

Eco ICT Logo

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 2018, too, we provided training related to the Group's environmental activities, such as group training and e-learning, for all employees, lectures on the environment for new employees, and so on.

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 2018, we invited university professors with expertise in international corporate strategies to speak on creating shared value (CSV) management, and held discussions on the topic within the Group. After related staff in Group companies introduced their CSV management initiatives, we debated what NTT Group's unique approach to CSV should be, based on the Group's corporate philosophy and Environmental Statement.

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 2018, following the same result for fiscal 2017.

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 2018, 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.

Performance Data

Indicator	Unit	Results			
		FY2015	FY2016	FY2017	FY2018
Volume of directly generated GHG emissions (Scope 1)	t-CO_2	217,000	197,000	190,000	**185,000**
Volume of indirectly generated GHG emissions (Scope 2)	t-CO_2	4,860,000	4,690,000	4,400,000	**4,210,000**
Total amount of non-renewable energy used	MWh	8.950,000	8,740,000	8,360,000	**8,230,000**
Total amount of renewable energy used	MWh	90,000	90,000	90,000	**80,000**
Total volume of water used	Million m^3	12.4	11.7	12.4	**12.6**
Total volume of waste disposed	Ton	5,000	6,000	6,000	**6,000**

Environmental Impacts Overview

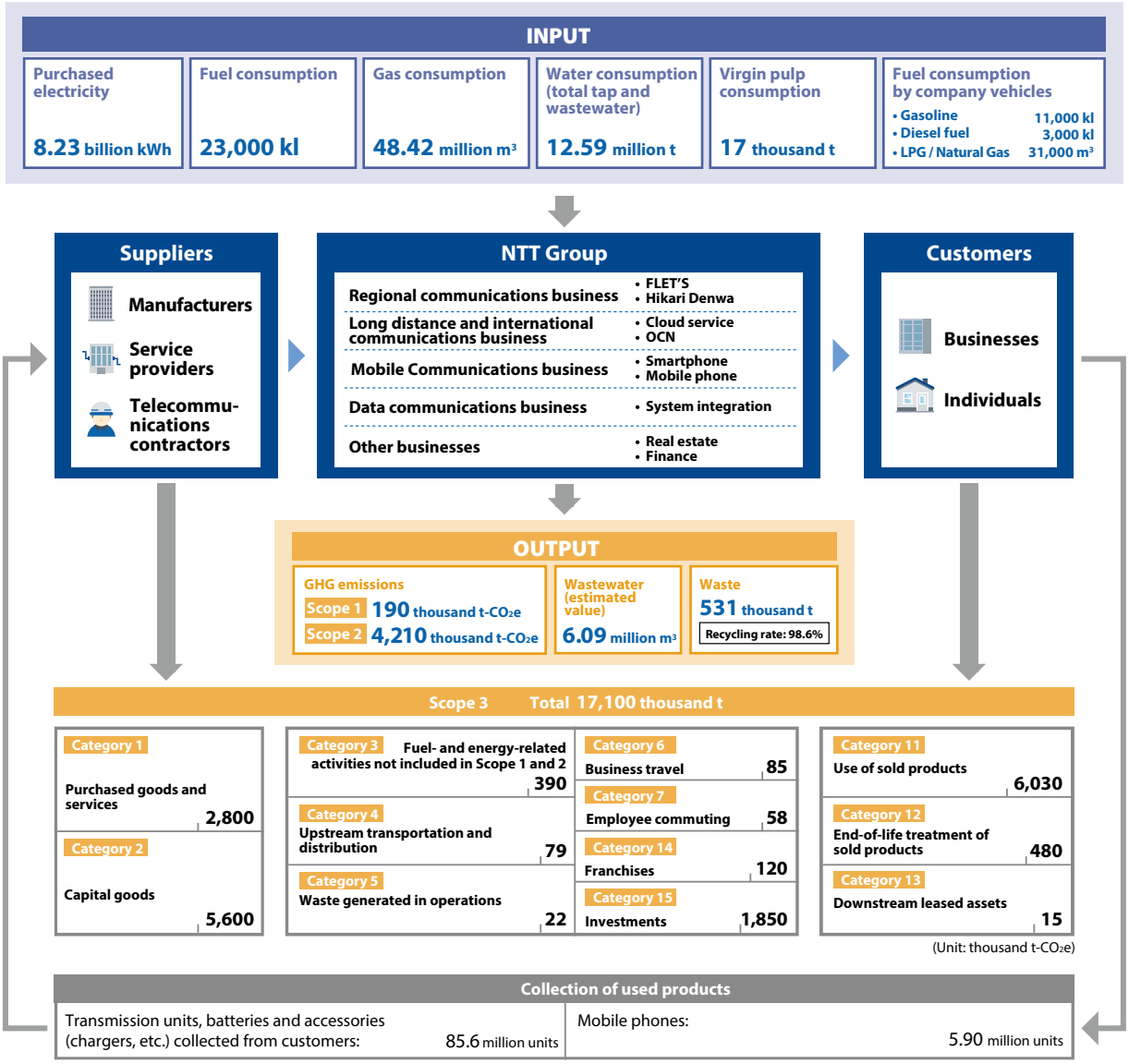
Relevant GRI Standards

- 301-1,2,3
- 302-1,2
- 303-1
- 305-1,2,3
- 306-1,2

Relevant SDGs

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 2018)



Realizing a Low Carbon Future

Relevant GRI Standards

- 102-11,15
- 103-1,2
- 201-2
- 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.

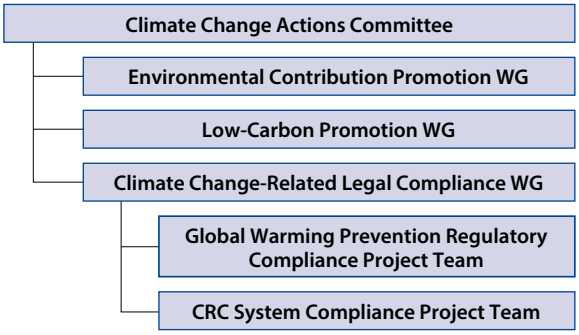
There is growing demand for conserving energy given the rising amounts of electricity use associated with the development of ICT. At the same time, ICT is expected to contribute to energy savings, the reduction of CO_2 emissions across society, and the provision of adaptation measures.

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

In fiscal 2018, NTT Group reformed its Greenhouse Gases (GHG) Reduction Committee to establish the Climate Change Actions Committee. This 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 undertakes appropriate responses to climate change-related laws and ordinances.

Climate Change Countermeasure System



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 emissions 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.

Reduction of CO_2 Emissions across Society

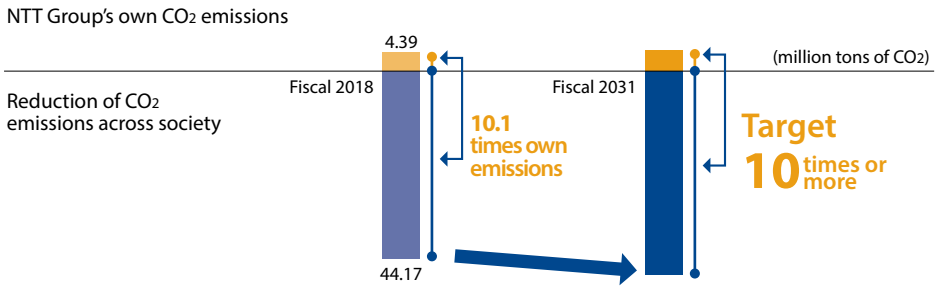
NTT Group has established a target for fiscal 2031 calling for it to contribute to reducing the CO_2 emissions of society as a whole by at least 10 times more than NTT Group's own emissions through its services and technologies.

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 emissions 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.

Notes: 1. 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.
2. 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.

Contribution to Reducing CO_2 Emissions across Society



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 2018, 5 solutions were certified as environmentally friendly, bringing the total number of certified solutions to 67 (as of March 31, 2017).

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

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

Environmental Solution Label

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 has also 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.

CO_2 emissions by Dimension Data

FY 2017*	GHG direct emissions (Scope 1)	About 13,000 tons
	GHG indirect emissions (Scope 2)	About 98,000 tons

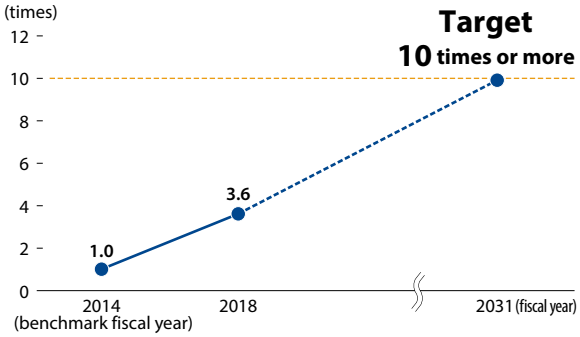
* July 2016 to June 2017

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 95% 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.

In fiscal 2018, we were able to provide 3.6 times as much information as in fiscal 2014 using the same amount of electricity by introducing highly energy efficient equipment and improving the efficiency of network structures based on our Energy Efficiency Guidelines.

Power Efficiency of the Telecommunications Business



Note: 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).

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 95% 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 600 million kWh from projected levels in fiscal 2018.

Risks and Opportunities Related to 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, are 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 920 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 2.25 and 2.85 yen/kWh. In this case, NTT Group will incur an additional financial burden of between 18.5 and 23.5 billion yen a year (estimated from actual electricity usage in fiscal 2018 of 8.23 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 DASH®) 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, potentially making it difficult to provide telecommunications services. 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 0.82 and 2.5 billion yen a year (estimated from actual electricity usage in fiscal 2018 of 8.23 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 2018, we invested approximately 6.8 billion yen into measures for reducing electricity usage, including those related to air conditioning facilities discussed above (service life of 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 long-standing 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.

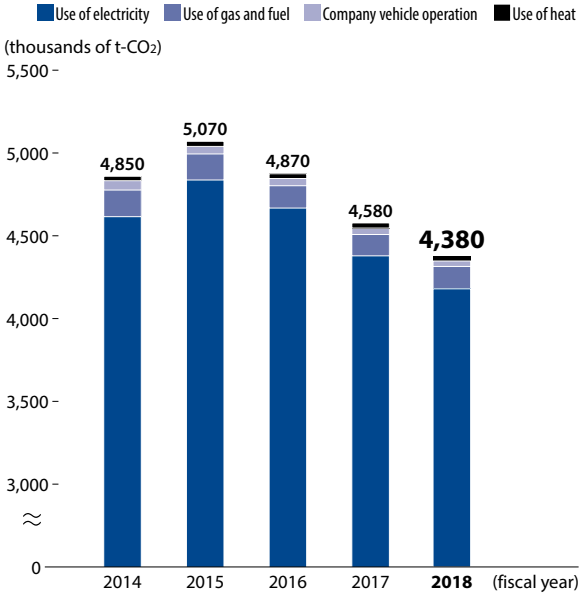
Adaptation of Society by Providing ICT:

Mobile ICT unit

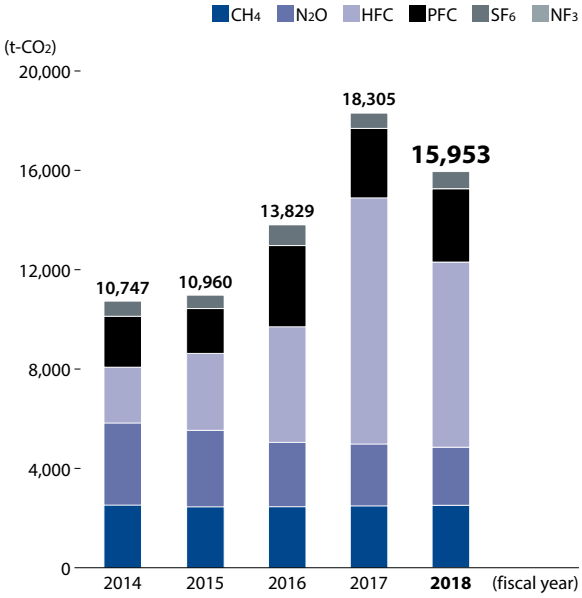
We provide mobile boxes and automobiles equipped with communications, information processing and storage functions to enable the swift recovery of communication functions in areas affected by a disaster. We also offer functions for collecting data on the people affected. These services contribute to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

CO_2 Emissions of NTT Group

CO_2 Emissions from Business Operations



Greenhouse Gas Emissions other than CO_2 Emissions (CO_2 emissions-equivalent)

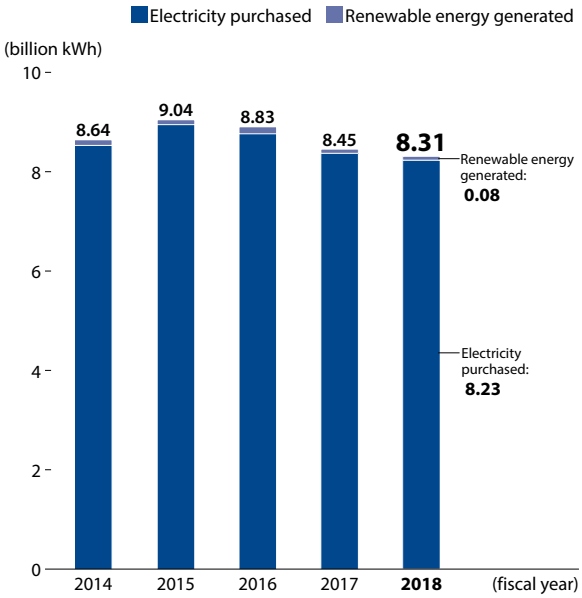


* NF_3 has been included in emission amounts starting with the results for fiscal 2016.

Fiscal year	2014	2015	2016	2017	2018
Electricity purchased (billion kWh)	8.52	8.95	8.74	8.36	8.23
Electricity emission factor (kg/kWh)*	0.541	0.540	0.534	0.524	0.508
CO_2 attributable to electricity consumption (thousands of t-CO_2)	4,610	4,840	4,670	4,380	4,180
CO_2 attributable to gas and fuel consumption (thousands of t-CO_2)	164	159	139	134	135
CO_2 attributable to company vehicles (thousands of t-CO_2)	55	47	42	38	33
CO_2 attributable to heating (thousands of t-CO_2)	20	26	27	29	27
Total CO_2 emissions (thousands of t-CO_2)	**4,850**	**5,070**	**4,870**	**4,580**	**4,380**

* Weighted average of electricity emission factors announced annually by each power company weighted according to the amount of each company's power used by NTT Group
* The CO_2 emissions from business operations exclude emissions of greenhouse gases other than CO_2.

Electric Power Consumption

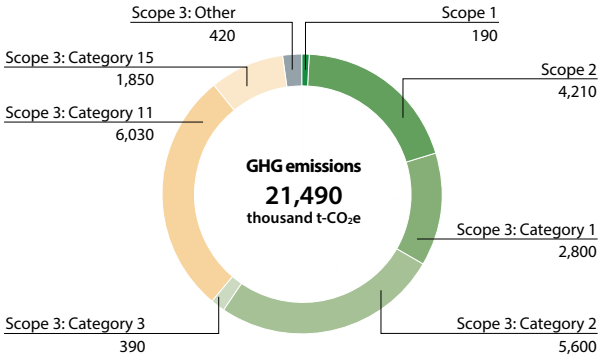


Indirect GHG Emissions Generated over the whole Value Chain (Scope 3 Categories)

In addition to the environmental impact directly generated by our business activities, NTT Group has been calculating and disclosing the indirect GHG emissions that have been generated over the whole value chain (Scope 3).

Fiscal 2018 Scope 3 Emissions

Scope category	Scope and method of calculation	Emissions (thousands of t-CO_2e)
GHG emissions (Scope 1 + 2 + 3)	–	21,490
Scope 1 (direct emissions)	–	190
Scope 2 (indirect emissions from energy use)	–	4,210
Scope 3 (indirect emissions from the value chain)		17,100
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	2,800
Category 2: Capital goods	Calculation based on capital investment costs on communications and other equipment	5,600
Category 3: Fuel- and energy-related activities not included in Scope 1 and 2	Calculation based on annual consumption by energy type	390
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	79
Category 5: Waste generated in operations	Calculation based on volume of waste by type	22
Category 6: Business travel	Calculation based on paid expenses for business travel	85
Category 7: Employee commuting	Calculation based on paid expenses for employee commuting	58
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	6,030
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	48
Category 13: Downstream leased assets	Calculation based on average use of leased assets	15
Category 14: Franchises	Calculation based on total floor area of sales franchises	120
Category 15: Investments	Calculation based on Scope 1 and 2 emissions of investees in proportion to shareholding	1,850



*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.

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.

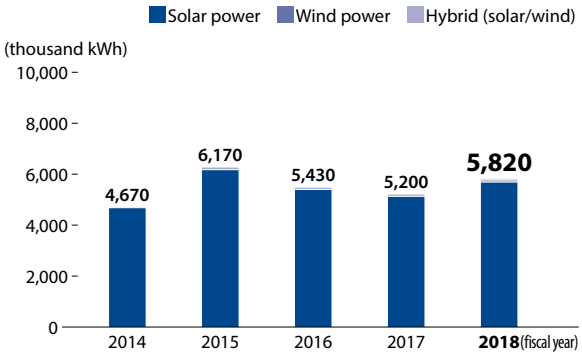
We are also operating some data centers using renewable energy and have installed a 5 kW solar power generating system at NTT East's Komagome Data Center. Solar power systems have also been set up at NTT East's Chiba Data Center, NTT West's Osaka Data Center, NTT Communications' No. 2, No. 4, No. 5, 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.

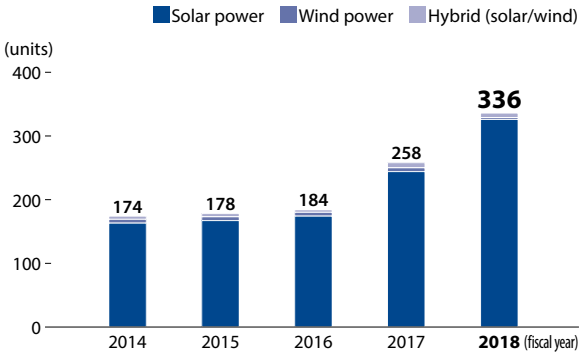
Use of Clean Energy

NTT Group has been engaged in activities that use clean energy, and we will continue our Group-wide effort of actively using clean energy.

Clean Energy Generation



Number of Clean Energy Generators

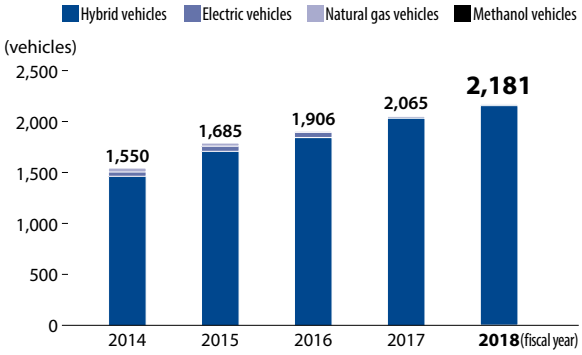


Increasing Low-Emission Company Vehicles

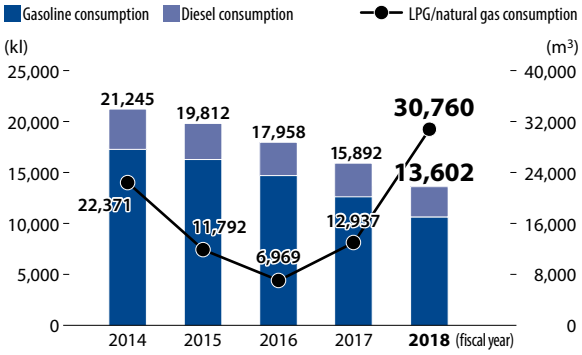
NTT Group is seeking to reduce CO_2 emissions from its company vehicles by introducing fuel-efficient and low-emission vehicles to its fleet, including hybrid vehicles, electric vehicles and natural gas vehicles. We are also promoting the sharing of company vehicles on a building-by-building basis to optimize the allocation of our fleet and reduce the number of vehicles.

By proceeding with education for and practice of environmentally-friendly driving among employees, we are encouraging cleaner and safer driving habits not only when they use company vehicles, but also their own vehicle at home.

