Accelerating our self-transformation to become 

Your Value Partner
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Message from the CEO ................................................. 2
Overview
History of NTT Group’s Self-Transformation .......................... 10
Path of NTT Group’s Self-Transformation ............................ 12
NTT Group Formation .................................................. 14
Performance Highlights ................................................ 16
Non-Financial Highlights .............................................. 18
Shareholder Returns ..................................................... 19
Strategy
Value Creation Process .............................................. 20
Outline of New Medium-Term Management Strategies ............... 22
Special Feature: Next-Generation Smart City Initiatives ............ 24
Research and Development ........................................... 30
ESG Management for Corporate Value Improvements .......... 36
Value Creation through Social and Environmental Contributions 38
Initiatives for Addressing Material Issues
1 Reduction of Environmental Impact .......................... 38
2 Reinforcement of Information Security and Personal Information Protection ................. 44
3 Development of Frameworks for Encouraging of Participation by Diverse Human Resources ............................... 48
4 NTT Group’s Basic Policy for Stakeholder Engagement ......... 54
5 Corporate Governance ................................................. 56

Forward-Looking Statements
The forward-looking statements and projected figures concerning future performance of NTT and its subsidiaries and affiliates contained or referred to in this report are based on a series of assumptions, projections, estimations, judgments, and beliefs of the management of NTT in light of information currently available to it regarding the economy, the telecommunications industry in Japan, and other factors. These projections and estimates may be affected by the future business operations of NTT and its subsidiaries and affiliates, the state of the economy in Japan and abroad, possible fluctuations in the securities market, the pricing of services, the success of competition, the performance of new products, services, and new businesses, changes to laws and regulations affecting the telecommunications industry in Japan and elsewhere, and other changes in circumstances that could cause actual results to differ materially from the forecasts contained or referred to in this report.

Editorial Policy
This is an integrated report that combines information that is important to shareholders and investors, including not only such information as growth strategies and financial results but also environmental (E), social (S), and governance (G) information. The report focuses on explanations of NTT Group’s initiatives targeting increases in corporate value over the medium to long term. In editing this report, reference was made to the International Integrated Reporting Framework of the International Integrated Reporting Council (IIRC). The report is intended to help readers better understand NTT Group, which is accelerating its self-transformation to become “Your Value Partner” and working to increase corporate value by contributing to the realization of a sustainable society.

Operation
Operations in Review
Regional Communications Business ................................ 74
Long Distance and International Communications Business .......... 76
Mobile Communications Business .................................... 78
Data Communications Business ........................................ 80
Other Businesses .......................................................... 82
NTT Group Topics ........................................................ 84
Financial Section .......................................................... 96
Consolidated Subsidiaries ................................................ 98
Glossary of Terms .......................................................... 99
Stock Information .......................................................... 101

Contents
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 difficulty 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” 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 services and 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, 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 (see “Special Feature: Next-Generation Smart City Initiatives” on page 24 for details).

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 internationalization of our R&D activities in the global market.

In Japan, we must accept the fact that the growth of our traditional telecommunications business will 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 overseas 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 5P100 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 strategy 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 (see “Outline of New Medium-Term Management Strategies” on page 22 for details).

**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.
1952 Establishment of Nippon Telegraph and Telephone Corporation

1952

1985 Transition to Holding Company Structure

1988 Start of Provision of i-mode

1991 Start of provision of mobile phone service

2000 Start of provision of Home ISDN

2004 Acquisition of Dimension Data and Kaveo

2010 Announcement of “Towards the Next Stage 2.0” Medium-Term Management Strategy

2012 Establishment of YouTube, LLC, in the United States

2013 Start of provision of i-mode TV

History of NTT Group’s Self-Transformation

The historical development of NTT Group is marked by a series of transformative moments, beginning with the establishment of the Nippon Telegraph and Telephone Corporation in 1952.

- **1952**: Establishment of Nippon Telegraph and Telephone Corporation. The telegraph and telephone business operated by the Ministry of Communications and the Ministry of Telecommunications was transferred to Nippon Telegraph and Telephone Public Corporation.

- **1968**: Establishment of NTT DOCOMO. Nippon Telegraph and Telephone Public Corporation privatized to Nippon Telegraph and Telephone Corporation, which became referred to as “NTT.”

- **1985**: Transition to Holding Company Structure. NTT Group transitioned to a holding company structure.

- **1988**: Start of Provision of i-mode. This service, which allowed for text messaging to be performed via the Internet through mobile phones, revolutionized communication services.

- **1991**: Start of Provision of Mobile Phone Service. NTT DOCOMO offered the world’s first commercial mobile phone service.

- **1992**: Launch of Household Optical Fiber Services. NTT Group began the full-fledged rollout of high-speed, large-capacity telecommunications services.

- **2000**: Start of Provision of Home ISDN. This was a major step in the evolution of telecommunications technology.

- **2004**: Acquisition of Dimension Data and Kaveo. These acquisitions poised the Group to provide comprehensive ICT services.

- **2010**: Announcement of “Towards the Next Stage 2.0” Medium-Term Management Strategy. This strategy aimed to enhance global presence and strengthen the Group’s core businesses.

NTT Group has been at the forefront of innovation, pushing the boundaries of what is possible in telecommunications and technology. From the early days of the telegraph and telephone to cutting-edge 5G networks, NTT Group has continually evolved to meet the needs of an ever-changing global landscape.
With a constant eye to the future, NTT Group undergoes dynamic self-transformation to maintain its standing as a partner supporting industry and society. Customer input is the guiding force behind our activities, constantly propelling us forward to support the transformations of customers with our accumulated experience and cutting-edge technologies in our quest to create a better society. We commit ourselves to shaping a more fulfilling future for Japan and the world founded on reliability and innovation.

Historic Transformations

Transition from Telephones to Broadband and Mobile Services
- Contracts for fixed-line communications service contracts peaked at 63 million on March 31, 1998, declining thereafter to reach 19.87 million on March 31, 2018, due in part to the spread of mobile communications services
- Fixed-line broadband service contracts stood at 21.31 million on March 31, 2018, following steady growth each year since the launch of household optical fiber services in 2001

Change in Earnings Structure Focus from Voice to System Integration and IP
- Earnings initially consisted of mainly telephony services (voice revenues) after privatization
- Earnings now consist of mainly system integration and IP services revenues due to transformation of business structure in line with market changes

Transition from Operations Centered on Voice Services to Operations Centered on SI / IP Services
- Operating revenues ¥5.1 trillion, Operating income ¥0.76 trillion in 2001
- Operating revenues ¥11.8 trillion, Operating income ¥1.64 trillion in 2018

Future Transformations

Shift in Focus from Domestic to Global Businesses
- Enhancement of service provision capabilities of Group companies and coordinated up-selling and cross-selling efforts contributing to steady growth in operating revenues and operating income
- Further enhancement of Groupwide service provision capabilities to boost competitiveness and profitability in global market

Overseas Sales / Operating Income
- Overseas sales US$15.0 billion, Operating income US$0.67 billion in 2015
- Overseas sales US$16.9 billion, Operating income US$1.6 billion in 2018

Reversal in Role from Main Player to Catalyst for Service Providers Falling under the Second B
- For the acceleration of new value creation, NTT Group drives collaboration with various service providers
- Contribute to service providers’ digital transformations for lifestyle change and social issue resolution as a valuable supporting player
Performance Highlights

NTT Group has applied International Financial Reporting Standards (IFRS) beginning with the three months ended June 30, 2018. All figures contained on pages 16 and 17 are based on U.S. GAAP. Please refer to “Financial Summary” on page 86 for detailed performance figures by fiscal year.