Number of Low-Emission Company Vehicles



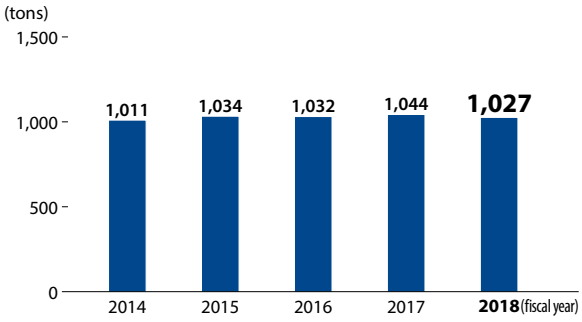
Fuel Consumption by Company Vehicles



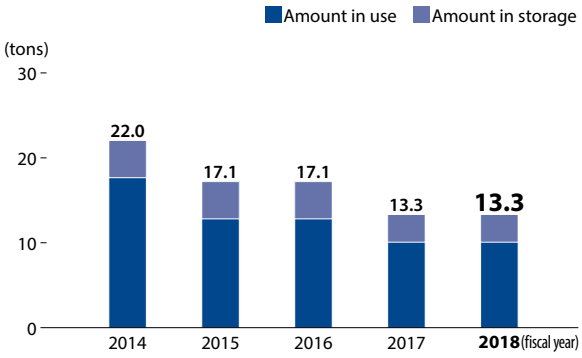
Initiatives for Protecting the Ozone Layer

Halon contained in widely used gaseous fire extinguishing agents and fluorocarbons used in air conditioners and refrigerators are specified as ozone-depleting substances. NTT Group has sought to avoid new construction and the expansion of facilities that use specified halon or fluorocarbons (chlorofluorocarbons (CFCs)) and to promote the shift to alternative facilities. We also manage centrifugal refrigerators using CFCs to ensure the number of units does not rise.

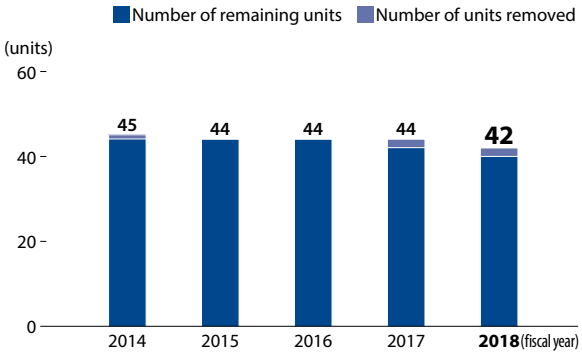
Amount of Specified Halon Used for Fire Extinguishing Equipment



Amount of Specified Chlorofluorocarbons Used in Air Conditioning Equipment



Number of Centrifugal Chillers (that use CFCs) and Number of Units Removed



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

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.

Final disposal ratio of waste

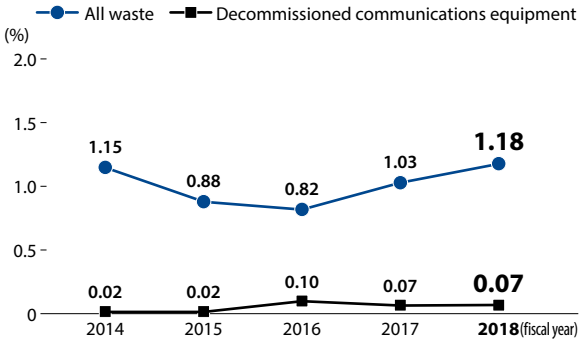
NTT Group has established a target to continually achieve zero emissions by fiscal 2031 in which the final disposal ratio of waste generated by NTT Group is under 1%.

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.

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 13 consecutive years since fiscal 2005.

Final Disposal Ratio

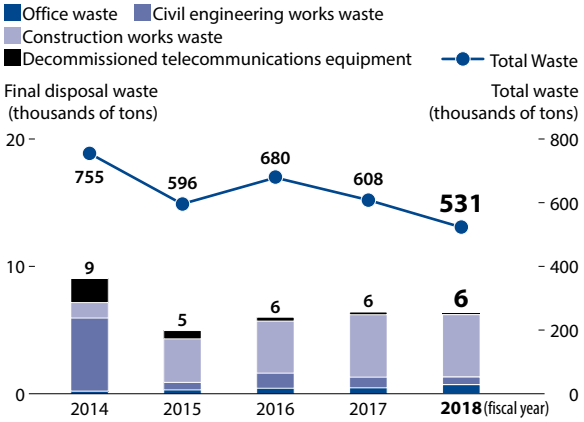


Waste Discharged by NTT Group

Results of Recycling, Waste Reduction and Final Disposal

Recycled decommissioned telecommunications equipment	Recycled construction works waste	Recycled civil engineering works waste	Recycled office waste	Others	Amount of waste reduced by incineration	Amount of final disposal waste
220 thousand t	133 thousand t	129 thousand t	33 thousand t	8 thousand t	1 thousand t	6 thousand t
Recycling				524 thousand t		

Waste and Final Disposal Waste

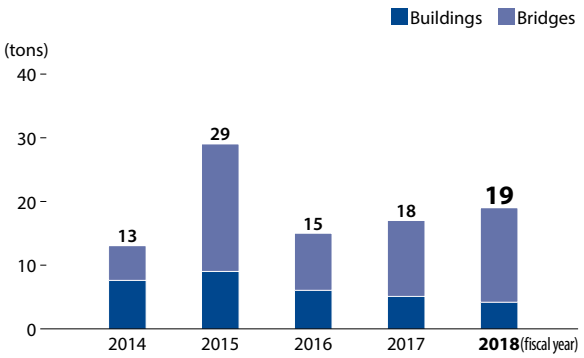


Hazardous Waste

For NTT Group operations, hazardous waste as defined by law applies to asbestos contained in waste generated from construction work on relay stations, 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 export such waste. 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.

In fiscal 2018, the asbestos and other wastes generated from NTT Group's businesses (buildings and bridges) totaled 19 tons, and were disposed of properly as specially-controlled industrial waste. Industrial waste containing asbestos was also disposed of properly as industrial waste.

Asbestos Removed from NTT Group Facilities



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 2,400 docomo shops throughout Japan, and through various events. In fiscal 2018, we collected about 5.9 million* mobile phones, bringing our cumulative total to 106.7 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 is taking part in the Making medals from urban mines! "Everyone's Medal" Project.

* 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

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 26.6 billion m³*, while NTT Group's consumption of tap water, wastewater, recycled wastewater and rainwater totaled 12.59 million m³. Even if tap water accounted for all of the water consumed by NTT Group, this would be only about 0.05% of the total for all of Japan (less than 0.02% if agricultural water is included). 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.

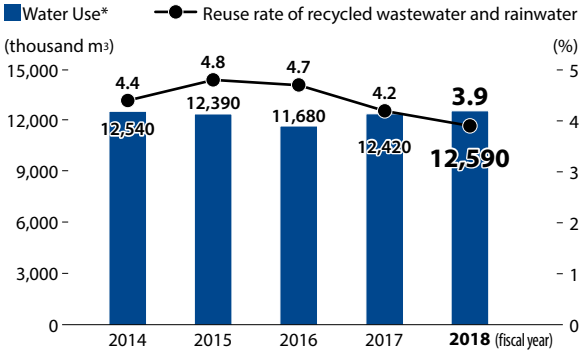
NTT Group reduces its consumption of tap water by using recycled wastewater and rainwater.

Research centers where we use chemical substances in our research activities implement individual measures against leakages of chemical substances into wastewater. The Atsugi R&D Center discharged wastewater totaling 66 thousand m³ into the Sagami River area and Sagami Bay in fiscal 2018. We monitor the quality of domestic and industrial wastewater and have confirmed that the quality of wastewater is within our voluntary standards, which are half of the 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 m³ per year (domestic and commercial use of water: approximately 15.1 billion m³; water for industrial use: approximately 11.5 billion m³; water for agricultural use: approximately 53.9 billion m³).

Use of Water Resources



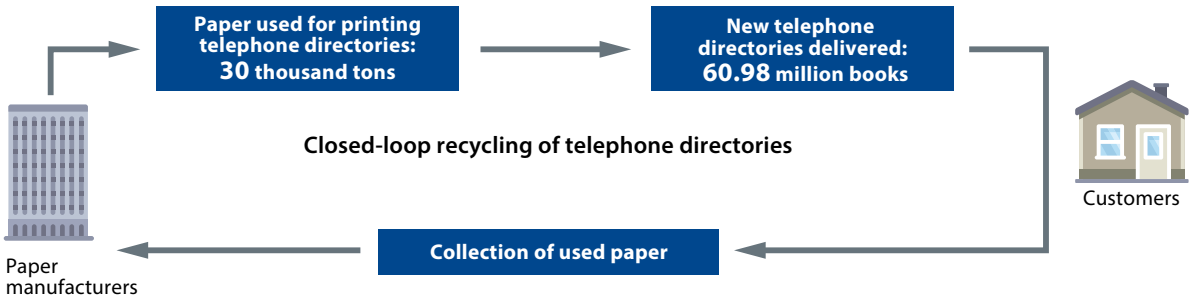
* Water Use is total of consumption of tap water, wastewater, recycled wastewater and rainwater.

Paper Management and Recycling

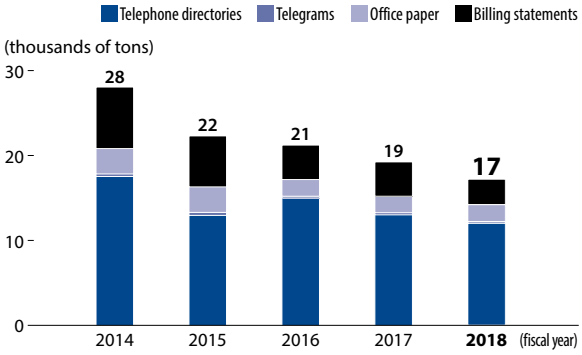
Paper consumption of NTT Group in fiscal 2018 was 39 thousand tons. As for telephone directories, which account for more than 70% of our paper consumption, we established a closed-loop recycling system in 1999 to collect old directories and recycle them to produce new ones. We undertake numerical management 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.

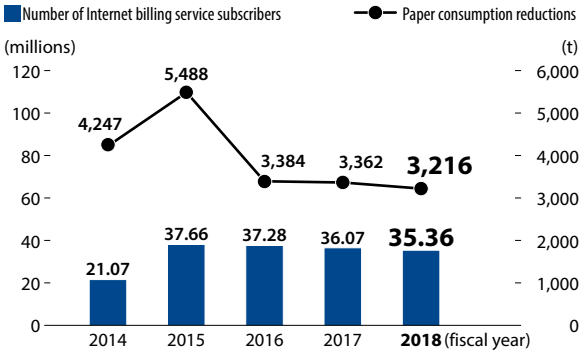
Closed-loop Recycling of Telephone Directories



Virgin Pulp Consumption



Paper Consumption Reductions from NTT Internet Billing Services



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.

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

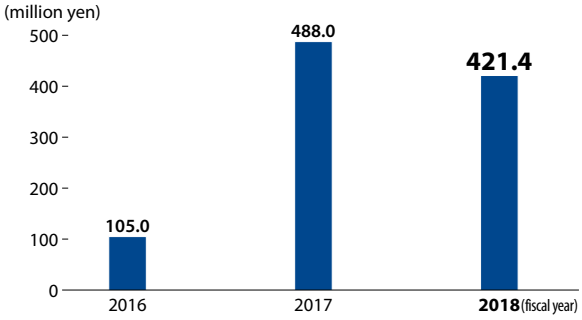
Activities That Contribute to Preservation of the Ecosystem

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.

Expenditures on Biodiversity Preservation Projects



Ensure Reliable Communications

We provide reliable and disaster-resistant ICT services while protecting personal information and maintaining information system security.

INDEX

085 Reinforcing Information Security

092 Personal Information Protection

094 Ensuring Stable and Reliable Communications Services

098 Safety-Related Legal Compliance and Telecommunications User Etiquette

Reinforcing Information Security CSR Priority Activity

Relevant GRI Standards

- 102-12,18
- 103-1,2
- 203-2
- 418-1

Relevant SDGs

Policies and Concepts

The importance of information security grows each year as people seek to ensure the safety of Internet transactions and prevent leaks of confidential information. As an operator of telecommunications infrastructure, NTT Group is charged with the responsibility of combating the ever more sophisticated and increasing threats to information security in order to protect customers' information assets.

NTT Group has positioned Global Cloud Services as the cornerstone of its business operations in the medium-term management strategy that we established in 2015, and we realize the need to provide an additional degree of security in managing customers' information assets through networks. It is no less important to prepare against sophisticated large-scale cyber attacks on major international events, and NTT Group is expected to demonstrate its true value in this area.

If there is a leakage of personal information or other confidential information or improper handling of such information, NTT Group's trustworthiness and corporate image could be damaged, resulting in negative impacts on our businesses, including loss of subscribers or access to designated competitive bidding.

As one of the key companies shouldering the information communication industry, NTT Group will contribute to the sound development and transformation of society while ensuring information security.

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.

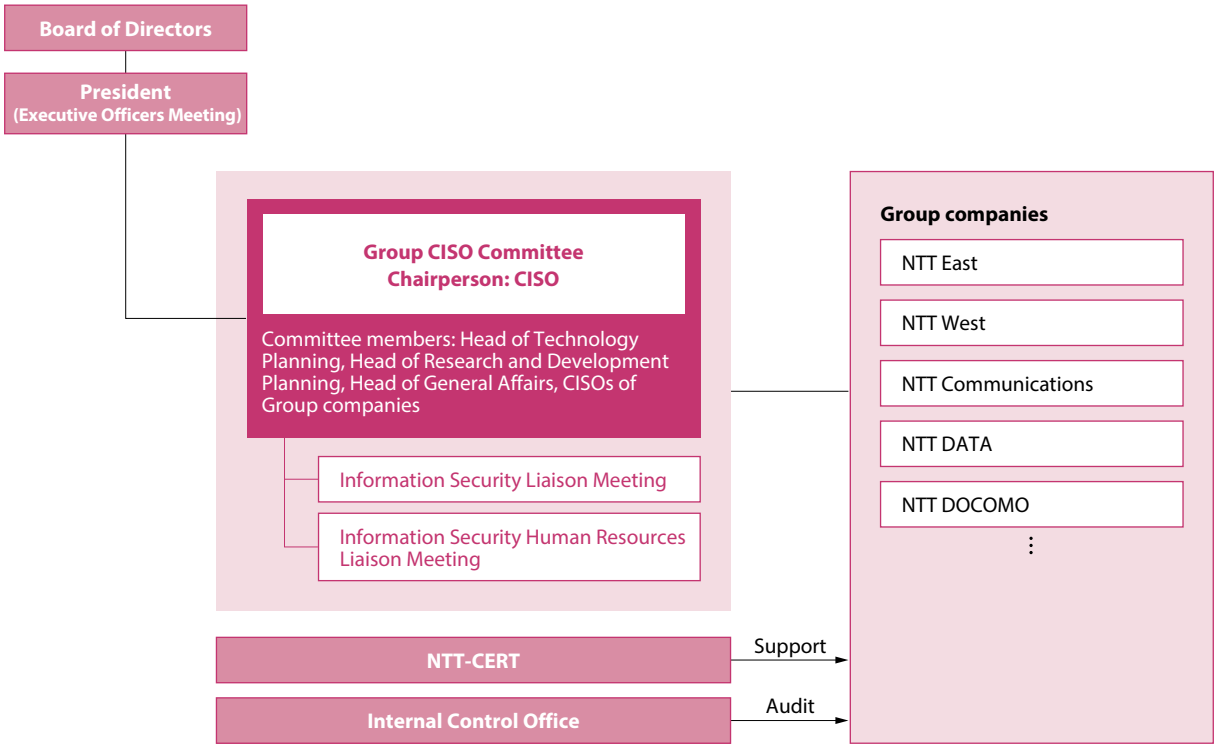
NTT Group's Information Security Policy WEB http://www.ntt.co.jp/g-policy/ (Japanese only)

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.

In particular, we are focusing on training security experts (see page 88) as the key to reinforcing security as well as organizing and pursuing educational programs throughout the Group. We are contributing to the provision of safe and secure services by developing technologies and services that ensure information security and by setting up NTT-CERT to implement preventive and follow-up support on security incidents, as components of the identification, defense, detection, response, and restoration measures necessary for multi-layered defense against cyber attacks.

NTT Group Organization for Information Security Management



Main Initiatives

Management of CSIRT

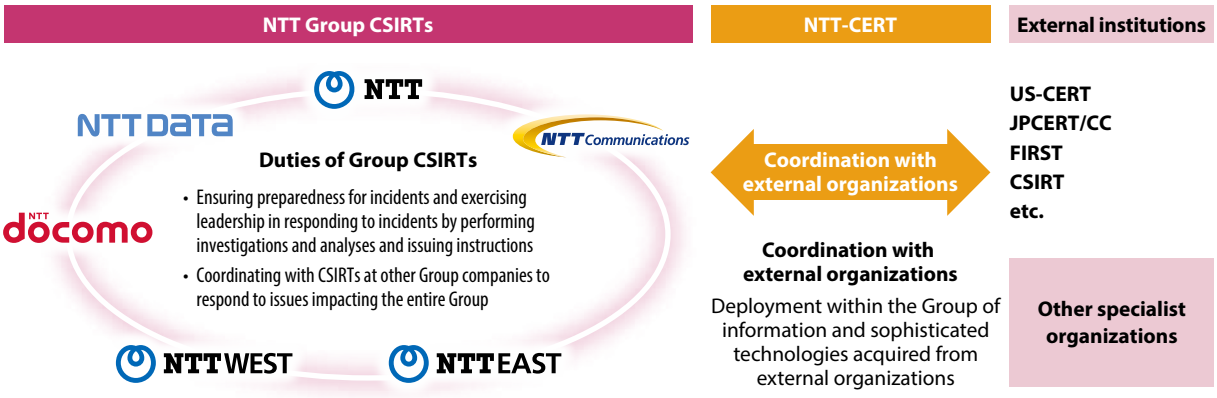
NTT Group established NTT-CERT*1 in 2004 to function as a computer security incident response team (CSIRT). This team collects information regarding security incidents associated with the Group. It then offers support for addressing these incidents, formulates measures to prevent recurrence, develops 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: http://www.nca.gr.jp/ NTT-CERT founded the Nippon CSIRT Association

NTT Group's CSIRT Activity



Training Security Experts

Threats to information security are becoming increasingly sophisticated and diverse, making damage from cyber-attacks and information leaks a public concern. At the same time, the advance of the Internet of Things (IoT) is driving dramatic growth in the number of devices that connect to the Internet and in the number of targets for which security must be ensured. At the same time, there is said to be a shortage of information security engineers in companies both in Japan and overseas.

In this context, NTT Group is working to enhance its staff of security personnel. Believing that such efforts are also necessary at the national level, NTT Group is contributing to the training of security personnel across Japan in cooperation with the government, other companies, and educational institutions.

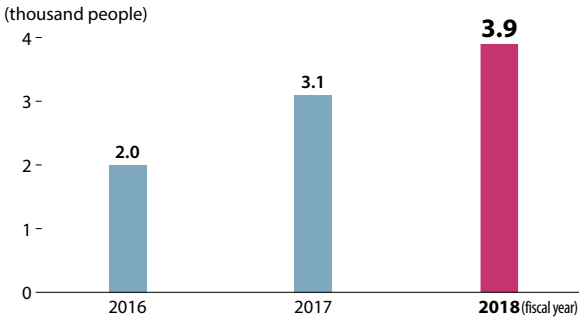
Training Security Experts in NTT Group

As a measure to enhance its security personnel development, NTT Group has set the goal of expanding its staff of security experts in Japan by the fiscal year ending March 31, 2021. Meanwhile, Group companies have implemented human resource development measures based on the types and levels of security personnel.

We will continue to enhance our range of ever more practical development programs to increase the number of intermediate and advanced personnel, who are core to our security field operations.

NTT also conducts ongoing training for raising awareness about information security among its employees. This includes security training via e-learning and targeted email attack drills for general employees and security training for newly appointed managers. Group companies, too, conduct various forms of information security training.

Number of security experts



* Scope of data: C (see page 3)

NTT Group's Security Personnel Hierarchy

		Title	Job classification		
			Security management consulting	Security operation	Security development
Level	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		

Training of Security Experts in Japan

To resolve Japan's shortage of cyber security-related experts and their skills, NTT Group undertakes a variety of initiatives to contribute to the training of security experts in the country. These include human resources training that cuts across the industry, the establishment of an endowed course at Waseda University, and participation in Security Camp Committee*1 and ICT-ISAC Japan*2.

We operate the Cross-industrial Cybersecurity Human Resource Development Committee*3 in cooperation with companies and industries that are involved in key infrastructure. Since the committee's launch in June 2015, we have held gatherings regularly, promoted the sharing of information based on a nurtured circle of trust, and released online reports on topics including a vision for security management personnel*4. In addition, we have held gatherings for managers in participating companies and invited companies to improve managers' understanding of cyber security, thereby accelerating industry-led security measures.

To provide opportunities for youth in Japan to learn advanced security technologies, and to contribute to the expansion of security experts in the next generation, we established a Cyber-attack and Cyber-defense Technologies course at Waseda University and support the national meetings of the Security Camp. We also take part in ICT-ISAC Japan, an organization for the sharing and analysis of information concerning cyber security throughout the field of information and communications technology (ICT). We engage in activities that contribute to the formation of an ICT society that is safe in terms of cyber security, such as our assistance for an open seminar in March 2018 on the theme "ICT Risks and Responses in the IoT Era."

*1 Security Camp Committee https://www.security-camp.or.jp/
*2 ICT-ISAC Japan: A general incorporated association established for the sharing and analysis of information related to cyber security throughout the ICT field.
*3 Cross-industrial Cybersecurity Human Resource Development Committee http://cyber-risk.or.jp/
*4 Security management personnel: Human resources who share managerial knowledge and expert knowledge of cyber attacks, network infrastructure, etc. and who support management while leading related departments.

Development of Information Security Technologies and Services

NTT Group addresses security risks that are growing in sophistication and gravity by developing diverse technologies and services related to security, such as research on encryption technology for protecting information and development of services for supporting measures against cyber attacks, thereby contributing to the realization of safe and secure communications.

An example of our activity is the discovery by NTT Secure Platform Laboratory of the threat called Silhouette. When users of social web services* (SWSs) visit websites operated by malicious third parties, Silhouette exposes the users' SWS account names to the risk of identification, creating potential for abuse of privacy or misuse in online fraud. NTT Secure Platform Laboratory quickly discovered numerous SWSs affected by Silhouette.

The laboratory also shares information about Silhouette with potentially affected browser vendors and service operators before damage occurs, and cooperates with countermeasures taken by Twitter and by web browsers including Microsoft Edge and Mozilla Firefox. This action disables the ability of the third parties to identify account names through the threat, and facilitates safer use of the Internet.

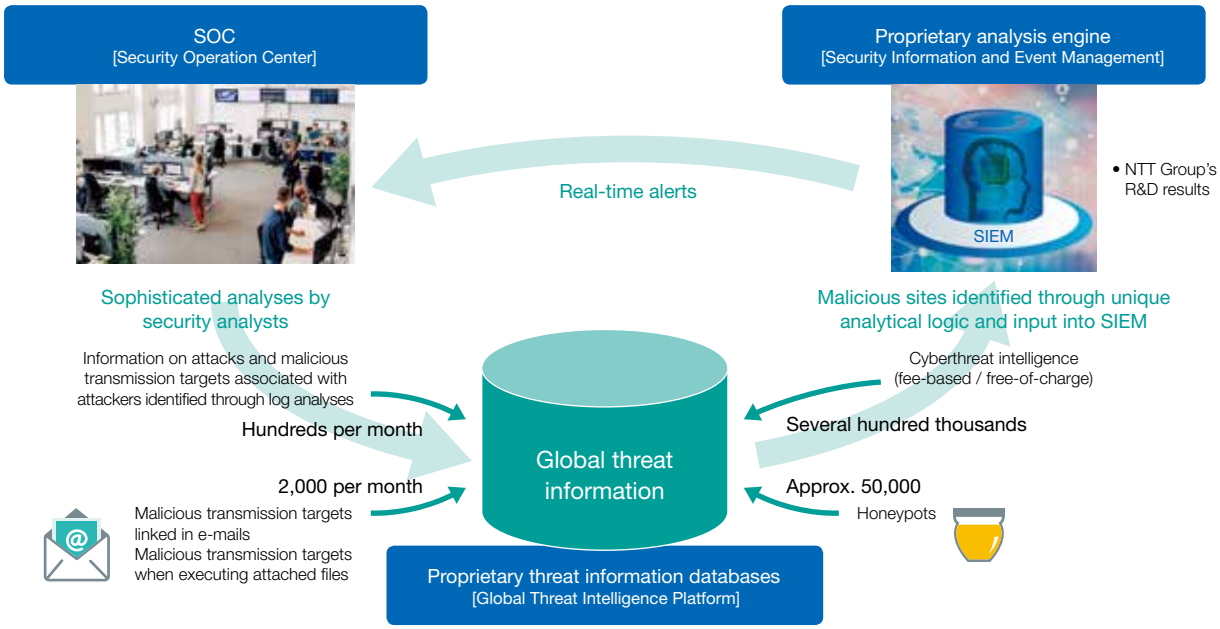
NTT Group will continue striving to provide robust services, focusing on research and development of information security technologies that promote safe and secure use of the Internet.

* Social web services: Web services built around user-posted content and communication among users, including social media services and video sharing sites.

Initiatives for Supporting Customers in Reinforcing Information Security

Development of Security Services Operations through NTT Security Corporation

NTT Security functions as NTT Group's center of excellence for cybersecurity by coordinating with Group companies and offering multifaceted information security support for customers' digital transformations through consulting and other services. The information gained through daily security operations around the world and the information collected through so-called honeypot decoy systems is integrated and utilized via our proprietary threat information databases. In addition, NTT Security is able to provide sophisticated cybersecurity threat detection and response services 24 hours a day, 365 days a year by taking advantage of its advanced, proprietary Security Information & Event Management (SIEM) analysis engine, which incorporates the technologies developed at research facilities, and its highly skilled security analysts. Furthermore, our sophisticated managed security services are supplied around the world and operated efficiently through an integrated global service platform. With 10 security operation centers staffed by security analysts in locations across the globe, NTT Security provides services that are flexibly adjusted to the characteristics of each region.



Cutting-Edge Solution Case Study: Industrial Control System Security Solutions

NTT Group has begun providing cutting-edge security solutions that are compatible with industrial control systems and IoT technologies, in response to the rising threats to cybersecurity pertaining to important infrastructure, factories, plants, and building automation systems spurred by the spread of the IoT. Looking ahead, we will assemble dedicated teams for supplying industrial control system security solutions around the world and develop structures that allow for the integrated provision of offerings spanning from security assessments to managed security services as we seek to address customers' security issues.

Personal Information Protection CSR Priority Activity

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 have formulated specific policies for protecting the personal information of customers and shareholders and policies for protecting specific personal information required by the introduction of Japan's Social Security and Tax Number System. These policies are open to the public on our corporate website. 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.

NTT also discloses the following policies concerning protection of personal information.

Policy on Protecting Personal Information

Policy on Protecting Personal Information of Customers WEB http://www.ntt.co.jp/kojinjo/okyaku.html (Japanese only)

Policy on Protecting Personal Information of Shareholders WEB http://www.ntt.co.jp/kojinjo/kabu.html (Japanese only)

Policy on Protecting Specific Personal Information of Business Partners WEB http://www.ntt.co.jp/kojinjo/okyaku-m.html (Japanese only)

Policy on Protecting Specific Personal Information of Shareholders WEB http://www.ntt.co.jp/kojinjo/kabu-m.html (Japanese only)

Main Initiatives

The Response of NTT Group

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.

Nippon Telegraph and Telephone Corporation Customer Contact Point on Personal Information

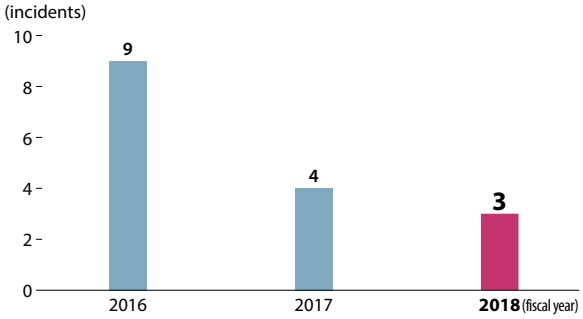
Tel: 81-3-3201-1198 (Operating hours: 10:00–12:00, 13:00–17:00, excluding weekends, national holidays and New Year holidays)

WEB http://www.ntt.co.jp/kojinjo/okyaku.html (Japanese only)

Track Record on Complaints, Leaks and Other Issues Related to Personal Information

Each company manages the inquiries, consultations and complaints received through their contact points. In fiscal 2018, NTT received no inquiries on customer personal information at its contact point and received no administrative guidance from the Ministry of Internal Affairs and Communications or other related government agencies.

Number of incidents of personal information leaks



* Scope of data: D (see page 3)

Ensuring Stable and Reliable Communications Services

CSR Priority Activity

Relevant GRI Standards

- 103-1,2
- 203-1
- 417-1

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

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

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.)

Prompt restoration of communications services

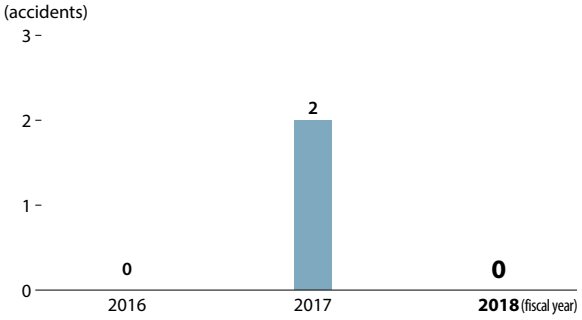
Early restoration of services by utilizing disaster countermeasure equipment, procurement of materials, equipment, and manpower for restoration purposes, etc.

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

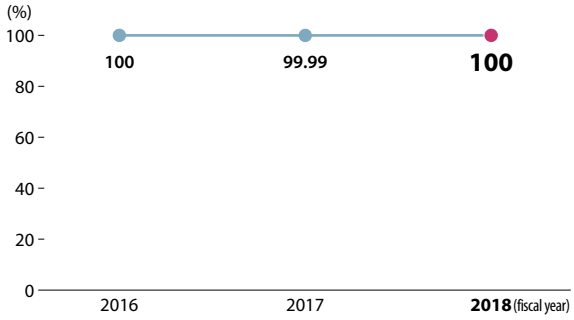
Organization for Implementation

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 trainings 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 make the necessary emergency and critical communications as designated public institutions prescribed in the Basic Act on Disaster Control Measures.

Number of major accidents *1



Service stability *2



* Scope of data: The four communications companies: NTT East, NTT West, NTT Communications, and NTT DOCOMO.

*1 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:
Up to March 2015
- At least two continuous hours affecting at least 30,000 users April 2015 onward
- 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 1million users

*2 [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%

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 disaster areas, and providing means to confirm the safety of people in the areas hit by a disaster.

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 WEB http://www.ntt-east.co.jp/info-st/saigai/index.html

Free charge public phone policy for areas covered by NTT West WEB http://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.

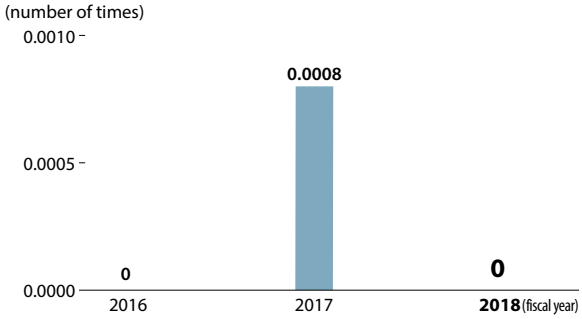
Strengthening Monitoring Processes

NTT East, NTT West, NTT Communications and NTT DOCOMO monitor their communications networks on a 24/7 basis from their operation centers.

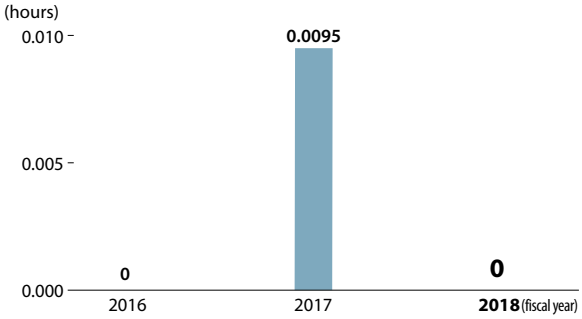
On discovery of a failure or abnormality caused by a disaster or some other contingency, they work to restore service by switching to standby equipment and other means through remote operations, and dispatch maintenance personnel if on-site repairs are required. Depending on the scale of the failure, the Disaster Countermeasures Office or Risk Management Office of the relevant Group companies takes appropriate action. Clear and simple failure information is promptly posted on company websites, and reports are also submitted to the central government.

We disclose communications failures and other network interruptions on our website and also report these to the Ministry of Internal Affairs and Communications, the supervising ministry, in accordance with the Guidelines Concerning Application of Laws and Ordinances Related to the Telecommunications Business Act in Conjunction with Telecommunications Accidents.

Average Frequency of Network Interruptions*



Average Hours of Network Interruptions*



* Calculated according to definitions for disclosure metrics by the US Sustainability Accounting Standards Board (SASB)

Safety-Related Legal Compliance and Telecommunications User Etiquette

Relevant GRI Standards

- 413-1
- 417-1

Relevant SDGs

Conducting Awareness-Building Activities for Children as the Bearers of our Future

Every year since 2006 in major cities around Japan, NTT, NTT East, NTT West, NTT Communications, NTT DOCOMO and NTT DATA have jointly held NTT Dream Kids Net Town. In this summer vacation event, elementary school students (grades three to six) have fun while learning the latest news concerning ICT as well as rules and etiquette for using information communications services.

In addition, we use the Viscuit visual programming language developed by NTT laboratories in our NTT Dream Kids Programming Classroom to give children hands-on experience with telecommunications technologies. We provide opportunities for this interaction by exhibiting in summer vacation events around the country.

Scenes from events in 2018

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 under 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 WEB https://www.nttdocomo.co.jp/corporate/csr/network/index.html (Japanese only)

Unite the Energies of Team NTT

As Team NTT, we will conduct our business with the highest ethical standards and with the awareness of human rights. And we will contribute to our society as a united group by creating comfortable workplaces respecting diversity.

INDEX

100 Promoting Diversity
107 Respect for Human Rights
111 Reinforcing Value Chain Management
115 Promoting the Safety, Health, and Welfare of Employees
120 Creating Attractive Workplaces
126 Human Resource Development
129 Promoting a United Group Effort on Social Contribution Activities

Promoting Diversity CSR Priority Activities

Relevant GRI Standards

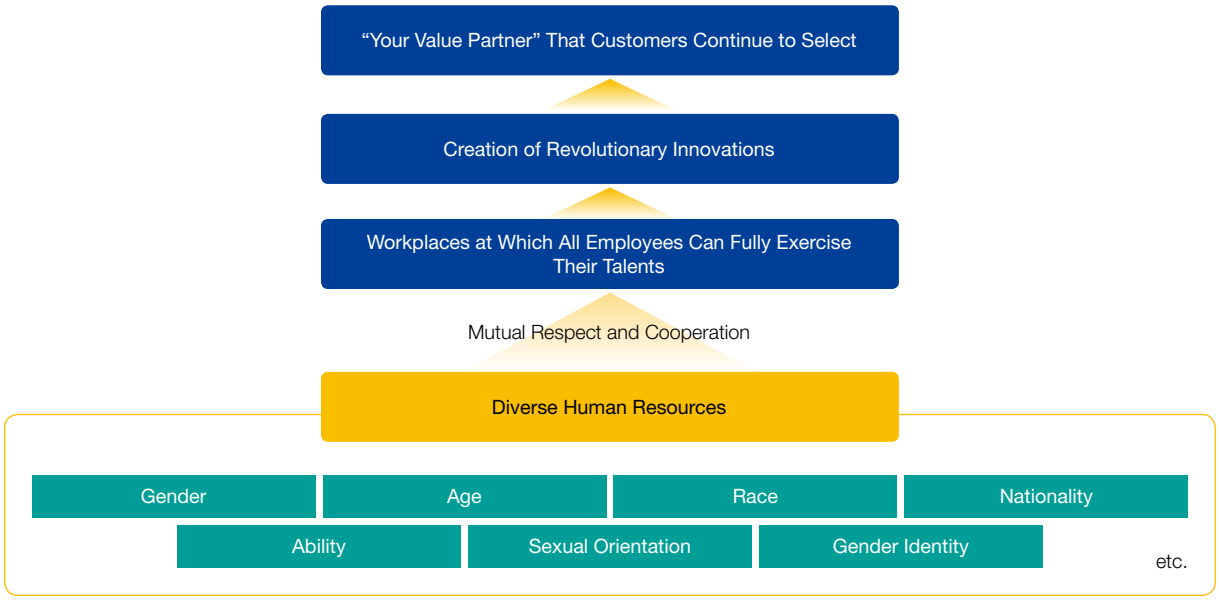
- 102-8
- 103-1,2
- 401-1,2
- 404-2
- 405-1

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 seeks to generate innovation and strengthen its corporate capabilities by appreciating and effectively deploying its diverse human resources. We recognize diversity and inclusion as key strategies of our management and have always striven to create diverse workplaces in which people can realize their full potential irrespective of sex, age, race, nationality, disability, sexual orientation, gender identity, or other factors. In October 2007, NTT established the Diversity Management Office to bolster workplace diversity efforts 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 will 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.

Data

Number of Managers and Ratio of Female Managers

	Fiscal 2016	Fiscal 2017	Fiscal 2018
Total managers	26,050	25,190	26,110
Total male managers	25,000	24,000	24,770
Total female managers	1,050	1,190	1,340
Ratio of female managers (%)	4.0	4.6	5.1

Scope of data: C (see page 3)
Section managers and above

Employment in NTT Group

		Fiscal 2016	Fiscal 2017	Fiscal 2018
Total number of employees*1		241,000	275,000	282,550
Employees by region	Domestic	160,000	164,000	166,550
	Overseas	81,000	111,000	116,000
Ratio of workforce outside of Japan		33.6%	40.3%	41.0%
Number of employees by gender*2	Men	101,000	93,790	92,000
	Women	17,000	16,220	17,200
Ratio of female employees*2		14.4%	14.7%	15.8%
Average age*3		41.0	41.1	41.3
Average years of employment*3		16.7	16.7	16.8
Job separation rate*4 (including mandatory retirement)	Job separation rate among all employees	7.9%	7.0%	6.4%
	Job separation rate due to personal reasons	2.2%	2.0%	3.0%

*1 Scope of data: E (see page 3)
*2 Scope of data: C (see page 3)
*3 Scope of data: NTT alone
*4 Scope of data: B (see page 3)

Main Initiatives

Creating Workplaces Where Everyone Can Realize Their Full Potential

The 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.

Furthermore, we hold a twice-yearly diversity promotion conference to enable individual Group companies to share their activities with the whole NTT Group and monitor female manager ratios, the status of hiring people with disabilities, and other diversity management parameters.

In December 2013, we announced a plan to double the ratio of our female managers by intensifying our efforts to support the career development of female employees in 38 NTT Group companies.*

* Scope of data: D (59 companies at time of plan formulation, currently 38 companies) (see page 3)

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.

The Diversity Management Office and Group company diversity promotion staff share information on developing female leaders, supporting the balancing of work with childrearing, work style reforms, and other common issues, while implementing activities tuned to the needs of individual companies. They also promote the establishment of daycare centers at our business sites and conduct training for employees who are taking childcare leave or preparing to return to work, as well as various types of training to promote the understanding of diversity. To put the ideas and values of a greater diversity of people to use in our management and services, we aim to double the ratio of women at section chief level and above in Japan from the 2.9% of fiscal 2014 to 6.0% by fiscal 2021.

In fiscal 2018, women occupied 5.1% of managerial positions and comprised 34.1% of new graduates joining NTT Group. We published these figures on the website launched by the Cabinet Office Gender Equality Bureau in January 2014 for companies to declare their achievements in promoting female leadership. Furthermore, NTT East, NTT West, NTT Communications, and NTT DATA received the highest rating (Rank 3) in the Eruboshi certification mark program for recognizing excellent companies under the Act to Promote the Active Participation of Women in the Workplace, which came into effect in April 2016.

Holding training and forums jointly within NTT Group

NTT Group companies also hold joint forums and training sessions to promote networking and motivate people to nurture successors. These forums and training sessions provide female employees from different Group companies with a valuable opportunity to exchange views, share concerns and increase motivation.