Financial Data

Operating Revenues

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Depreciation and Amortization

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Interest-Bearing Liabilities / D/E Ratio

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Capital Investment / Capex to Sales Ratio

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Net Income Attributable to NTT per Share

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<td>453</td>
</tr>
<tr>
<td>2013</td>
<td>452</td>
</tr>
<tr>
<td>2014</td>
<td>451</td>
</tr>
<tr>
<td>2015</td>
<td>450</td>
</tr>
<tr>
<td>2016</td>
<td>449</td>
</tr>
<tr>
<td>2017</td>
<td>448</td>
</tr>
<tr>
<td>2018</td>
<td>447</td>
</tr>
</tbody>
</table>

Ratings

- Moody’s: Baa1/BBB+
- S&P: A2/A+

Operational Data

Fixed-Line Broadband Services Subscriptions

<table>
<thead>
<tr>
<th>Year ended March 31</th>
<th>(Thousands of subscriptions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>21,313</td>
</tr>
<tr>
<td>2010</td>
<td>22,012</td>
</tr>
<tr>
<td>2011</td>
<td>22,713</td>
</tr>
<tr>
<td>2012</td>
<td>23,414</td>
</tr>
<tr>
<td>2013</td>
<td>24,116</td>
</tr>
<tr>
<td>2014</td>
<td>24,818</td>
</tr>
<tr>
<td>2015</td>
<td>25,520</td>
</tr>
<tr>
<td>2016</td>
<td>26,222</td>
</tr>
<tr>
<td>2017</td>
<td>26,924</td>
</tr>
<tr>
<td>2018</td>
<td>27,626</td>
</tr>
</tbody>
</table>

Mobile Communications Services Subscriptions

<table>
<thead>
<tr>
<th>Year ended March 31</th>
<th>(Thousands of subscriptions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>76,370</td>
</tr>
<tr>
<td>2010</td>
<td>81,032</td>
</tr>
<tr>
<td>2011</td>
<td>85,694</td>
</tr>
<tr>
<td>2012</td>
<td>90,356</td>
</tr>
<tr>
<td>2013</td>
<td>95,018</td>
</tr>
<tr>
<td>2014</td>
<td>99,680</td>
</tr>
<tr>
<td>2015</td>
<td>104,342</td>
</tr>
<tr>
<td>2016</td>
<td>109,004</td>
</tr>
<tr>
<td>2017</td>
<td>113,666</td>
</tr>
<tr>
<td>2018</td>
<td>118,328</td>
</tr>
</tbody>
</table>

ARPU of FLET’S Hikari

<table>
<thead>
<tr>
<th>Year ended March 31</th>
<th>(Yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>3,190</td>
</tr>
<tr>
<td>2010</td>
<td>3,215</td>
</tr>
<tr>
<td>2011</td>
<td>3,240</td>
</tr>
<tr>
<td>2012</td>
<td>3,265</td>
</tr>
<tr>
<td>2013</td>
<td>3,290</td>
</tr>
<tr>
<td>2014</td>
<td>3,315</td>
</tr>
<tr>
<td>2015</td>
<td>3,340</td>
</tr>
<tr>
<td>2016</td>
<td>3,365</td>
</tr>
<tr>
<td>2017</td>
<td>3,390</td>
</tr>
<tr>
<td>2018</td>
<td>3,415</td>
</tr>
</tbody>
</table>

Mobile Aggregates ARPU

<table>
<thead>
<tr>
<th>Year ended March 31</th>
<th>(Yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2,580</td>
</tr>
<tr>
<td>2010</td>
<td>2,605</td>
</tr>
<tr>
<td>2011</td>
<td>2,630</td>
</tr>
<tr>
<td>2012</td>
<td>2,655</td>
</tr>
<tr>
<td>2013</td>
<td>2,680</td>
</tr>
<tr>
<td>2014</td>
<td>2,705</td>
</tr>
<tr>
<td>2015</td>
<td>2,730</td>
</tr>
<tr>
<td>2016</td>
<td>2,755</td>
</tr>
<tr>
<td>2017</td>
<td>2,780</td>
</tr>
<tr>
<td>2018</td>
<td>2,805</td>
</tr>
</tbody>
</table>