New graduate hiring by Group companies

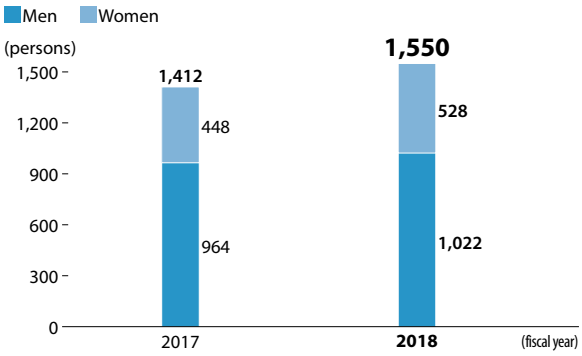
The companies of NTT Group strive to hire new graduates. In fiscal 2018, major NTT Group Companies in Japan hired a total of approximately 1, 550 new graduates, with the ratio of female hires exceeding 30% of the total.

Also, in fiscal 2017, we launched the Play to Win website for deepening student understanding of the businesses pursued by each NTT company.

NTT Group Information for Students Play to Win

WEB http://action.ntt/ (Japanese only)

Number of New Graduate Hires



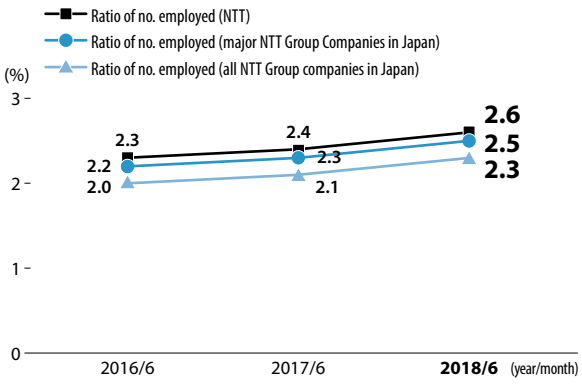
Notes: 1. Scope of data: major NTT Group Companies in Japan (see page 3)
2. Figures exclude new hires for medical institutions, such as hospitals

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.

Number of Employees with Disabilities



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.

Employees with disabilities participate in operations within NTT Group's value chain, including facilities-related operations at NTT East.

Special Purpose Subsidiaries within NTT Group (as of June 30, 2018)

Company	Status of employment	Company information and businesses
NTT CLARUTY CORPORATION	Number of employees: 381 (including loaned employees) Employees with disabilities: 287	Special-purpose subsidiary of NTT Group Main businesses: Web accessibility diagnosis, operation of the "Yu Yu Yu" portal site that provides information from the standpoint of persons with disabilities, consulting on employment of persons with disabilities, training to increase understanding of persons with disabilities, manufacture of handmade paper products from recycled paper, office massage services, production of name cards, work contracted from NTT Group
NTT West Lucent Corporation	Number of employees: 317 (including loaned employees) Employees with disabilities: 269	Special-purpose subsidiary of NTT West Group Main businesses: Portal site (Dream Arc) operational services, web accessibility diagnosis, sales-related work such as subscription recommendation work for NTT West maintenance/support services, facilities-related work such as data tabulation work for electricity usage in NTT West buildings, support services for shared work, consulting and other shared work
NTT DATA DAICHI Corporation	Number of employees: 212 (including loaned employees) Employees with disabilities: 165	Special-purpose subsidiary of NTT DATA Main businesses: Website creation, web accessibility diagnosis, business card production, basic printing and binding using on-demand printing machines, rental greenery maintenance, used paper collection, massage services within NTT DATA, provision of work for pastures, farms, etc., product processing work
DOCOMO PlusHearty, Inc.	Number of employees: 133 (including loaned employees) Employees with disabilities: 87	Special-purpose subsidiary of NTT DOCOMO Group Main businesses: Building janitorial services, employee training concerning persons with disabilities, support for hiring and retaining of persons with disabilities

Main measures to support employees' self-reliance

- Remove obstacles/barriers, such as steps and other differences in floor levels in offices and provide passageways where two wheelchairs can easily pass by one another
- Use carpet with materials and colors that serve as a landmark for employees with visual impairments
- Install flashlights that convey emergency broadcasts to employees with visual impairments
- Introduce special leave system for employees with disabilities that need to visit the hospital regularly
- Encourage participation in social activities (participation in community clean up activity held monthly) and foster a mindset to give back to society
- Introduce development programs for employees with intellectual disabilities and an original exercise and yoga program intended to reduce stress and anxiety

Employment of Non-Japanese

To address market changes and diversifying customer needs, and to continue being a Value Partner selected by customers, we are endeavoring to enhance our innovation capabilities and corporate strengths by accepting and making the most of diverse people. We position diversity management as an important management strategy, and actively seek to create workplaces where diverse human resources can realize their full potential, regardless of their race or nationality.

When we hire foreigners or promote foreign employees to higher positions, we apply the same conditions to them as we do to Japanese employees. In both cases, we allow foreign candidates or employees to be interviewed, or give presentations, in English. Of the 1, 694 people hired by the major NTT Group Companies in Japan during fiscal 2018, 57 (approximately 3.4%) were non-Japanese.

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.

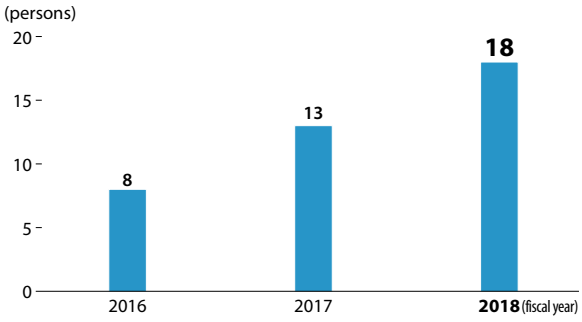
Many retired employees have used this program, with 18,000 using it in fiscal 2018 alone.

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 spouse, 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.

Number of Re-employed Members



Scope of data: B (see page 3)

Consideration for LGBT and Other Gender Minorities

With regard to diversity management, we have set up diversity promotion offices and other dedicated organizations in major NTT Group companies since 2007. We have begun to pursue activities related to LGBT and other gender minorities in view of expanding social awareness.

To realize an organization and a society in which everyone can live and work as themselves regardless of sexual orientation or gender identity, and to recognize differences as a value and promote the creation of workplaces that let diverse team members maximize their potential, in April 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 April 2018, we extended all allowances, benefit programs, and other programs involving spouses and families to same-sex partners as well.

Examples of programs for which application was extended in April 2018

- Leave-related programs
  In addition to marriage leave and bereavement leave, leaves related to the partner's childbirth and childrearing, leaves related to nursing and nursing care for partners and their families, etc.
- Allowances-related programs
  Dependent allowances, unaccompanied assignment allowances, etc.
- Benefits-related programs
  In addition to congratulatory/condolence payments and sending of congratulatory/condolence telegrams, residence in company housing, etc.

As a result of such initiatives, NTT was recognized for the second straight year with the highest-level Gold status in PRIDE Index 2017, an index established by the volunteer organization called work with Pride (wwP) to evaluate corporate activities for minorities and the LGBT community. In addition, 16 NTT Group companies also received this designation.

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 December 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 CSR Priority Activity

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

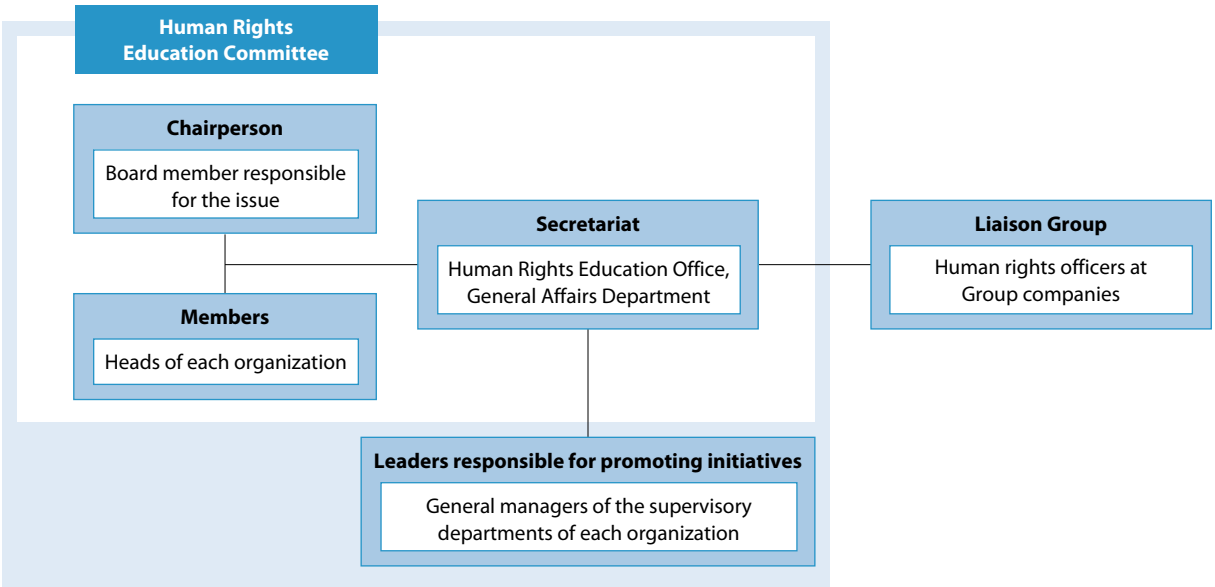
Policies and Concepts

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.

Organization for Implementation

We believe it is important for the entire NTT Group to instill the understanding of respect for human rights and undertake business activities with a full awareness of human rights. Accordingly, we established the Human Rights Education Committee, headed by the board member responsible for the issue. Under 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, and establishing and operating contact points for human rights.

Human Rights Management System



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.

*1 "We" means the 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 ISO26000 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.

Main Initiatives

Due Diligence

NTT Group established its Human Rights Charter in 2014 as a policy for defining its commitment to respecting human rights. In accordance with this policy, we examine human rights due diligence processes as well as introduce and implement them in stages.

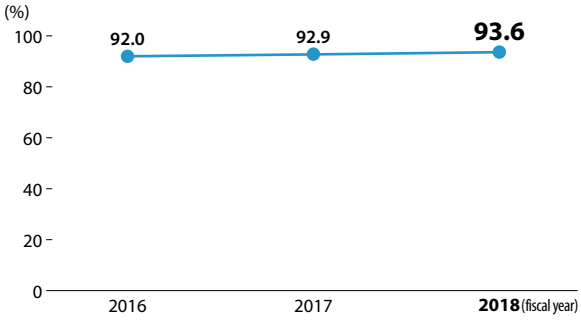
In fiscal 2016, we conducted a human rights risk assessment covering the business areas pursued by Group companies overseas by focusing on BPO and data centers and on China and India as countries where we operate in order to understand the social conditions directly facing NTT Group's businesses and to determine what type of human rights issues are actually present. In fiscal 2017, based on these results, we launched the human rights management survey based on the philosophy of the Guiding Principles on Business and Human Rights as part of our efforts to create a mechanism for preventing human rights violations. This survey helped us to identify priority human rights issues that should be addressed by the Group companies covered in the survey. It also shed light on which Group companies have a human rights policy and human rights management system in place. The results identified priority human rights issues for 250 of the 258 companies surveyed, and indicated that 248 companies are now working on specific initiatives to raise awareness about these human rights issues.

In fiscal 2018, an external expert survey (potential human rights risk assessment) was conducted to verify results obtained from in-house surveys. We identified 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 the country" and "severity of human rights risks arising in the business," and recognized that appropriate working conditions for workers in the Asia area (India, Thailand, Singapore, Japan), the privacy of consumers, the freedom of expression, and the rights of minorities in the community are major human rights issues. Going forward, we will look into priority issues and remedies through engagement with stakeholders and experts in human rights.

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.

Rate of Human Rights Training and Attendance



Scope of data: D (See page 3)

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

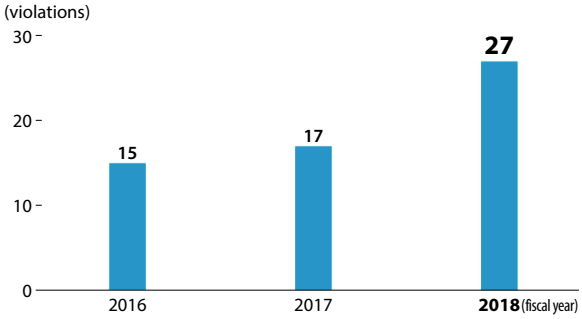
We provide internal and external contact points that employees can consult on various concerns related to human rights.

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.

Number of Confirmed Cases of Human Rights Violations



*1 Scope of data: D (See page 3)
*2 Violations involving human rights refer to incidents that originated in "power harassment" or other infringements of rights and that resulted in disciplinary action.

Reinforcing Value Chain Management CSR Priority Activity

Relevant GRI Standards

- 102-9
- 103-1,2
- 308-1,2
- 407-1
- 408-1
- 409-1
- 412-3
- 414-1,2

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 cloud services under the medium-term management strategy "Towards the Next Stage 2.0" that we established in 2015. We expect our value chain to expand further globally, requiring us to enhance our value chain management initiatives.

Organization for Implementation

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 December 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 WEB http://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 December 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 WEB website http://www.ntt.co.jp/ontime/e/index.html

NTT Guidelines for CSR in Supply Chain WEB http://www.ntt.co.jp/ontime/e/img/pdf/supply_chainE2.pdf (PDF: 30 pages)

Requests to Suppliers on Environmental and Social Concerns

In July 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 March 2013 as a basic policy with respect to conflict minerals so as to fulfill its social responsibility in the area of procurement.

NTT Guidelines for Green Procurement WEB http://www.ntt.co.jp/ontime/e/img/pdf/green_e1.pdf

NTT Group Energy Efficiency Guidelines WEB http://www.ntt.co.jp/kankyo/e/management/img/energy/guidelinever7_e.pdf

Technical Requirements WEB http://www.ntt.co.jp/ontime/e/policy/tr/index.html

NTT Group's Approach to Conflict Minerals WEB http://www.ntt.co.jp/ontime/e/policy/conflict/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.

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. In our survey for fiscal 2018, we requested responses from 100% of targeted suppliers, and received responses from 99% of these.

In fiscal 2018, we provided feedback to all suppliers who cooperated in the survey. A total of six suppliers fell into the category of high sustainability risk suppliers in the written survey, but after verifying, we found that in actuality zero of these suppliers truly posed a high sustainability risk.

Notes:
Survey response requiring immediate attention: a survey response from a company that indicates it is likely the company is either not responding to legal requirements and social norms, or does not manage or understand its actual status or response to those requirements and norms

Survey response requiring cautionary attention: a survey response from a company that indicates the company has likely not fully prepared necessary systems and policies, although the company has not violated the law and regulations

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)

Supply Chain CSR Survey Results

		FY2016	FY2017	FY2018
Supply chain to major suppliers CSR written survey implementation rate and response rate	Implementation rate	100%	100%	100%
	Response rate	100%	100%	99%
Implementation rate of corrections by suppliers for which risks were recognized		100%	100%	100%
Number of recognized high-risk suppliers		0	0	0
Conflict mineral survey form response rate	Mobile phone products	90%	100%	100%
	Other products	90%	95%	95%

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. Seeking to obtain responses from 95% or more of the suppliers contacted, in fiscal 2018, we conducted a survey targeting 1,082 products from 169 suppliers. We received the desired level of responses, and identified zero products that were certain to involve armed groups. However, we identified 800 for which involvement was unclear, 145 products as having no involvement with armed groups, and 137 products that do not contain minerals and are exempt from reporting. 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, too, 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.

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.

Promoting the Safety, Health, and Welfare of Employees

CSR Priority Activity

Relevant GRI Standards

- 103-1,2
- 403-2,3,4

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.

Moreover, the revised Industrial Safety and Health Act of Japan, which became effective in December 2015, mandates companies to check "stress-related symptoms" of employees. Regulations related to mental health, including reduction of overwork, are also being reinforced. Given this, NTT Group is promoting health management for both the physical and mental well-being of our employees more than ever before as an important aspect of its management strategy.

Organization for Implementation

In addition to observing relevant laws and regulations such as Japan's Labor Standards Act and Industrial Safety and Health Act, and ensuring occupational safety and health, NTT Group has its own Safety Management Rules and Health Management Rules.

Under these rules, we have constructed occupational safety and health management systems at all of our workplaces, and have appointed staff including general safety and health managers and safety managers. Under these systems, we endeavor to create safe and comfortable workplaces by providing regular health checks and arranging workplace inspections by industrial physicians, and carry out various measures for maintaining and improving the health of our employees.

Main Initiatives

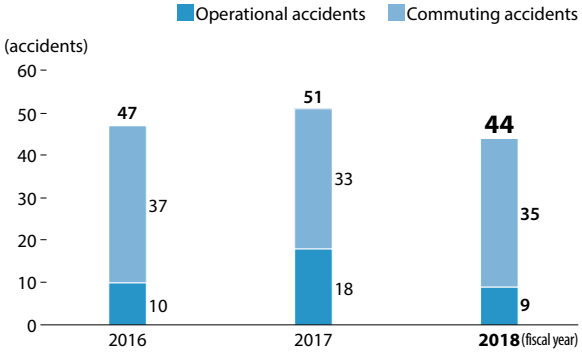
Achieving a Healthy and Safe Workplace Environment

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.

Occurrences of Industrial Accidents

NTT Group monitors occurrences of industrial accidents in its effort to create a secure workplace for employees.

Number of Industrial Accidents



*1 Figures exclude accidents that did not result in lost work as well as injuries caused by participation in sports.
*2 Scope of data: A (see page 3)

Activities to Eliminate Accidents

In fiscal 2018, 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 heavy equipment during building dismantling, 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, reaffirming previously established rules to prevent recurrence of accidents and displaying safety posters unified across NTT Group. In addition, to achieve a safe labor environment, we use sensing, AI, and other advanced technologies, and we will continue to investigate these technologies across the Group and engage in activities aimed at ensuring zero industrial accidents.

*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.

Instilling and Engraining Health Management Across the Entire NTT Group

The revised Industrial Safety and Health Act that took effect in December 2015 requires companies to perform stress checks and tightens regulations on mental health and reducing overwork. As a result, we are working on various activities, with health management underpinning the physical and mental health of employees positioned as a core pillar of our management strategy.

As part of our in-house system for supporting the improvement of employees' health, we have developed a number of mechanisms, including an Employee Assistance Program (EAP), a health management center, life plan leaves, and individualized shifts. We are now educating employees and providing training to them so that they can effectively utilize these systems.

In fiscal 2018, we set a specified health guidance completion rate as a priority activity item, and are working to reduce lifestyle-related diseases in collaboration with the NTT Health Insurance Union.

Maintaining and Improving the Health of Employees

NTT Group provides regular health checks for all employees and offers more extensive physical checkups for those employees who request them, in order to help employees maintain and improve their health. Furthermore, as ways to prevent lifestyle related diseases, we require all employees to receive a comprehensive physical checkup when they reach the age of 40 and we provide subsidies to defray the cost to employees using sports gyms.

Together with the NTT Health Insurance Union, we launched a health rewards point program for using pedometers, and introduced health recipes, as a way to improve employees' health. Additionally, business sites with a cafeteria prepare lunch menus with the help of a nutritionist, and certain business sites offer massage services for employees, who can use these during a break anytime they need.

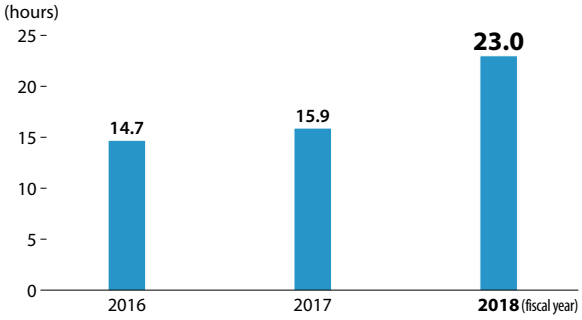
As a result of these activities, NTT was certified as part of the White 500 under the Health and Productivity Management Organization Recognition Program, which recognizes companies strategically working on health management of employees from a management point of view.

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.