*1 D/E ratio = Interest-bearing liabilities / Shareholders’ equity x 100
*2 Capital investment is recognized on an accrual basis for the acquisition of property, plant and equipment.
*3 Capital to sales ratio = Capital investment / Operating revenues x 100
Non-Financial Highlights

Environmental / Social Data

Environmental Data

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2 emissions volume*1 (Million tons of CO2)</td>
<td>4.46</td>
<td>5.08</td>
<td>4.89</td>
<td>4.59</td>
<td>4.39</td>
</tr>
<tr>
<td>Contribution to reduction in society’s CO2 emissions**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Taxes, compared with CO2 emissions from NTT Group)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculated from the fiscal year ended March 31, 2017</td>
<td>8.9</td>
<td>10.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical efficiency of communications services*1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Times, improvement from the fiscal year ended March 31, 2014)</td>
<td>1.15</td>
<td>0.88</td>
<td>0.82</td>
<td>1.03</td>
<td>1.18</td>
</tr>
<tr>
<td>Final disposal rate for waste (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 If Scope 1 (direct emissions from the use of fuel, etc.) and Scope 2 (indirect emissions accompanying the use of energy, such as electricity).
*2 Performance in comparison with LSI environmental targets.
** Calculated by converting the energy-saving benefits of supplied ICT services into CO2 savings.
*3 Calculated for five major domestic companies (NTT East, NTT West, NTT Communications, NTT DOCOMO, and NTT DATA).

Social Data

Numbers of Consolidated Group Companies and Employees

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Group companies (Companies)</td>
<td>946</td>
<td>917</td>
<td>907</td>
<td>944</td>
<td>922</td>
</tr>
<tr>
<td>Number of employees (Employees)</td>
<td>239,750</td>
<td>241,600</td>
<td>241,450</td>
<td>274,850</td>
<td>282,550</td>
</tr>
</tbody>
</table>

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

Employment

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Employees</td>
<td>239,750</td>
<td>241,600</td>
<td>241,450</td>
<td>274,850</td>
<td>282,550</td>
</tr>
<tr>
<td>Number of Managers*2 *3</td>
<td>109,200</td>
<td>116,000</td>
<td>17,200</td>
<td>26,110</td>
<td>28,350</td>
</tr>
</tbody>
</table>

*1 As of December 31, 2018.
*2 As of September 2018.
*3 As of June 2018.

Shareholder Returns

Annual Dividends

For the fiscal year ending March 31, 2019, NTT plans to issue annual dividends of ¥170 per share, making for the eighth consecutive year of higher dividends. Looking ahead, we will continue to increase dividend payments while giving consideration to stability and sustainability.

Share Buybacks

NTT has continued to conduct share buybacks over the years, acquiring treasury stock worth more than ¥3 trillion since 1999. We will maintain a flexible stance toward conducting share buybacks based on consideration of factors including performance and market trends as well as the need to improve capital efficiency.

External Evaluations

Dow Jones Sustainability Index

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>World As of August</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
<tr>
<td>Asia Pacific As of August</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
<tr>
<td>Japan As of August</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
</tbody>
</table>

*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

FTSE4 Good Index

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia Pacific As of August</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan As of August</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FTSE Blossom Japan Index

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of June</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
</tbody>
</table>

Morningstar Socially Responsible Investment Index

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of March</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
</tbody>
</table>

MSCI Japan ESG Select Leaders

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of December</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
</tbody>
</table>

S&P/NEFJ Carbon Efficient Index

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of September</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
</tbody>
</table>

Intellectual Property Related

Clarivate Analytics’ Top 100 Global Innovators

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of January</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
</tbody>
</table>

Brand Related

Brand Finance Global 500

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of August 2018</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
</tbody>
</table>

BrandZ Top 10 Most Valuable Global Brands 2018

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of August 2018</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
</tbody>
</table>

SRI Indexes and Other External Evaluations (\(\text{\textcopyright}\) Represents Inclusion)