Average Annual Overtime Hours



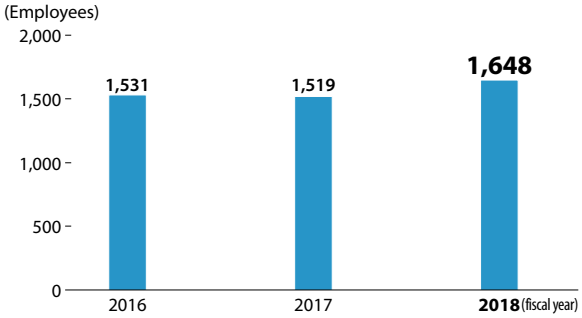
Scope of data: NTT alone

Mental Healthcare

To strengthen mental health management on an ongoing basis, NTT Group has set up contact points 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 and training is also held for balancing physical and mental health both at the time of joining the company and at ten years of service. In this manner, all employees are given access to regular training to raise awareness about mental health.

In fiscal 2018, as in the previous year, we conducted stress checks on all employees. The results of the questionnaire are shared with employees and department managers. Analyzing the buildup of stress for each department and employee will help us to improve mental health.

Number of Employees Taking Leave for Mental Health



Scope of data: A (see page 3)

Extensive Benefit Programs

NTT Group operates a comprehensive and option-style benefit program (cafeteria plan). Employees are given points that can be used for benefit menu items, ranging from property accumulation and life plans such as child-rearing, to the use of lodgings, amusement facilities and fitness programs. The program applies to approximately 125,000 employees at 92 NTT Group companies (as of April 2018).

We reviewed our benefit program in May 2018 due to employees' needs with regard to health, childcare, and nursing care changing along with changes in the environment in society and the diversification of lifestyles. With an emphasis on health policies, we adopted the NTT Benefit Package as the core menu of an attractive benefit program to improve motivation, encourage high performance, and stably secure human resources.

Initiatives Concerning Health, Safety, and Wellbeing

Initiative	Description
Information on stress management	All employees undergo stress checks and the results of these are provided to the employees and their organizations as feedback, and also used to analyze individuals and organizations with the aim of improving mental health management. Also, information regarding overtime hours worked is shared with employees and organizations, and when necessary, interviews are conducted with individuals working overtime. Initiatives such as the handing out of information booklets by EAP providers and the sharing of information regarding the usage of flextime and work-at-home systems are implemented to maintain and improve the mental and physical health of a diverse range of personnel. NTT Group will continue to review work systems to facilitate an even greater range of working styles that enable a balance of work and lifestyles with a view to establishing an environment that encourages highly-motivated, dynamic, and sustainable activity.
Stress management training	NTT Group provides mental health training for all employees. Additionally, line care training is held for line managers. Training covering physical and mental health is also held both at the time of joining the company and at ten years of service. Furthermore, employees are also appropriately notified and given training regarding in-house health-related systems, including EAP, a health management center, life plan leave, and individualized shifts.

Initiative		Description
Healthy work environments	- Ergonomic work environments	Private rooms and cubicles have been abolished in work areas, creating completely open-plan spaces that provide a sense of openness which vitalizes communication between workers and eases feelings of isolation and fatigue. The establishment of "magnet spaces" that concentrate community support (including desks for open meetings), operational support, and lifestyle support (snacks, stationery, multi-function printers, newspapers, magazines, etc.) functions are adding dynamism to exchanges between customers and employees and encouraging collaboration, thereby increasing satisfaction and feelings of accomplishment among employees.
	- Lighting	NTT has adopted a task-ambient lighting system that eliminates glare and uneven brightness, reducing employee eye fatigue. Ambient lighting comprises double LED light fittings (equivalent to 40W) with automatic light control functions that illuminate the space around each single two-seat work desk (3.2 m x 0.8 m) without producing glare, facilitating everyday work by ensuring the work desk surface has an illuminance of 500 lx. Also, each individual employee work space has an illumination system that can be turned on or off, so in situations where factors such as outside light creates uneven brightness, the employee can adjust their own lighting situation according to their personal preferences. Furthermore, for intricate tasks, nighttime VDT work and the like, task lighting systems installed at each seat enable employees to adjust their work environment by increasing the brightness of their own work space.
	- Noise	As a countermeasure to the noise produced by construction, work that exceeds the regulatory standard for designated construction work of 80 decibels is carried out on holidays or at night.
	- Indoor air quality	Indoor air conditions are measured to determine factors such as the density of carbon dioxide and carbon monoxide every two months, once in the morning and once in the afternoon. If these exceed standard levels, the cause is investigated and improvement measures are carried out. Also, following renewal work, a formaldehyde inspection is carried out within the first June-September period after work is completed.
	- Humidity	Indoor air conditions are measured in regard to humidity every two months, once in the morning and once in the afternoon. If it exceeds standard levels, the cause is investigated and improvement measures are carried out.
	- Temperature	Indoor air conditions are measured in regard to temperature every two months, once in the morning and once in the afternoon. If it exceeds standard levels, the cause is investigated and improvement measures are carried out.
Fitness-related facilities or subsidies for using external facilities		A selection-based benefit program is available to all employees. This selection includes a service that allows employees who wish to use external fitness facilities to do so at a lower price.
Health and nutrition		Regular health checks are provided for all employees and more extensive physical check-ups are offered to employees who request them. Employees receive a comprehensive physical check-up when they reach the age of 40 as a way to prevent lifestyle related diseases. • NTT Group strategically works on health management of employees from a management point of view and for that reason, it has acquired White 500 certification under the Health and Productivity Management Organization Recognition Program. • Health promotion methods using pedometers are being implemented in partnership with the NTT Health Insurance Union. The NTT Health Insurance Union also shares healthy recipes with employees. Business sites with cafeterias offer lunch options prepared with the help of a nutritionist, which are available to all employees. • Massage services are provided to office-based employees who are feeling fatigued and can be used during any break period.
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 for 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 for 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 selection-based 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 pedometer. 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.

Creating Attractive Workplaces CSR Priority Activity

Relevant GRI Standards

- 102-33,41
- 103-1,2
- 201-1
- 401-2,3
- 402-1
- 404-3
- 407-1

Relevant SDGs

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.

Organization for Implementation

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 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.

To attract, in the coming years, competent 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. Results of the survey conducted at Group companies in fiscal 2018 showed the level of employee satisfaction at 3.79 out of 5 points.

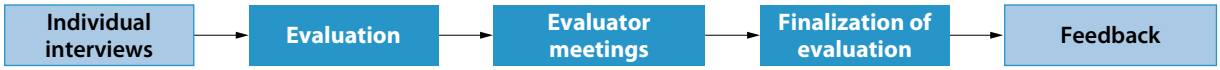
Fair Evaluation and Compensation

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. The evaluation system applies to 60% of NTT Group, including companies outside Japan.

Personnel Evaluation Cycle



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 alloted 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 evaluation subject 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 October 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.

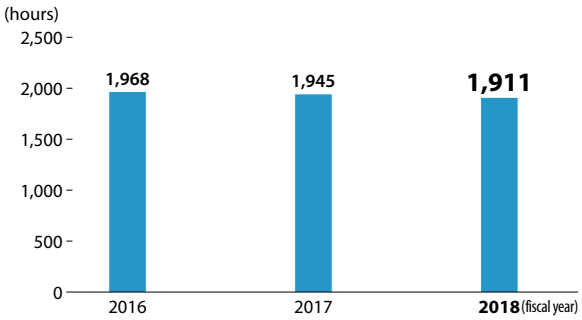
In fiscal 2018, the average salary of NTT Group was 6,390,108 yen* (base pay only).

* Scope of data: A (see page 3)

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 June 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 total hours actually worked by the end of fiscal 2023.

Total Hours Actually Worked



Scope of data: NTT alone

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

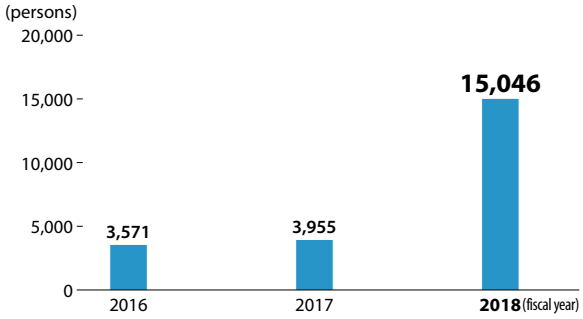
Will be fully mindful that it is critical to complete job tasks within prescribed working hours and will endeavor to achieve work styles that are independent and efficient.
Will work to enrich their hearts and minds by varying the way they work and proactively taking vacations.

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.

In implementing telework, NTT Group constructs telework environments on private cloud services and reduces security risks by integrating security platforms. NTT Group companies were selected for inclusion in the Top Hundred Telework Pioneers initiative of the Ministry of Internal Affairs and Communications, with NTT DOCOMO receiving the Top Hundred Telework Pioneers: Awards of the Minister of Internal Affairs and Communications in 2017.

Status of Utilization of the Telework System



Scope of data: B (see page 3)

In order to further expand and entrench the use of telework in NTT Group, we endorsed the aims of Telework Days* in fiscal 2018 and began taking active part in the campaign.

In addition, to improve the environment for achieving flexible work styles, we establish work systems matched to the nature of NTT Group companies' businesses, including flex time systems, 1-year modified working hour systems, discretionary work systems, and split shifts.

* 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.

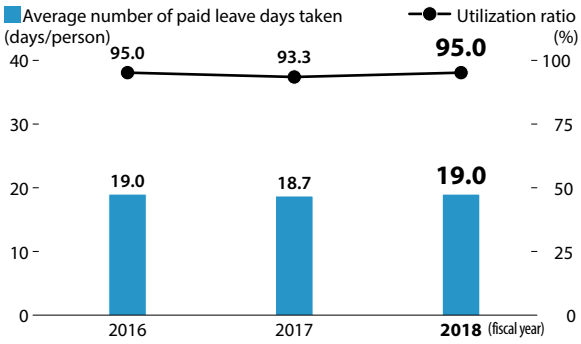
Encouraging Employees to Take Various Types of Leave

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.

Status of Utilization of Paid leave



Scope of data: B (see page 3)

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.

As a result of such initiatives, in April 2008 we earned the Kurumin Mark*, a certification provided by the Ministry of Health, Labour and Welfare. In addition, through our ongoing efforts, we have satisfied the higher standards, revised in 2017, and have continued to receive the certification.

Regarding support for nursing care, we utilize Tomonin, a symbol created by the Ministry of Health, Labour and Welfare in August 2014 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.

New Kurumin Mark

Tomonin Mark
Support for balancing work and nursing care

* Kurumin certification
Companies that developed an action plan based on the Act on Advancement of Measures to Support Raising Next Generation Children and achieved the goals set out in the plan while also meeting certain standards are recognized as Childcare Support Companies by the Minister of Health, Labour and Welfare.

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.

Main support for childcare and nursing care

Support for childcare

Childcare leave, reduced working hours for childcare, shift work for individuals with childcare obligations, re-employment system for employees who resigned due to childcare, life plan leave with annual paid leave where paid leave about to become invalid is carried over to future years, Childcare Concierge telephone consultation to support search for nursery care or temporary nursery care (including acceptance of children with illnesses), subsidized services for temporary/ monthly care or care for children with illnesses, establishment of nurseries in workplaces

Nursing care support

Nursing care leave, reduced working hours for nursing care, shift work for individuals with nursing care obligations, re-employment system for employees who resigned due to nursing care, life plan leave with annual paid leave where paid leave is about to become invalid is carried over to future years, Nursing Care Concierge telephone consultation for nursing care, subsidized services for nursing care

Childcare and Nursing Care Leave Taken

Unit: persons

Fiscal year	Special leave (Birth)	Childcare leave			Nursing care leave	
		Men	Women	Ratio of employees returning to work	Men	Women
2016	1,112	59	1,864	96.2%	55	37
2017	1,139	82	1,962	98.0%	42	41
2018	1,147	120	2,079	97.1%	65	51

Scope of data: B (see page 3)

Life Plan Study Sessions at 40 and 50 Years of Age and Other Career Milestones

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

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 (membership: 86.0% as of March 2018). 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 350 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.

In fiscal 2018, about 18,000 training programs were provided and 104,000 yen was spent per employee.

Programs for Cultivating Management Leaders and Globally Capable Employees

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

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:

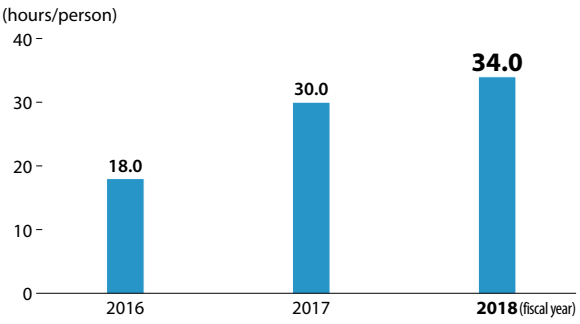
❶ Designate areas of expertise according to the expert skills required by each operation;
❷ Define and certify levels according to the skill set for each area of expertise; and
❸ Develop a PDCA cycle based on the employee's own career plan, supported by supervisors and the organization.

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.

Encouraging and Supporting Acquisition of Qualifications

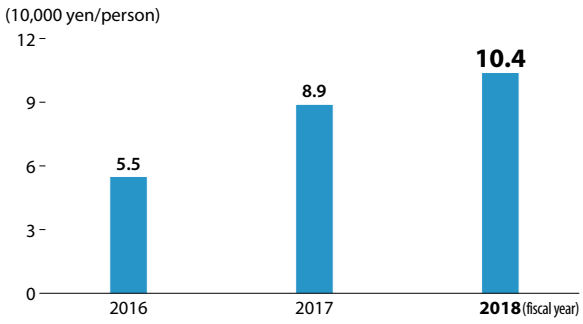
NTT Group also encourages employees to acquire qualifications related to their respective duties and intends to boost the number of qualified employees. With regard to major qualifications that are in broad demand in the ICT industry, such as Professional Engineers, Information Technology Engineers and Certified Information Systems Security Technology Professionals (CISSP), we have steadily increased the number of qualified employees from 41,062 in fiscal 2017 to 42,690 in fiscal 2018.

Average annual training hours per employee



Scope of data: D (see page 3)

Average annual training cost per employee



Scope of data: D (see page 3)

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

We raise motivation and promote networking within the Group by providing ambitious employees with opportunities to seek new challenges through our NTT Group Job Challenge in-house recruitment program. In recent years, we have been using the Job Challenge program also to nurture and raise the number of employees across the whole Group who are capable of working globally. We are actively providing opportunities for employees to transfer to global posts by creating new global posts and increasing global recruit numbers.

In fiscal 2018, 477 employees used the Job Challenge program, with 188 transferring as a result to their desired workplace.

Layoffs

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

Promoting a United Group Effort on Social Contribution Activities CSR Priority Activity

Relevant GRI Standards

- 103-1,2
- 201-1
- 413-1

Relevant SDGs

Policies and Concepts

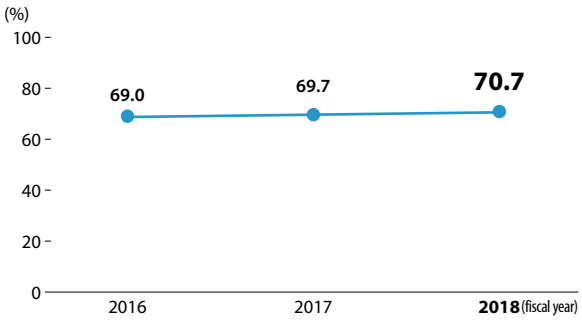
NTT Group has operating bases located not only in Japan but also around the world, from which it provides telecommunications networks, an important lifeline. For these reasons, our business is deeply rooted in local communities. In order to further develop this business, it is absolutely essential that 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 240,000-strong NTT Group interact with members of their local community, identify local needs, and contribute in even small ways to addressing issues. 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 further development of a flourishing and vibrant community. 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.

Employee participation rate in volunteer activities



Scope of data: D (see page 3)

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.

Results of Corporate Citizenship Activities in Fiscal 2018

Results of Citizenship Activities in Fiscal 2018

Pillars of citizenship activities	Number of activities	Number of participants	Expenditures* (million yen)
Environmental conservation	1,106	75,706	875
Social welfare	497	6,399	1,079
Education and cultural promotion	423	2,940	1,841
Local community development and dialogue	1,740	23,068	937
International exchange activities	43	445	69
Sports promotion	268	5,853	1,499
Others	127	3,080	113
Total	**4,204**	**117,491**	**6,414**

* 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.).

Citizenship Activity Categories for Fiscal 2018

Category		Ratio in FY2018
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	65.8%
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	8.2%
Commercial initiatives	Corporate citizenship activities that generate profit for NTT Group	26.0%

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 in Fiscal 2018

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.

The Opening of NTT Group Volunteer Portal Site

NTT Group Volunteer Portal Site introduces and supports various volunteer activities for NTT Group employees in Japan. We opened the site in April of 2017 to promote strategic corporate citizenship activities across NTT Group. During fiscal 2018, the site's first year of operation, 44 such activities involving 1,318 participants took place through the site, which also received 5,523 registrants (8,827 as of the end of August 2018).

As we continue to develop the site as a "third place" venue for creative interaction, we will link it to the improvement of corporate vitality and to the fostering of group solidarity and a volunteer culture.

NTT Group Volunteer Portal Site

Challenge for Tomorrow Sports Event & Academy

Hokkaido Marathon 2017

Japan Walk in SENDAI 2017

Training course for Foreigner Omotenashi (Hospitality) Language Volunteers

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 2018, we recognized 31 individuals and 2 groups, and presented an award for outstanding achievement in volunteer activities to 14 recipients.

Corporate Governance

Overview of Corporate Governance System

Basic Policy

NTT strives to meet the expectations of various stakeholders, including its shareholders and other investors as well as customers, business partners, and employees. The Company also recognizes the need to strengthen its corporate governance system based on the intent of the principles of Japan's Corporate Governance Code. NTT seeks to accelerate the process of self-transformation to "Your Value Partner" and to realize its basic policies of ensuring sound management, executing appropriate decision-making and business activities, clarifying accountability, and maintaining thorough compliance.

Overview of Enhancing Corporate Governance System

Since its founding in 1985, NTT Group has continued to enhance its corporate governance system through means such as the appointment of several outside Members of the Board. Over the years, we have proceeded to reinforce business execution, supervision, and internal control systems. Recent initiatives have included a focus on developing a framework that appropriately supports the exercise of voting rights by shareholders.

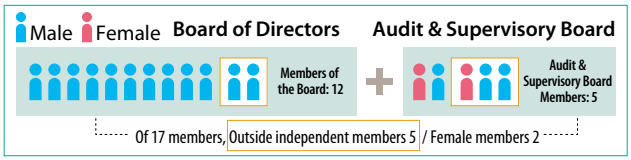
	–2005	–2010	–2017
Major Revisions of Laws and Regulations Related to Corporate Governance	**2004** • Establishment of TSE's corporate governance principles for listed companies	**2006** • Enforcement of Companies Act **2007** • Enforcement of Financial Instruments and Exchange Act	**2015** • Enforcement of revised Companies Act • Enforcement of TSE's Corporate Governance Code
Business Execution / Supervision Systems	**1985** • Establishment of NTT, appointment of several outside Members of the Board **2003** • Increase in number of Audit & Supervisory Board Members: from 4 members (2 inside members, 2 outside members) to 5 members (3 inside members, 2 outside members) **2005** • Establishment of Appointment and Compensation Committee	**2006** • Increase in number of outside Audit & Supervisory Board Members: from 5 members (3 inside members, 2 outside members) to 5 members (2 inside members, 3 outside members) • Appointment of financial expert as Audit & Supervisory Board Member	**2011** • Appointment of first female corporate officer (1 outside Audit & Supervisory Board Member) **2015** • Establishment of independence standards for independent Members of the Board and independent Audit & Supervisory Board Members
Internal Control / Risk Management	**2002** • Establishment of Business Risk Management Committee • Establishment of NTT Group Corporate Ethics Charter • Establishment of Corporate Ethics Committee • Establishment of Groupwide Corporate Ethics Help Line **2005** • Establishment of Internal Audit Office	**2006** • Establishment of Internal Control Office * Consolidation of Internal Audit Office • Establishment of Basic Policy for the Development of Internal Control Systems **2010** • Establishment of Risk Management Rules	**2015** • Revision of Basic Policy for the Development of Internal Control Systems **2016** • Commencement of disclosing information on operation (overview) of internal control systems
Ensuring the Exercise of Shareholder Voting Rights	**2002** • Implementation of electronic voting for exercise of rights	**2006** • Introduction of ICJ's electronic voting platform for institutional investors	**2012** • Commencement of providing notes to non-consolidated financial statements, etc., over Internet **2016** • Commencement of Internet disclosure of Notice of Convocation prior to mailing (same day for Japanese- and English-language versions, 42 days before date of Ordinary General Meeting of Shareholders) • Expansion of Internet disclosure of information **2017** • Commencement of Notice of Convocation distribution in format compatible with smartphones
Information Disclosure	**2003** • Commencement of disclosure of quarterly information • Establishment of disclosure regulations • Establishment of Disclosure Committee **2005** • Establishment of IR Office • Establishment of CSR Promotion Office / Committee • Commencement of issuance of CSR reports	**2006** • Commencement of disclosure of Corporate Governance Report **2010** • Publication of disclosure policy	**2014** • Commencement of issuance of integrated reports **2015** • Commencement of disclosure of Corporate Governance Report in response to Corporate Governance Code • Commencement of issuance of sustainability reports

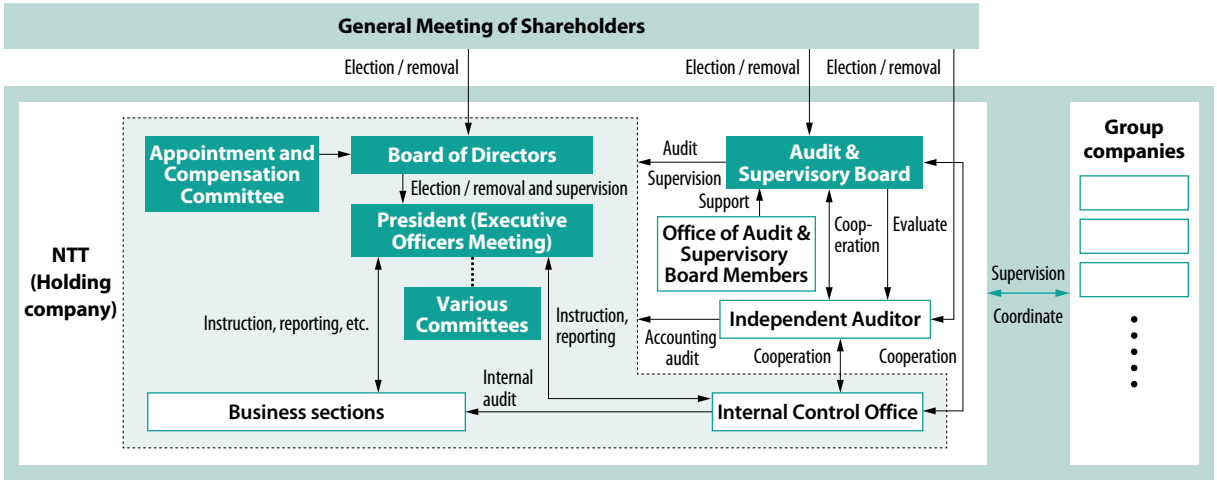
Corporate Governance System

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.

Composition of Board of Directors / Audit & Supervisory Board





Board of Directors

Number of meetings in the fiscal year ended March 31, 2018: 12

The Board of Directors consists of 12 Members of the Board, including two outside independent Members of the Board. 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. The members of NTT's Board of Directors are elected based on having a high level of integrity and insight.

Audit & Supervisory Board

Number of meetings in the fiscal year ended March 31, 2018: 22

The Audit & Supervisory Board consists of a total of five Audit & Supervisory Board Members, comprising two internal Audit & Supervisory Board Members (one of whom is female) and three outside independent Audit & Supervisory Board Members (one of whom is female). 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

Number of meetings in the fiscal year ended March 31, 2018: 1

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 **Number of meetings in the fiscal year ended March 31, 2018: 33**

Important corporate matters to be decided are, in principle and in advance, discussed by 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. Major committees include the Technology Strategy Committee, which deliberates on the Group's R&D vision and technology development strategy; the Investment Strategy Committee, which examines investment projects that are larger than a certain scale; and the Finance Strategy Committee, which discusses basic financial strategies and financial issues. 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.

Board of Directors

Background and Experience of Members of the Board

Hiromichi Shinohara

Date of Birth: March 15, 1954
Chairman of the Board

Years Served as Member of the Board: 9

Shares Owned: 17,400

Number of Meetings Attended (Percent): 12/12 (100%)

Background and Experience

Apr. 1978 : Joined Nippon Telegraph and Telephone Public Corporation
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
Representative Member of the Board of the Company
Jun. 2018:. Chairman of the Board of the Company (present post)

Principal Concurrent Positions

None

Jun Sawada

Date of Birth: July 30, 1955
President and Chief Executive Officer
Representative Member of the Board

Years Served as Member of the Board: 4

Shares Owned: 13,600

Number of Meetings Attended (Percent): 12/12 (100%)

Background and Experience

Apr. 1978 : Joined Nippon Telegraph and Telephone Public Corporation
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
Representative Member of the Board of NTT Communications Corporation
Jun. 2013 : Senior Executive Vice President
Representative 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
Representative Member of the Board of the Company (present post)

Principal Concurrent Positions

None

Akira Shimada

Date of Birth: December 18, 1957
Senior Executive Vice President
Chief Financial Officer
Chief Compliance Officer
In charge of business strategy and risk management
Representative Member of the Board of the Company

Years Served as Member of the Board: 6

Shares Owned: 8,804

Number of Meetings Attended (Percent): 12/12 (100%)

Background and Experience

Apr. 1981 : Joined Nippon Telegraph and Telephone Public Corporation
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
Representative Member of the Board of the Company (present post)

Principal Concurrent Positions

None

Motoyuki Ii

Date of Birth: November 17, 1958
Senior Executive Vice President
Chief Technology Officer
Chief Information Officer
Chief Digital Officer
In charge of technical strategy and international standardization
Head of Technology Planning
Representative Member of the Board of the Company

Years Served as Member of the Board: –

Shares Owned: 5,700

Number of Meetings Attended (Percent): –/– (–%)

Background and Experience

Apr. 1983 : Joined Nippon Telegraph and Telephone Public Corporation
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
Representative 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
Representative 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
Representative Member of the Board of Nippon Telegraph and Telephone East Corporation
Jun. 2018 : Senior Executive Vice President
Head of Technology Planning
Representative Member of the Board of the Company (present post)

Principal Concurrent Positions

None

Tsunehisa Okuno

Date of Birth: October 12, 1960
Executive Vice President
Head of Global Business
Member of the Board

Years Served as Member of the Board: 6

Shares Owned: 5,500

Number of Meetings Attended (Percent): 12/12 (100%)

Background and Experience

Apr. 1983 : Joined Nippon Telegraph and Telephone Public Corporation
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 (present post)
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)

Principal Concurrent Positions

Senior Vice President of Dimension Data Holdings plc
Director of NTT Security Corporation

Hiroki Kuriyama

Date of Birth: May 27, 1961
Senior Vice President
Head of Strategic Business Development
In charge of 2020 Project
Member of the Board

Years Served as Member of the Board: 4

Shares Owned: 4,370

Number of Meetings Attended (Percent): 12/12 (100%)

Background and Experience

Apr. 1985 : Joined the Company
Feb. 2003 : Vice President of Department I of the Company
May 2005 : Vice President of Corporate Business Strategy of the Company
Jun. 2008 : Vice President of Corporate Strategy Planning of the Company
Jun. 2012 : Vice President of President's Office of General Affairs of the Company
Jun. 2014 : Senior Vice President
Head of Strategic Business Development
Member of the Board of the Company (present post)

Principal Concurrent Positions

None

Notes: 1. As of June 30, 2018
2. Number of meetings attended is for the fiscal year ended March 31, 2018.

Takashi Hiroi

Date of Birth: February 13, 1963
Senior Vice President
Head of Finance and Accounting
Member of the Board

Years Served as Member of the Board: 3

Shares Owned: 3,800

Number of Meetings Attended (Percent): 12/12 (100%)

Background and Experience

Apr. 1986 : Joined the Company
May 2005 : Vice President of Corporate Business Strategy of the Company
Jun. 2008 : Vice President of Strategic Business Development of the Company
Jul. 2009 : Vice President of Corporate Strategy Planning of the Company
Jun. 2014 : Head of Finance and Accounting of the Company
Jun. 2015 : Senior Vice President
Head of Finance and Accounting
Member of the Board of the Company
(present post)

Principal Concurrent Positions

None

Eiichi Sakamoto

Date of Birth: September 3, 1963
Senior Vice President
Head of General Affairs
Member of the Board

Years Served as Member of the Board: 2

Shares Owned: 3,400

Number of Meetings Attended (Percent): 12/12 (100%)

Background and Experience

Apr. 1986 : Joined the Company
Oct. 2005 : Head of the Business Management Group of the Corporate Strategy Planning Department of Nippon Telegraph and Telephone East Corporation
Jul. 2009 : Head of the Planning Group of the Corporate Strategy Planning Department of Nippon Telegraph and Telephone East Corporation
Jul. 2011 : Head of the Public Relations of the Corporate Strategy Planning of the Company
Jun. 2015 : Senior Vice President, Managing Director of Corporate Marketing Strategy Department of NTT DOCOMO, INC.
Jun. 2016 : 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)
Jun. 2018 : Senior Vice President
Head of General Affairs
Member of the Board of the Company
(present post)

Principal Concurrent Positions

Member of the Board of Nippon Telegraph and Telephone East Corporation

Katsuhiko Kawazoe

Date of Birth: September 5, 1961
Senior Vice President
Head of Research and Development Planning
Member of the Board

Years Served as Member of the Board: –

Shares Owned: 600

Number of Meetings Attended (Percent): –/– (–%)

Background and Experience

Apr. 1987 : Joined the Company
Aug. 2003: Senior Research Engineer of the Cyberspace Laboratories of the Cyber Communications Laboratory Group of the Company
Oct. 2007 : Senior Research Engineer of the Cyber Solutions
Laboratories of the Cyber Communications Laboratory Group of the Company
Jul. 2008 : Vice President of Research and Development Planning of the Company
Jul. 2014 : Head of the Service Evolution Laboratories of the Service Innovation Laboratory Group of the Company
Jul. 2016 : Head of the Service Innovation Laboratory Group of the Company
Jul. 2018 : Senior Vice President
Head of Research and Development Planning
Member of the Board of the Company
(present post)

Principal Concurrent Positions

None

Ryota Kitamura

Date of Birth: January 20, 1965
Senior Vice President
Head of Corporate Strategy Planning
Member of the Board

Years Served as Member of the Board: –

Shares Owned: 1,500

Number of Meetings Attended (Percent): –/– (–%)

Background and Experience

Apr. 1988 : Joined the Company
Oct. 2003 : Senior Manager of the Corporate Strategy Planning Department of Nippon Telegraph and Telephone East Corporation
Jun. 2011 : Head of the Marketing Strategy Group of the Corporate Strategy Planning Department of Nippon Telegraph and Telephone East Corporation
Jul. 2015 : Vice President of Corporate Strategy Planning of the Company
Jun. 2018 : 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)

Principal Concurrent Positions

Member of the Board of Nippon Telegraph and Telephone West Corporation

Katsuhiko Shirai

Date of Birth: September 24, 1939
Outside Independent Member of the Board

Years Served as Member of the Board: 6

Shares Owned: 3,800

Number of Meetings Attended (Percent): 11/12 (92%)

Background and Experience

Apr. 1965 : Assistant of the First Faculty of Science and Engineering 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. (present post)
Nov.2016 : Honorary Advisor of Waseda University
(present post)

Principal Concurrent Positions

Outside Director of Japan Display. Inc.

Sadayuki Sakakibara

Date of Birth: March 22, 1943
Outside Independent Member of the Board

Years Served as Member of the Board: 6

Shares Owned: 8,800

Number of Meetings Attended (Percent): 10/12 (83%)

Background and Experience

Apr. 1967 : Joined Toyo Rayon Co., Ltd. (currently registered as Toray Industries, Inc.)
Jun. 1994 : Director of the Corporate Planning Department of Toray Industries, Inc.
Jun. 1996 : Director of the Board of Toray Industries, Inc.
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.
Jun. 2010 : 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.
Jun. 2018 : Special Adviser of Toray Industries, Inc.
(present post)

Principal Concurrent Positions

Special Adviser of Toray Industries, Inc.

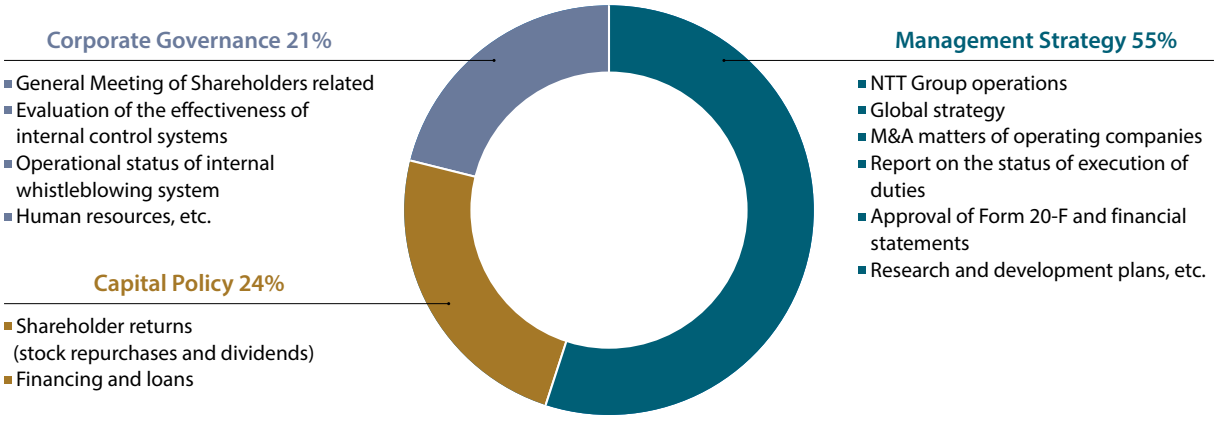
Notes: 1. As of June 30, 2018
2. Number of meetings attended is for the fiscal year ended March 31, 2018.

Activities and Evaluation of the Effectiveness of the Board of Directors

The Board of Directors of NTT decides on important items related to the Group's management that have passed the review of the Executive Officers Meeting, made up of the president, senior executive vice presidents, full-time directors, and the heads of staff organizations, as well as the reviews 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 individual Members of the Board.

In the fiscal year ended March 31, 2018, brisk discussions were held on topics including businesses combinations for expanding profits in the near term for global cloud services and initiatives based on the medium-term management strategy. As part of efforts to monitor business execution, the contents of reports on important initiatives and conditions in business areas were revised to facilitate better understanding and thereby enhance the effectiveness of the Board of Directors.

Breakdown of Agenda Items Presented to the Board of Directors (April 2017–March 2018)



Furthermore, NTT took steps to foster a deeper understanding regarding its business activities among outside independent Members of the Board. For example, meetings were arranged with the management of principal subsidiaries to provide forums for discussions about the strategies of these companies. We also held site tours to help these Members of the Board understand the status of initiatives in our focus R&D areas and security operations. Additionally, ideas and opinions on issues concerning Group management were exchanged among outside independent Members of the Board and Audit & Supervisory Board Members, among outside independent Members of the Board and executives of major Group companies in and outside Japan, and among outside independent Members of the Board of NTT and outside independent Members of the Board of major Group companies and other members.

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

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.

Messages from Outside Independent Members of the Board

Katsuhiko Shirai
Outside Independent Member of the Board

Sadayuki Sakakibara
Outside Independent Member of the Board

Based on my experience as an educator and a researcher, I have primarily made suggestions from a technological standpoint or from the perspective of strengthening the business execution supervisory function.

IoT, AI, and other technologies that relate directly to NTT's business are advancing at a startling pace. Against this backdrop, I see business opportunities for NTT in global expansion grounded on a platform of undisputed R&D capabilities. Important areas of consideration in this undertaking will include the reinforcement of R&D systems in the United States and the construction of global systems that allow for swift action. In addition, NTT will need to actively participate in the development of international standards for automated driving and other technologies and in supporting customers in heightening security against cyberattacks, a rapidly growing threat. Furthermore, the Company will have to address various technical issues leading up to the migration from public switched telephone networks to IP networks for fixed-line communications services scheduled for 2024.

Compliance is fundamental to business execution. Ensuring compliance requires steadfast effort, such as by having outside Members of the Board objectively monitor reports on the status of business execution from Members of the Board and performing in-depth checks on the status of responses to reports received through the Groupwide Corporate Ethics Help Line.

Discussions at meetings of the Board of Directors are highly active, as members including myself offer advice on matters such as those I just mentioned, and I feel that this advice is accurately reflected in Group management.

Looking ahead, to improve its corporate value, it will be crucial for NTT Group to leverage the strength of its world-leading R&D capabilities in order to lead the industry in creating the IT that will be required by the society of the future. At the same time, NTT Group will need to efficiently cultivate and recruit management and other personnel, through means such as dividing up responsibilities within the Group, to accelerate its global development.

I am currently in my sixth year as an outside independent Member of the Board. In my time in this position, I have witnessed the ICT industry change at breakneck speed. This pace is not seen in any other industry, and I suspect that it will only grow faster as we move forward.

Over the years, I have been active in my efforts to help strengthen NTT's corporate governance, and my focus in doing so has always been supporting the Company to respond swiftly to such changes in the ICT industry and to create services that meet the needs of customers around the world. For example, I have sat down to speak with the senior management of overseas subsidiaries in meetings about the Group's medium- to long-term global strategies and exchanged opinions with Audit & Supervisory Board Members regarding corporate governance, diversity, and other environmental, social, and governance (ESG) topics.

These activities have enabled me to better understand the workings of the Company. Leveraging this knowledge and the experience I have accumulated to date, I point out issues seen from my outside perspective and spark rigorous debate at meetings of the Board of Directors. Specific topics I have brought up include measures for retaining the principal managers of acquired companies, global procurement, and measures for preventing wrongdoing and scandals.

Under the new management team led by President Jun Sawada, NTT will need to be even more considerate of diversity as it develops its global operations. I also hope that the Company will continue to improve the transparency of the Board of Directors and to strengthen corporate governance as it practices management geared toward accomplishing the United Nations Sustainable Development Goals.

Audit & Supervisory Board

Background and Experience of Audit & Supervisory Board Members

Akiko Ide

Date of Birth: February 28, 1955
Audit & Supervisory Board Member

Years Served as Audit & Supervisory Board Member: 4

Shares Owned: 9,000

Number of Board of Director's Meetings Attended (Percent):
12/12 (100%)

Number of Audit & Supervisory Board Meetings Attended (Percent): 21/22 (95%)

Background and Experience

Apr. 1977 : Joined Nippon Telegraph and Telephone Public Corporation
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 Corporate Citizenship Department of NTT DOCOMO, INC.
Jun. 2006 : Executive Director and General Manager of Corporate Citizenship Department of NTT DOCOMO, INC.
Jul. 2008 : Executive Director and General Manager for 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 NTT (present post)

Principal Concurrent Positions

None

Takao Maezawa

Date of Birth: October 24, 1955
Audit & Supervisory Board Member

Years Served as Audit & Supervisory Board Member: 2

Shares Owned: 9,504

Number of Board of Director's Meetings Attended (Percent):
12/12 (100%)

Number of Audit & Supervisory Board Meetings Attended (Percent): 22/22 (100%)

Background and Experience

Apr. 1978 : Joined Nippon Telegraph and Telephone Public Corporation
Jun. 2006 : Executive Manager of Human Resources Management Department, General Manager of Training Institute
Executive Manager of the 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 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 NTT (present post)

* Mr. Maezawa has extensive knowledge concerning finance and accounting matters resulting from experience in accounting departments at the Company and related companies.

Principal Concurrent Positions

None

Michiko Tomonaga

Date of Birth: July 26, 1947
Outside Independent Audit & Supervisory Board Member

Years Served as Audit & Supervisory Board Member: 7

Shares Owned: 2,700

Number of Board of Director's Meetings Attended (Percent):
11/12 (92%)

Number of Audit & Supervisory Board Meetings Attended (Percent): 21/22 (95%)

Background and Experience

Mar. 1975 : Registered as a certified public accountant (certification up-to-date)
Jul. 2007 : Vice President of the Japanese Institute of Certified Public Accountants
Jul. 2008 : Senior Partner at Ernst & Young ShinNihon
Jun. 2010 : Outside Corporate Auditor of Keikyu Corporation
Jun. 2011 : Outside Audit & Supervisory Board Member of NTT (present post)
Feb. 2012 : Audit & Supervisory Board Member of the Corporation for Revitalizing Earthquake affected Business
Jun. 2014 : Outside Director of Japan Exchange Group, Inc.
Jun. 2016 : Outside Director of Keikyu Corporation (present post)

* Audit & Supervisory Board Member Michiko Tomonaga is a Certified Public Accountant who has extensive knowledge concerning finance and accounting matters.