Brand Related

Brand Finance Global 500

<table>
<thead>
<tr>
<th>Fiscal year ended March (¥)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
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<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
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</table>

BrandZ Top 10 Most Valuable Global Brands 2018

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<tr>
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<th>2015</th>
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</thead>
<tbody>
<tr>
<td>As of August 2018</td>
<td>120.0*1</td>
<td>120.0*1</td>
<td>116.0*1</td>
<td>115.0*1</td>
<td>115.0*1</td>
</tr>
</tbody>
</table>

- \(\text{\textcopyright}\) 2021 Interbrand

Note: Dividend amounts have been adjusted to reflect the 2-for-1 stock split of common stock conducted with an effective date of July 1, 2015.
Value Creation Process

NTT Group is working together with its partners to pursue ongoing improvements in its distinctive corporate value through digital transformations. In these transformations, we will leverage the strengths we have cultivated over the years, namely, our robust domestic and overseas customer base, our global brand image, our human resources, and world-leading R&D capabilities.

*1 No.1 shares for fiber-optic access services (approx. 68%) and mobile access services (approx. 45%) in Japan; 88% of the top 100 Fortune Global 500 companies are NTT customers.
*2 Rated 20th in the world in Brand Finance Global 500.
*3 116,000 employees (approximately 40% of all employees) work overseas.
*4 Included among Clarivate Analytics’ Top 100 Global Innovators.

Ongoing Improvements of Corporate Value

- Expansion of economic value
- Expansion of upside potential and reduction of downside risks

Creation of social value

- Social Issue Resolution
- Lifestyle Change

Contribution to the resolution of social issues worldwide

Support our customers’ Digital Transformations

Accelerate our own Digital Transformation

Leverage talent, technologies, and assets

Promote ESG management and enhance the returns to shareholders to improve corporate value

Outline of New Medium-Term Management Strategies

Accelerating our self-transformation to become “Your Value Partner” to contribute to the realization of a sustainable society

Management Fundamentals

Intelligence

People

Technical Expertise

Services Expertise

Shared Values

Connect

Trust

Integrity

Global / Local

Cutting Edge

Best in Class

Industry Leading
Prior to the announcement of the new medium-term management strategies scheduled for November 2018, NTT announced an outline of the strategies and some of its measures.

### Outline of New Medium-Term Management Strategies

**Support our customers’ Digital Transformations**
- Promote B2B2X model for new value creation
- Roll out 5th-Generation Wireless System
- Provide personal services to support individuals’ lifestyle changes

**Accelerate our own Digital Transformation**
- Enhance competitiveness in global business
- Drive digital self-transformation in domestic business

**Leverage talent, technologies, and assets**
- Reinforce and globalize R&D
- Create new lines of business (Real estate, Electric power)

**Promote ESG management and enhance returns to shareholders to improve corporate value**

**ESG Management**
Contribute to SDGs with low environmental load

<table>
<thead>
<tr>
<th>Energy Efficiency Goals for 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double the energy efficiency of telecom business</td>
</tr>
<tr>
<td>Reduce 10% of power consumption of telecom business</td>
</tr>
<tr>
<td>Convert power facilities into Direct-current</td>
</tr>
<tr>
<td>Saving energy in telecom facilities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transition to EV Goals in 2025***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convert 50% of general domestic corporate vehicles to EV</td>
</tr>
<tr>
<td>15% cost reduction of vehicles</td>
</tr>
</tbody>
</table>

**Plan to participate in EP100**

**Plan to participate in EV100**

### Drive Digital Self-Transformation in Domestic Business

Chief digital officers (CDOs) were appointed at Group companies and the IT Strategy Office was established at the NTT head office to accelerate overall efforts to drive the Group’s digital transformation and to facilitate the self-driven digital transformations of operating companies.