Principal Concurrent Positions

Certified Public Accountant
Outside Director of Keikyu Corporation

Seiichi Ochiai

Date of Birth: April 10, 1944
Outside Independent Audit & Supervisory Board Member

Years Served as Audit & Supervisory Board Member: 6

Shares Owned: 5,304

Number of Board of Director's Meetings Attended (Percent):
10/12 (83%)

Number of Audit & Supervisory Board Meetings Attended (Percent): 19/22 (86%)

Background and Experience

Apr. 1974 : Instructor in the Faculty of Law of the University of Tokyo
Apr. 1977 : Associate Professor in the Faculty of Law of Seikei University
Apr. 1981 : Professor in the Faculty of Law of Seikei University
Apr. 1990 : Professor at the University of Tokyo Graduate Schools for Law and Politics and the Faculty of Law of the University of Tokyo
Apr. 2007 : Professor at Chuo Law School
Apr. 2007 : Registered as attorney-at-law (Dai-Ichi Tokyo Bar Association) (registration up-to-date)
Jun. 2007 : Emeritus Professor at the University of Tokyo (present post)
Jun. 2008 : Outside Director of EBARA CORPORATION
Jun. 2012 : Outside Audit & Supervisory Board Member of NTT (present post)
Jul. 2012 : Outside Director of Meiji Yasuda Life Insurance Company (present post)
Jun. 2013 : Outside Auditor of Ube Industries, Ltd. (present post)

Principal Concurrent Positions

Lawyer
Outside Director of Meiji Yasuda Life Insurance Company
Outside Auditor of Ube Industries, Ltd.

Takashi Iida

Date of Birth: September 5, 1946
Outside Independent Audit & Supervisory Board Member

Years Served as Audit & Supervisory Board Member: 4

Shares Owned: 2,900

Number of Board of Director's Meetings Attended (Percent):
12/12 (100%)

Number of Audit & Supervisory Board Meetings Attended (Percent): 22/22 (100%)

Background and Experience

Apr. 1974 : Registered as attorney-at-law (Daini Tokyo Bar Association) (registration up-to-date)
Joined Mori Sogo Law Offices (currently Mori Hamada & Matsumoto)
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. (present post)
Jun. 2014 : Outside Audit & Supervisory Board Member of NTT (present post)

Principal Concurrent Positions

Lawyer
Corporate Auditor (Part-Time) of Shimadzu Corporation
Outside Director of Alps Electric Co., Ltd.

Notes: 1. As of June 30, 2018
2. Number of meetings attended is for the fiscal year ended March 31, 2018.

Composition of the Audit & Supervisory Board

The Audit & Supervisory Board comprises three outside independent Audit & Supervisory Board Members (one of whom is female), who have experience and knowledge in a range of fields—as a certified public accountant, university professor, and lawyer—and two full-time Audit & Supervisory Board Members (one of whom is female). We conduct effective audits by combining the independence of outside Audit & Supervisory Board Members with the superior information collection capabilities of full-time Audit & Supervisory Board Members. Among the board members, full-time Audit & Supervisory Board Member Takao Maezawa has experience in the accounting division of NTT and its affiliated companies, while outside independent Audit & Supervisory Board Member Michiko Tomonaga, a certified public accountant, has considerable knowledge in the areas of finance and accounting.

Activities of the Audit & Supervisory Board

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 this way, Audit & Supervisory

Board Members maintain an understanding of the execution of duties by Members of the Board and provide their opinions as needed.

In the fiscal year ended March 31, 2018, the Audit & Supervisory Board met 22 times. Moreover, separate from meetings of the Audit & Supervisory Board, the Audit & Supervisory Board Members Preliminary Deliberation Meeting convened 36 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 on matters to be discussed at the Executive Officers Meeting. In addition, Audit & Supervisory Board Members work closely with Independent Auditors and the Internal Control Office. Audit & Supervisory Board Members exchanged opinions with the Independent Auditor 11 times and with the Internal Control Office 10 times. Audit & Supervisory Board Members also receive explanations concerning 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 on 21 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 (19 bases), received information from local representatives, and conducted discussions. Furthermore, Audit & Supervisory Board Members received reports regarding audit results, etc., 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 individuals responsible for business execution. In addition, Audit & Supervisory Board Members contribute to the strengthening of corporate governance systems and the fostering of awareness of compliance matters.

Nomination Policies and Procedure for Audit & Supervisory Board Members

NTT has the policy of electing Audit & Supervisory Board Member candidates who have the capacity to provide audits based on specialized experience and insight. From the perspective of guaranteeing fair audits of the execution of duties by Members of the Board, for outside independent Audit & Supervisory Board Members, NTT elects people who present no risk of a conflict of interest with general shareholders. In accordance with the Companies Act, NTT ensures that outside independent Audit & Supervisory Board Members make up half or more of the Audit & Supervisory Board.

The procedure for nomination involves Members of the Board proposing Audit & Supervisory Board Member candidates based on the aforementioned nomination policy. These proposals are then discussed by the Audit & Supervisory Board, which consists of half or more of outside independent Audit & Supervisory Board Members, and consent is granted if appropriate. The candidates are then approved by the Board of Directors and presented for voting at the General Meeting of Shareholders.

Support Structures for Audit & Supervisory Board Members

The Office of Audit & Supervisory Board Members, which has four dedicated NTT employees, has been established as a structure to support audits by Audit & Supervisory Board Members. In addition, NTT has concluded contracts with the lawyers and other specialists who may be called upon as necessary to provide advice at the expense of NTT.

In addition, when Audit & Supervisory Board Members are elected, they are trained with respect to market trends and compliance. They then continue to undergo training on a broad spectrum of topics, including domestic and overseas economic and social issues, after being appointed.

Moreover, NTT is creating opportunities for tours and implementing other initiatives so that outside Audit & Supervisory Board Members can further deepen their understanding of NTT and NTT Group.

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.

(1) A person who executes business in a partner company that exceeds NTT's Standards*1

(2) A person who executes business in a lending company that exceeds NTT's Standards*2

(3) 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

(4) A person who executes business in an organization that received donations exceeding NTT's Standards*4

Even if any of (1) through (4) 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.

Reason for Nomination and Status of Independence

Outside Members of the Board (Independent Members of the Board)

Name	Reason for nomination	Status of independence: Total amount of transactions with and total amount of donations from NTT and its major subsidiaries in the last three fiscal years			
Katsuhiko Shirai	Katsuhiko Shirai has a wealth of experience as an operational director of an educational institution and a high level of integrity and insight. NTT believes that he will help strengthen the supervisory function for business execution and expects to incorporate the opinions he provides from his wide-ranging experience and his managerial perspective.	Waseda University, at which Katsuhiko Shirai has served as President	Total of transactions	Comparison with total annual operating revenues of NTT and its major subsidiaries	Less than 1%
				Comparison with total annual revenues of the university	Less than 1%
			Total of donations	Comparison with total annual revenues of the university	Less than 1%
		The Open University of Japan Foundation, at which Katsuhiko Shirai served as Chairperson (retired in March 2017)	Total of transactions	Comparison with total annual operating revenues of NTT and its major subsidiaries	Less than 1%
			Total of donations	—	Less than ¥10 million
Sadayuki Sakakibara	Sadayuki Sakakibara has a wealth of experience, including as an operational director of an educational institution, and a high level of integrity and insight. NTT believes that he will help strengthen the supervisory function for business execution and expects to incorporate the opinions he provides from his wide-ranging experience and his managerial perspective.	Toray Industries, Inc., at which Sadayuki Sakakibara served as Chairman of the Board	Total of transactions	Comparison with total annual operating revenues of NTT and its major subsidiaries	Less than 1%
				Comparison with total annual revenues of the company	Less than 1%
		Japan Business Federation (Keidanren), at which Sadayuki Sakakibara served as Chairman (retired in May 2018)	Total of transactions	Comparison with total annual operating revenues of NTT and its major subsidiaries	Less than 1%
			Total of donations	—	Less than ¥10 million

Outside Audit & Supervisory Board Members (Independent Audit & Supervisory Board Members)

Name	Reason for nomination	Status of independence: Total amount of transactions with and total amount of donations from NTT and its major subsidiaries in the last three fiscal years			
Michiko Tomonaga	Michiko Tomonaga has worked for many years as a Certified Public Accountant, and NTT expects that she will conduct future audits based on the knowledge and insight that she has gained through her career.	Ernst & Young Japan, at which Michiko Tomonaga worked as Senior Partner (retired in June 2010)	Total of transactions	Comparison with total annual operating revenues of NTT and its major subsidiaries	Less than 1%
				Comparison with total annual revenues of the audit firm	Less than 1%
		Japanese Institute of Certified Public Accountants, at which Michiko Tomonaga served as Vice President (retired in July 2010)	Total of transactions	Comparison with total annual operating revenues of NTT and its major subsidiaries	Less than 1%
				Comparison with total annual revenues of the association	Less than 1%
Seiichi Ochiai	Seiichi Ochiai has been serving for many years as a university professor specializing in the study of law, and NTT expects that he will conduct future audits based on the knowledge and insight that he has gained through his career.	Chuo University, at which Seiichi Ochiai was a professor (retired in March 2015)	Total of transactions	Comparison with total annual operating revenues of NTT and its major subsidiaries	Less than 1%
				Comparison with total annual revenues of the university	Less than 1%
			Total of donations*1	—	Less than ¥10 million
Takashi Iida	Takashi Iida has worked for many years in legal sectors, and NTT expects that he will conduct future audits based on the knowledge and insight that he has gained through his career.	Mori, Hamada & Matsumoto Law Office, with which Takashi Iida was affiliated (retired in December 2011)	Total of transactions	Comparison with total annual operating revenues of NTT and its major subsidiaries	Less than 1%
		Kowa Law Office, which Takashi Iida established	Total of transactions*2	Comparison with total annual operating revenues of NTT and its major subsidiaries	Less than 1%

*1 Applicable donations only include those to organizations other than the law schools that Seiichi Ochiai served at.
*2 Applicable transactions only include those related to common communication services.

Status of Activities of Outside Members of the Board and Outside Audit & Supervisory Board Members

	Name	Statements Made at Board of Directors' Meetings and Audit & Supervisory Board Meetings
Outside Members of the Board (Independent Members of the Board)	**Katsuhiko Shirai**	Katsuhiko Shirai made comments mainly concerning the circumstances of Group management and global strategy from his perspective as an operational director of an educational institution with extensive experience.
	Sadayuki Sakakibara	Sadayuki Sakakibara made comments mainly concerning the circumstances of Group management and capital policies from his perspective as a corporate executive with extensive experience.
Outside Audit & Supervisory Board Members (Independent Audit & Supervisory Board Members)	**Michiko Tomonaga**	Michiko Tomonaga made comments mainly concerning the accounting audit based on the professional perspective fostered through her extensive experience as a certified public accountant.
	Seiichi Ochiai	Seiichi Ochiai made comments mainly concerning corporate governance based on the professional perspective fostered through his extensive experience as a university professor and a lawyer.
	Takashi Iida	Takashi Iida made comments mainly concerning corporate governance based on the professional perspective fostered through his extensive experience as a lawyer.

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.

Total Compensation of Members of the Board and Audit & Supervisory Board Members (Fiscal Year Ended March 31, 2018)

Position	Number of payees	Total compensation
Members of the Board	12	¥549 million
Audit & Supervisory Board Members	5	¥119 million
Total	17	¥668 million

Notes: 1 At the 21st Ordinary General Meeting of Shareholders held on June 28, 2006, 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 Total compensation of Members of the Board includes ¥101 million in bonuses for the fiscal year ended March 31, 2018.
3 In addition to the above, an aggregate of ¥14 million is to be paid to Members of the Board who are also employees as bonuses for their service as employees.

Independent Auditor

Activities of the Independent Auditor

NTT has appointed KPMG AZSA LLC as its Independent Auditor.

The Independent Auditor maintains the level of coordination with the Audit & Supervisory Board and the Internal Control Office necessary to conduct appropriate audits. As part of this coordination, the Independent Auditor appropriately audits by reporting the audit plans and audit results to the Audit & Supervisory Board and working

together with the Internal Control Office to establish systems for monitoring the status of oversight related to evaluating internal control systems for financial reports. For the fiscal year ended March 31, 2018, the Independent Auditors who carried out the audit were Takuji Kanai, Kensuke Sodekawa, and Masashi Oki, whose years of experience as Independent Auditors are within the statutory guidelines.

In addition, 30 certified public accountants and 23 other staff members assisted in conducting the audits.

Nomination of the Independent Auditor

NTT believes that it is important to maintain and enhance audit quality while increasing audit efficiency. Based on this policy, the Audit & Supervisory Board evaluates Independent Auditor candidates from the perspectives of their independence and specialties and the appropriateness and adequateness of their auditing activities. The candidates who are approved by the Audit & Supervisory Board are then presented for voting at the Ordinary General Meeting of Shareholders.

The Audit & Supervisory Board may choose to dismiss or not reappoint the Independent Auditor in any of the cases described in Article 340 (1) of the Companies Act based on a unanimous vote by all Audit & Supervisory Board Members. In addition, if the Board of Directors determines that it would be difficult for the Independent Auditor to perform proper audits, the Audit & Supervisory Board may propose a resolution to the Ordinary General Meeting of Shareholders that the Independent Auditor be discharged or that the Independent Auditor not be reappointed.

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.

	Fiscal year ended March 31, 2017	Fiscal year ended March 31, 2018
Compensation for audit services	¥5,004 million	¥6,036 million
Compensation for non-audit services	¥567 million	¥398 million
Total	¥5,571 million	¥6,434 million

Note: Audit services refer to the 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 the Basic Policies Concerning the Maintenance of Internal Control Systems for NTT Group, which was approved via resolution by the Board of Directors.

Based on these policies, NTT Group has established the 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 WEB http://www.ntt.co.jp/about_e/internalcontrol.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.

Dialogue with Shareholders and Other Investors

NTT promotes management that prioritizes discussions with shareholders, which not only includes discussions at General Meetings of Shareholders but also involves senior management, including the president, actively promoting discussions with shareholders about medium-term management strategies, corporate governance, business performance trends, and other topics through one-on-one meetings with institutional investors and briefings targeting individual investors.

The opinions received from shareholders through such discussions are shared in the Company. NTT considered and formulated the "Towards the Next Stage 2.0" Medium-Term Management Strategy that was announced in May 2015 in light of shareholder opinions.

During discussions with shareholders, insider information is strictly controlled, and information is proactively disclosed with due consideration to fair disclosure (timely, fair, and impartial information disclosure). To increase convenience for overseas investors, we strive to release Japanese- and English-language disclosure materials at the same time. The Japanese- and English-language versions of the entire Notice of Convocation for the Ordinary General Meeting of Shareholders, including the business report, were released at the same time, more than one month prior to the date of the Ordinary General Meeting of Shareholders.

Policy for Constructive Dialogue with Shareholders and Other Investors

Appointment of executives / Members of the Board	The Head of Finance and Accounting is responsible for communications with investors, and the IR office is established within the Finance and Accounting Department.
Measures to ensure positive cooperation between internal departments	The Finance Strategy Committee takes steps to enhance communications based on cooperation with related departments, such as periodically discussing the settlement of accounts.
Promotion of opportunities for dialogue	In addition to one-on-one meetings, we hold briefings, etc., in accordance with themes that reflect investor needs.
Appropriate and effective feedback	Input from shareholders and other investors is shared with management and Group companies and is used to enhance communications.
Control of insider information	We are implementing information disclosure in a fair and impartial manner in accordance with our disclosure policy.

Initiatives to Enhance Dialogue

For institutional investors

- Implementing quarterly financial results presentations (4 times)
- Participating in IR conferences in Japan and overseas (10 times)
- Holding NTT IR DAY (briefing for institutional investors, 1 time)
- Implementing one-on-one briefings in Japan and overseas (total of more than 350 times)
  (Topics: medium-term management strategy, financial results, corporate governance, etc.)

For individual investors

- Implementing Company briefings (19 times)
  (including 4 company briefings by senior executives)
- Implementing online Company briefings (1 times)
- Participating in individual investor fairs (1 time)
- Holding facility tours (1 time)

Note: The numbers of times are for the fiscal year ended March 31, 2018.

Receipt of Awards for IR Activities

Awards for Excellence in Corporate Disclosure

(The Securities Analysts Association of Japan)

Internet IR Commendation Awards

(Daiwa Investor Relations)

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 November 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 WEB http://www.ntt.co.jp/csr_e/governance/compliance.html

Organization for Implementation

NTT Group has established Corporate Ethics Committees and appointed 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 2018, 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 again in fiscal 2018.

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.

Corporate ethics website for employees

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.

Anti-Bribery Handbook

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 110). 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 (FY2016–FY2018)

	FY2016		FY2017		FY2018	
	Number of Reports		Number of Reports		Number of Reports	
		# with discipline		# with discipline		# with discipline
Overall Number of Reports	**304**	**16 (1)**	**365**	**32 (5)**	**350**	**23 (1)**
Compliance Violations	**63**	**16 (1)**	**103**	**32 (5)**	**98**	**23 (1)**
• Violation of Internal Rules	63	16 (1)	103	32 (5)	98	23 (1)
• Violation of Laws and Regulations	0	0	0	0	0	0
No Violation	**241**	–	**262**	–	**252**	–
Harassment: Number of Reports	**119**	**2 (0)**	**154**	**10 (0)**	**168**	**15 (0)**
Compliance Violations	**21**	**2 (0)**	**33**	**10 (0)**	**38**	**15 (0)**
• Violation of Internal Rules	21	2 (0)	33	10 (0)	38	15 (0)
• Violation of Laws and Regulations (Violation of Human Rights)	0	0	0	0	0	0
No Violation	**98**	–	**121**	–	**130**	–
Misconduct: Number of Reports	**70**	**4 (0)**	**77**	**2 (0)**	**73**	**1 (0)**
Compliance Violations	**9**	**4 (0)**	**17**	**2 (0)**	**24**	**1 (0)**
• Violation of Internal Rules	9	4 (0)	17	2 (0)	24	1 (0)
• Violation of Laws and Regulations (Bribery, Accounting Fraud, Disguised Contracting, etc.)	0	0	0	0	0	0
No Violation	**61**	–	**60**	–	**49**	–
Fraud (personal use of company funds): Number of Reports	**37**	**4 (1)**	**38**	**11 (2)**	**32**	**5 (1)**
Compliance Violations	**14**	**4 (1)**	**16**	**11 (2)**	**12**	**5 (1)**
• Violation of Internal Rules	14	4 (1)	16	11 (2)	12	5 (1)
• Violation of Laws and Regulations	0	0	0	0	0	0
No Violation	**23**	–	**22**	–	**20**	–
Other: Number of Reports	**78**	**6 (0)**	**96**	**9 (3)**	**77**	**2 (0)**
Compliance Violations	19	6 (0)	37	9 (3)	24	2 (0)
• Violation of Internal Rules	19	6 (0)	37	9 (3)	24	2 (0)
• Violation of Laws and Regulations	**0**	**0**	**0**	**0**	**0**	**0**
No Violation	**59**	–	**59**	–	**53**	–

* Numbers in parenthesis 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.