Appointed Chief Digital Officers within NTT Group (August 1, 2018)
- Will work to further enhance the efficiency of business processes and to provide new value-added services

Established IT Strategy Office at the NTT Head Office (September 1, 2018)
- Will further enhance IT strategy and IT governance of NTT Group, boosting Digital Transformation within NTT Group

### ESG Management

**Contribute to SDGs with low environmental load**

- **Transition to EV Goals in 2025***
  - Convert 50% of general domestic corporate vehicles to EV
  - 15% cost reduction of vehicles

- **Plan to participate in EV100**

### Enhance Competitiveness in Global Business

With the goals of enhancing our competitiveness and improving profitability in the global market, we will establish a global holding company under NTT by the third quarter of the fiscal-year ending March 31, 2019, and transfer control of NTT Communications, Dimension Data, NTT DATA, NTT Security, and NTT Innovation Institute to this company. In addition, a global innovation fund will be established under the jurisdiction of the global holding company along with a dedicated global procurement company.

Furthermore, NTT is considering integrating the four companies of NTT Communications, Dimension Data, NTT Security and NTT10 (excluding the NTT DATA group) into two new businesses by the second quarter of the fiscal year ending March 31, 2020: one business will look after NTT’s global business, and the other will cater to NTT’s domestic business in Japan.

### Current Status

**NIT**
- NTT Communications
- Dimension Data
- NTT DATA
- NTT Security
- NTT Innovation Institute

**Status from Fall 2018**
- Global Holding Company
- Global Innovation Fund
- Global Procurement Company*2

---

*1 NTT DATA will continue to collaborate with other Group companies while retaining its present management structure and status as a listed company.
*2 The dedicated global procurement company will procure the materials and services that are commonly used by domestic and overseas operating companies (excluding NTT, NTT East, and NTT West).

---

*EP100 and EV100 are international initiatives sponsored by The Climate Group. EP100 encourages companies to double the energy efficiency of their businesses. EV100, meanwhile, promotes the introduction of electric vehicles and related infrastructure.

***Target in 2030: 100% Electric Vehicle Integration, -30% reduction of cost related company owned fleet.
The digitization of information will allow for a variety of data to be collected, processed, and distributed via networks, making it possible for previously under-utilized information assets and expertise to be used more effectively. The advancement of the Internet of Things (IoT), meanwhile, will enable the conditions of various articles to be monitored in a timely fashion through smartphones and other mobile terminals as well as through network-connected sensors and monitors attached to machinery, buildings, and infrastructure. In addition, artificial intelligence (AI) will greatly increase the ability of service providers (the center B) to create new value by instantaneously processing and analyzing massive amounts of collected data. NTT Group looks to accelerate the development of B2B2X businesses in order to deliver value to end users. NTT Group will achieve this acceleration by providing backstage support to service providers in various fields as a catalyst while at the same time taking advantage of information digitization, the IoT, AI, and other social and technological developments.

NTT Group looks to accelerate the development of B2B2X businesses in order to deliver value to end users. NTT Group will achieve this acceleration by providing backstage support to service providers in various fields as a catalyst while at the same time taking advantage of information digitization, the IoT, AI, and other social and technological developments.

In this manner, NTT Group aspires to promote smart initiatives in all industries by fostering problem-solving capabilities and technologies that boast cross-industry applicability through actual cases of service provision. Moreover, NTT Group aims to deploy such smart initiatives inside Japan and throughout the global market in order to create a B2B2X model that extends beyond the boundaries of both companies and industries.
Digital Transformation of Regional Economic Spheres—Initiatives in Sapporo and Yokohama

Sapporo Smart City Initiatives (Population of Sapporo City: 2.0 Million; Project Budget: ¥1.6 Trillion)

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 innovating 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 decision making. 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.

Digital Services

(1) Commercial facilities, tourism
(2) Snow removal measures
Social infrastructure
Health, childcare
Culture and arts

B Center B (G)

NTT Group

DATA-SMART CITY SAPPORO

Digital Transformation

Data Management Platform

Ongoing support for service evolution
Service provision

Data sharing
Integration of data between companies
Data analysis, projection, etc.