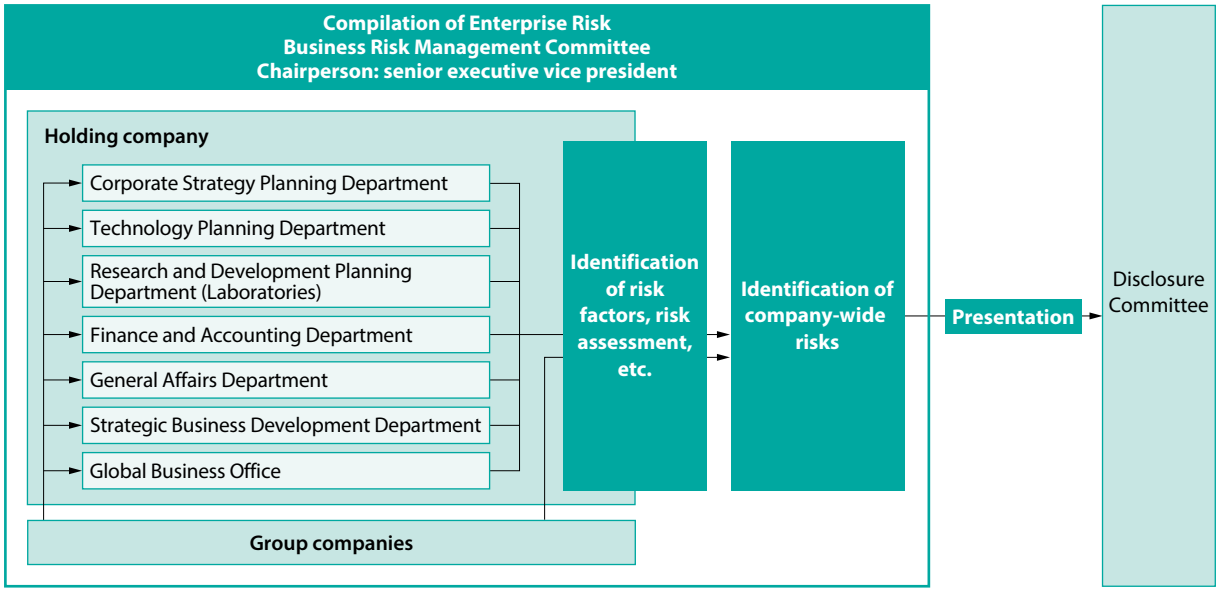
In addition, each Group company has formulated its own manuals and other guidelines, which reflect its specific business operations, business environment, and other factors, and is using these materials to control business risks.

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.

Risk Management System Diagram



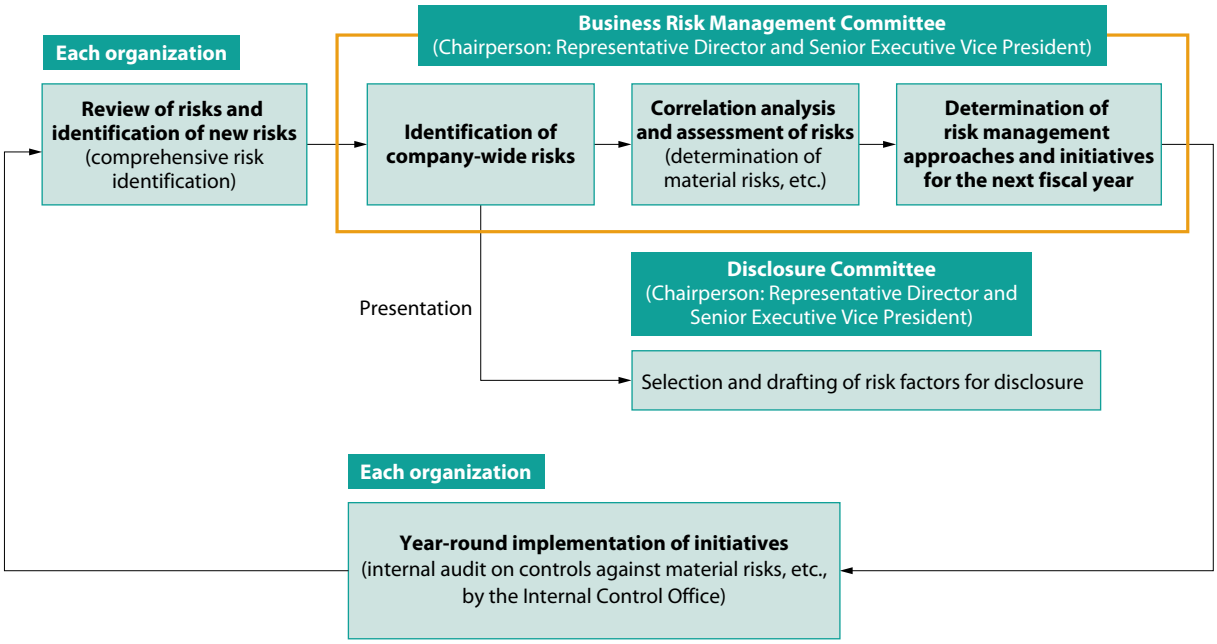
Identifying Material Risks

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.

Risk Management Process



Response to Individual Risks

Information Security Risk

If there is a leak or other misuse of confidential information such as personal information, the action may damage the credibility and reputation of NTT Group and affect its business.

To prevent such a situation, NTT Group is making rigorous efforts to protect confidential information obtained in the course of its business, including the personal information of customers. In addition, NTT Group has formulated the NTT Group Information Security Policy (see page 85), under which it is developing a management system, taking rigorous steps aimed at preventing illegal access to information or the loss, modification, or leakages of information, holding annual training for officers and awareness-raising for officers and employees, conducting appropriate oversight of outsourcing partners, and publishing manuals.

Furthermore, in NTT Group internal audits, we confirm the state of control with risk taken into account, and confirm key management items related to information security risk.

NTT Group Information Security Policy WEB http://www.ntt.co.jp/g-policy/index.html (Japanese only)

Protection of Personal Information WEB http://www.ntt.co.jp/kojinjo/index.html (Japanese only)

Risks Related to Disasters

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.

Damage prevention measures require an ongoing process of periodic review to reflect the latest knowledge and legal revisions. In June 2014, the Japanese government revised the Nankai Trough Earthquake Countermeasures Basic Plan. In response, NTT Group has revised and strengthened the Disaster Management Operation Plan.

Pandemic Risk

The global spread of novel influenza and other infectious diseases has had a major influence on economies and lifestyles. In this setting, countermeasures have become a social issue.

In accordance with the Act on Special Measures for Countermeasures against Novel Influenza that was promulgated in 2012, NTT, NTT East, NTT West, NTT Communications, and NTT DOCOMO are designated public institutions. In response, in March 2014 NTT Group formulated the Novel Influenza Countermeasures Plan. In accordance with the stages of an outbreak of novel influenza or other diseases, we have created a specific plan for the fulfillment of our responsibilities as designated public institutions and for the prevention of infection from the viewpoint of respect for human life.

We also take action to prepare against novel influenza and other diseases by conducting response training in correlation with national training organized by the government.

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 56).

Please see page 70 for details about climate change risks and opportunities.

Emerging Risks*

Risk of service interruptions caused by the growing size and frequency of natural disasters due to climate change

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.

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 the 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 the 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 them of any changes to regulations, and supervises them.

(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 the 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 happening unless NTT and its consolidated subsidiaries file a petition of objection or tax lawsuit.

Income Taxes Paid

	FY2017 (Billions of yen)
Japan	414.4
Others	38.4
Total	**452.8**

Intellectual Property Management

Protection and Utilization of Intellectual Property

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, trends concerning intellectual property including disputes and court cases.

NTT Intellectual Property Center WEB http://www.ntt.co.jp/chizai/e/index.html

Independent Assurance Statement

SusA
Sustainability Accounting Co., Ltd.

Independent Assurance Statement

September 25, 2018

Mr. Jun Sawada
President and Chief Executive Officer, Representative 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, 2017 to March 31, 2018) reported on NTT Group Sustainability Report 2018 which indicate the results of each indicator for "Ensure Reliable Communication" and "Unite the Energies of Team NTT" under CSR Priority Activities, CO_2 emissions; 0.19 million t-CO_2 for Scope1, 4.21 million t-CO_2 for Scope2 and 17.1 million t-CO_2 for Scope3, 531 thousand tons of total waste, and 12.59 million m^3 of water use. 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.

We have no conflict of interest relationships with the Company.

Takashi Fukushima
Representative Director
Sustainability Accounting Co., Ltd.

Comparative Table with GRI Standards

General Standard Disclosures

Disclosure	Indicator	Page	
Organizational Profile			
102-1	**Name of the organization** a. Name of the organization.	P012	Basic Information
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.	P012	Basic Information
102-3	**Location of headquarters** a. Location of the organization's headquarters.	P005	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.	P012	NTT Group in Brief Reference: List of NTT Group companies http://www.ntt.co.jp/gnavi_e/index.html
102-5	**Ownership and legal form** a. Nature of ownership and legal form.	P012	Basic Information
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.	P012-013	Basic Information
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.	P012-013	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.	P012-013 P100-106	Basic Information Promote diversity
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.	P111-114	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.	P013	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.	P069 P070 P152-155	Opportunities Arising from Climate Change Adaptation to Climate Change Risk Management

Disclosure	Indicator	Page	
Organizational Profile			
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.	P063 P087 P088	Pursuing Initiatives across the Industry for Energy-Efficient ICT Devices Management of CSIRT Contributing to developing Security Experts in Japan
102-13	**Membership of associations** a. A list of the main memberships of industry or other associations, and national or international advocacy organizations.	P013	List of Memberships
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.	P006-011	Top Message
102-15	**Key impacts, risks, and opportunities** a. A description of key impacts, risks, and opportunities.	P006-011 P069-071 P152-155	Top Message Risks and Opportunities Related to 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.	P016 P053 P055 P108 P147	NTT Group CSR Charter NTT Group Global Environmental Charter The 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.	P150	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.	P023 P060 P132-134 P152	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.	P023	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.	P023 P135-136	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.	P026-031	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.	P132-146	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.	P135-137	Board of Directors

Disclosure	Indicator	Page	
Governance			
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.	P137 P140 P141	Nomination Policies and Procedure for Members of the Board Nomination Policy and Procedure for Audit & Supervisory Board Members Nomination Procedure for Outside Members of the Board and Outside 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.	P132-146	Corporate Governance
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.	P023 P132-134	CSR Management System Overview of Corporate Governance Systems
102-27	a. Measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental, and social topics.	P137 P140	Training for Members of the Board Support Structures for Audit & Supervisory Board Members
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.	P023 P069-071 P152-155	CSR Management System Risks and Opportunities Related to 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.	P023 P152-155	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.	P023 P152-155	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.	P023	CSR Management System
102-33	**Communicating critical concerns** a. Process for communicating critical concerns to the highest governance body.	P026-031 P044 P110 P125 P145 P150	Stakeholder Engagement Customer Contact Points Contact Point for Human Rights Issues Favorable Labor-Management Relationship Dialogue with Shareholders and Other Investors 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.	P150	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.	P135-136 P143	Board of Directors Compensation of Members of the Board and Audit & Supervisory Board Members

Disclosure	Indicator	Page	
Governance			
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.	P143	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.	P143	Compensation of Members of the Board and Audit & Supervisory Board Members
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. 5.1:1	
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.	P029-030	Major Stakeholders
102-41	**Collective bargaining agreements** a. Percentage of total employees covered by collective bargaining agreements	P125	Favorable Labor-Management Relationship
102-42	**Identifying and selecting stakeholders** a. The basis for identifying and selecting stakeholders with whom to engage.	P026-031	Stakeholder 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.	P026-031	Stakeholder 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.	P026-031	Stakeholder 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.	P012	NTT Group in Brief Reference: List of NTT Group companies http://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.	P018-022	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.	P018-022	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.	P004	Reporting Period
102-51	**Date of most recent report** a. If applicable, the date of the most recent previous report.	P004	Reporting Period
102-52	**Reporting cycle** a. Reporting cycle.	P004	Reporting Period
102-53	**Contact point for questions regarding the report** a. The contact point for questions regarding the report or its contents.	P005	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'.	—	

Disclosure	Indicator	Page	
Reporting Practice			
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 Standards); ii. the page number(s) or URL(s) where the information can be found, either within the report or in other published materials; iii. if applicable, and where permitted, the reason(s) for omission when a required disclosure cannot be made.	GRI Standard Guidelines (refer to this table)	
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.	P159	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.	P033 P040 P043 P047 P053-059 P066 P077 P082 P085 P092 P094 P100 P107 P111 P115 P120 P129	Contribute to society through ICT Improve access to ICT Pursue customer satisfaction Generate innovation Our Thinking Concerning the Environment Realizing a Low Carbon Future Implementing Closed Loop Recycling Planning a Future of Natural Harmony Reinforcing Information Security Personal Information Protection Ensuring Stable and Reliable Communications Services Promoting Diversity Respect for Human Rights Reinforcing Value Chain Management Promoting the Safety, Health, and Welfare of Employees Creating Attractive Workplaces Promoting 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	P033 P040 P043 P047 P053-059 P066 P077 P082 P085 P092 P094 P100 P107 P111 P115 P120 P129	Contribute to society through ICT Improve access to ICT Pursue customer satisfaction Generate innovation Our Thinking Concerning the Environment Realizing a Low Carbon Future Implementing Closed Loop Recycling Planning a Future of Natural Harmony Reinforcing Information Security Personal Information Protection Ensuring Stable and Reliable Communications Services Promoting Diversity Respect for Human Rights Reinforcing Value Chain Management Promoting the Safety, Health, and Welfare of Employees Creating Attractive Workplaces Promoting a United Group Effort on Social Contribution Activities
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

Disclosure	Indicator	Page	
200: Economic			
Economic Performance			
201-1	Direct economic value generated and distributed	P012 P122 P130	Basic Information Improving Human Resource Management and Payment Systems Results of Corporate Citizenship Activities in Fiscal 2018
201-2	Financial implications and other risks and opportunities due to climate change	P069-071	Risks and Opportunities Related to Climate Change
201-3	Defined benefit plan obligations and other retirement plans	Reference: Annual securities report (Note 15. Retirement benefits, pages 110-119) http://www.ntt.co.jp/ir/library/yuho/pdf/33yuho.pdf (Japanese)	
201-4	Financial assistance received from government	Reference: Annual securities report, Major Shareholders, page 55) (Japanese only)	
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	P033-039 P040-042 P094-097	Contribute to society through ICT Improve access to ICT Ensuring Stable and Reliable Communications Services
203-2	Significant indirect economic impacts	P033-039 P040-042 P080	Contribute to society through ICT Improve access to ICT Management of CSIRT
Procurement Practices			
204-1	Proportion of spending on local suppliers	—	
Anti-corruption			
205-1	Operations assessed for risks related to corruption	P148	Prevention of Bribery
205-2	Communication and training about anti-corruption policies and procedures	P149	Initiatives to Promote Awareness of the NTT Group Corporate Ethics Charter
205-3	Confirmed incidents of corruption and actions taken	P149	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	P148	Compliance with Anti-Monopoly Laws
300: Environmental			
Materials			
301-1	Materials used by weight or volume	P065 P080-081	Environmental Impacts Overview Paper Management and Recycling
301-2	Recycled input materials used	P065 P077-079	Environmental Impacts Overview Implementing Closed Loop Recycling
301-3	Reclaimed products and their packaging materials	P065 P077-079 P080-081	Environmental Impacts Overview Implementing Closed Loop Recycling Paper Management and Recycling
Energy			
302-1	Energy consumption within the organization	P065 P072-073 P074	Environmental Impacts Overview CO_2 Emissions of NTT Group Use of Clean Energy
302-2	Energy consumption outside of the organization	P065 P075	Environmental Impacts Overview Increasing Low-Emission Company Vehicles
302-3	Energy intensity	—	
302-4	Reduction of energy consumption	P056-058 P066-076	The Eco Strategy 2030 Realizing a Low Carbon Future
302-5	Reduction in energy requirements of products and services	P066-076	Realizing a Low Carbon Future

Disclosure	Indicator	Page	
Water			
303-1	Water withdrawal by source	P065 P080	Environmental Impacts Overview Water Management
303-2	Water sources significantly affected by withdrawal of water	P080	Water Management
303-3	Water recycled and reused	P080	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	P082-083	Planning a Future of Natural Harmony
304-2	Significant impacts of activities, products, and services on biodiversity	P082-083	Planning a Future of Natural Harmony
304-3	Habitats protected or restored	P082-083	Planning a Future of Natural Harmony
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	P082-083	Planning a Future of Natural Harmony
Emissions			
305-1	Direct (Scope 1) GHG emissions	P065 P072-073	Environmental Impacts Overview CO_2 Emissions of NTT Group
305-2	Energy indirect (Scope 2) GHG emissions	P065 P072-073	Environmental Impacts Overview CO_2 Emissions of NTT Group
305-3	Other indirect (Scope 3) GHG emissions	P065 P073	Environmental Impacts Overview Indirect GHG Emissions Generated over the whole Value Chain (Scope 3 Categories)
305-4	GHG emissions intensity	—	
305-5	Reduction of GHG emissions	P056-058 P066-074	The Eco Strategy 2030 Realizing a Low Carbon Future
305-6	Emissions of ozone-depleting substances (ODS)	P076	Initiatives for Protecting the Ozone Layer
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	—	
Effluents and Waste			
306-1	Water discharge by quality and destination	P065 P080	Environmental Impacts Overview Water Management
306-2	Waste by type and disposal method	P056-058 P065 P078	The Eco Strategy 2030 Environmental Impacts Overview Waste Discharged by NTT Group
306-3	Significant spills	P078 P080	Hazardous Waste Water Management
306-4	Transport of hazardous waste	P078	Hazardous Waste
306-5	Water bodies affected by water discharges and/or runoff	P080	Water Management
Environmental Compliance			
307-1	Non-compliance with environmental laws and regulations	P064	Compliance with Environmental Laws and Regulations
Supplier Environmental Assessment			
308-1	New suppliers that were screened using environmental criteria	P063 P111-114	Pursuing Initiatives across the Industry for Energy-Efficient ICT Devices Reinforcing Value Chain Management
308-2	Negative environmental impacts in the supply chain and actions taken	P111-114	Reinforcing Value Chain Management
400: Social			
Employment			
401-1	New employee hires and employee turnover	P101 P103 P105	Data New graduate hiring by Group companies Employment of Non-Japanese
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	P105 P105 P122 P124	Continuous Employment of Retired Employees Rehiring Program for retired employees Promoting Work-Life Management Support for Balancing Work with Childcare or Nursing Care
401-3	Parental leave	P124	Support for Balancing Work with Childcare or Nursing Care
Labor/Management Relations			
402-1	Minimum notice periods regarding operational changes	P125	Favorable Labor-Management Relationship

Disclosure	Indicator	Page	
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	P115-119	Promoting the Safety, Health, and Welfare of Employees
403-3	Workers with high incidence or high risk of diseases related to their occupation	P116 P116	Thorough Occupational Safety and Health Activities to Eliminate Accidents
403-4	Health and safety topics covered in formal agreements with trade unions	P115-119	Promoting the Safety, Health, and Welfare of Employees
Training and Education			
404-1	Average hours of training per year per employee	P126-127	Helping Employees Develop their Abilities
404-2	Programs for upgrading employee skills and transition assistance programs	P105 P126-128	Continuous Employment of Retired Employees Human Resource Development
404-3	Percentage of employees receiving regular performance and career development reviews	P121	Fair Evaluation and Compensation
Diversity and Equal Opportunity			
405-1	Diversity of governance bodies and employees	P100-106 P133	Promoting Diversity Composition of Board of Directors / 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	P110	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	P107-110 P111-114 P125	Respect for Human Rights Reinforcing Value Chain Management Favorable Labor-Management Relationship
Child Labor			
408-1	Operations and suppliers at significant risk for incidents of child labor	P107-110 P111-114	Respect for Human Rights Reinforcing Value Chain Management
Forced or Compulsory Labor			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	P107-110 P111-114	Respect for Human Rights Reinforcing 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	P110	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	P107-110	Respect for Human Rights
412-2	Employee training on human rights policies or procedures	P109	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	P111-114 P148	Reinforcing Value Chain Management Prevention of Bribery
Local Communities			
413-1	Operations with local community engagement, impact assessments, and development programs	P098 P129-131	Safety-Related Legal Compliance and Telecommunications User Etiquette Promoting 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	P111-114 P148	Reinforcing Value Chain Management Prevention of Bribery
414-2	Negative social impacts in the supply chain and actions taken	P111-114 P148	Reinforcing Value Chain Management Prevention of Bribery
Public Policy			
415-1	Political contributions	P148	Prevention of Bribery

Disclosure	Indicator	Page	
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	P096 P098	Securing the Stability and Reliability of Communications Services Safety-Related Legal Compliance and Telecommunications User Etiquette
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	Not applicable	
Socioeconomic Compliance			
419-1	Non-compliance with laws and regulations in the social and economic area	Not applicable	

Inquiries

NIPPON TELEGRAPH AND TELEPHONE CORPORATION
CSR Promotion Office, General Affairs Department
Otemachi First Square East Tower, 5-1, Otemachi 1-chome, Chiyoda-ku, Tokyo 100-8116, Japan
Tel: 81-3-6838-5560 Fax: 0120-145579