Location data
Weather data

Digital Services

Local Snow Removal Companies

Information from veterans
Information from veterans
Local distribution companies

Local Snow Removal Companies

Manual preparation of daily snow-removal reports

Yokohama Smart City Initiatives (Population of Yokohama City: 3.7 Million; Project Budget: ¥3.6 Trillion)

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 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 governance 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 access the data and services they need at any time and in the amount required. This society would be the equivalent of an “ultra-smart society” or “ultra-smart city” that uses advanced technology to provide extremely 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.

Overview
Overview

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.

Joint Verification Test Involving the Installation of Numerous Sensors in Downtown 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
**Role of NTT Group’s Research and Development**

As a world-leading ICT conglomerate, NTT Group views research and development as a wellspring of new value to be created in diverse fields through the realization of new technologies. We also recognize that research and development is crucial to our efforts to support customers’ digital transformations as well as to transform individual lifestyles together with NTT Group operating companies. Furthermore, research and development helps us improve productivity; address safety, disaster preparedness, and other issues; and thereby strengthens the competitiveness of industries and resolves social issues. ICT is used in countless fields. We therefore look to overcome challenges through research and development that extends beyond NTT Group to include partnerships with entities from various other industries.

**Goals of NTT Group’s Research and Development and Five Key Technologies**

The technologies of the future will have to be made to feel more natural to people. There are three perspectives that will need to be adopted to accomplish this objective: "enhance," the perspective of ensuring that our intent is correctly understood and communicated; "unconscious," the perspective of allowing people to benefit from sophisticated technologies even if they are not consciously aware of them; and "barrier-free," the perspective of personalizing technologies to accommodate the differences between individuals.

From this standpoint of companies, there are even more perspectives that we must account for in future technologies. The perspective of "awareness" looks to maintain up-to-the-moment understanding of changes in customer behavior or operating environment conditions. The perspective of "data-centric" entails making decisions for reforming corporate work processes and creating new value through data processing techniques. The perspective of "sensitization" is focused on providing experiences as opposed to goods. Based on all of these perspectives, NTT Group is tasked with creating technologies that help forge stronger bonds between companies and their customers.

With this vision in mind, NTT Group has identified five key technologies that will be crucial for the future: artificial intelligence (AI), media, Internet of Things (IoT), security, and network technologies.

![Diagram of the five key technologies](http://www.ntt.co.jp/corevo/e/index.html)

**Productivity Improvement**

- Strengthening of Industry Competitiveness
- Resolution of Social Issues

**Safety and Disaster Awareness**

- Regional Development
- Environmental Sustainability

- Data-Centric
- Unconscious
- Barrier-Free
- Face Recognition

**Research and Development**

NTT Group contributes to the creation of a safer, more secure, and more innovative future with its world-leading technologies.

Under the NTT Group’s corevo® AI technology brand, we are advancing research and development on four types of AI technology with the goal of enriching people’s lives by complementing and drawing out their capabilities.

The first is Agent-AI, which supports people’s everyday lives by developing an understanding of people’s intents and emotions based on voice, language, and images to engage in high-level communication with people. In this area, our listening technologies can currently pick up a person’s voice even with more than 100 dB worth of background noise and can also distinguish between the voices of up to six people using the same microphone. In addition, these technologies are able to determine a speaker’s language with around 90% accuracy after one second of speaking and with approximately 99% accuracy after five seconds. Our listening technologies can also identify emotions, such as satisfaction, joy, and sadness as well as hot anger, which entails a roughened voice, and cold anger, which is expressed in a composed and sarcastic manner. Furthermore, NTT Group is developing technologies for understanding intent that will make it possible to judge the similarity of statements with the same sense but different character strings (e.g., "My golf balls don’t travel," and "How can I increase shot distance with a driver?").

NTT Group is also developing other technologies that make conversations with AIs feel more natural. One example is a technology that enables AI to respond at appropriate timings by identifying breaks in conversations or the conclusions of statements and to respond to new entries into conversations. Another example is a technology that can synthesize voice samples in Japanese or other languages in a voice similar to that of an individual by only using 30 minutes of voice data from the individual. In addition, NTT Group is working on a technology that allows for AIs to engage in prolonged small talk, which accounts for 60% of normal conversations.

*Further details on the corevo® AI technology brand can be found on NTT’s corporate website.*

http://www.ntt.co.jp/corevo/index.html
Immersive Telepresence Technology

NTT Group’s ultrahigh-immersion media technologies are largely based on three approaches: technologies for creating and transmitting spaces, which are exemplified by our Kiran® immersive telepresence technology; technologies that allow viewers to place themselves in a space, such as by watching a professional baseball player pitch from the viewpoint of the batter; and space direction technologies that take advantage of optical illusions to realize the simultaneous viewing of 2D and 3D images. Looking specifically at one of these technologies, the concept for our Kiran® immersive telepresence technology was announced in February 2015, and research and development for this technology has since advanced through verification tests in the sports and entertainment fields. In addition to previous immersion experiences, which were based on 2D movement, this technology is now able to incorporate depth to portray more natural movement and add a new dimension of immersion. Kiran® can therefore create new viewing experiences, such as displays in which numerous people view sporting events from multiple angles. Going forward, NTT Group will continue to evolve and improve the economic viability of element technologies to accelerate the development of services that revolutionize live viewing of sports and entertainment and corporate broadcasts.

Security

Ensuring safety and security in society and industry requires that we take steps to protect against cyberattacks. This protection cannot be limited to transmission networks; it must extend to IT systems comprising services and computers as well as the IoT systems of factories, buildings, and automobiles, which have been increasingly being connected to networks in recent years. NTT Group aids in this protection through research and development on encryption technologies that ensure data confidentiality and privacy and cybersecurity technologies that safeguard IT systems and IoT against cyberattacks.

In the IT security field, NTT Group has discovered a new privacy threat—Silhouette—in social web services (SWSs). We have since developed risk assessment methodologies and identified several SWSs at risk of being impacted by Silhouette. A new threat to privacy, Silhouette has the potential of identifying the name of a user of a SWS account from malicious third-party websites if a user of a SWS happens to visit such a site. This information can be used to target said user with various cyberattacks, including misuse of their personal information and victimization through online scams. We have already found cases in which the account names of users of Twitter and other globally recognized SWSs have been identified. NTT Group has thus been supplying SWS platform operators with information on this threat and possible countermeasures and working together with them to verify the effectiveness of these measures. Our research in this area has helped realize a safer Internet for users around the world.

IOT

The core requirements of IoT technologies can vary based on the field in which they are to be used, making it impossible to respond to the broad spectrum of IoT needs with a single platform. Conversely, the development of multiple IoT systems makes it difficult to apply technologies to future systems. For these reasons, the standardization of IoT architecture is of the utmost importance. NTT Group has defined basic IoT architecture and is using this architecture as a foundation for the development of IoT systems for various industrial fields. For example, NTT Group carried out a successful verification test for a next-generation shipping IoT platform for improving shipping safety and efficiency together with Nippon Yusen Kabushiki Kaisha and MTI Co., Ltd. The requirements for this platform differed from standard IoT platforms in that the distance between ships at sea and on-land operation centers forced us to rely on satellite transmissions, which suffer from incredibly low bit rates. The platform verified in this test used a framework in which data from the various sensors in a ship’s engine and navigation systems first underwent preliminary processing onboard the vessel. The processed data was then sent to operation centers, which used this data to oversee ship operations and transmit software updates. NTT Group plans to continue taking part in such verification tests going forward as it creates innovations with its partners in a bid to improve the safety and economic viability of shipping, address environmental issues, and boost the competitiveness of Japan’s maritime industry on the global stage.

Cloud-Based Countermeasures

Sophisticated analysis for detecting cyberattacks and pinpointing causes and damages by utilizing substantial data processing capabilities and a wealth of data from other vehicles’ logs and transmission traffic to outside of vehicles

In-Vehicle Countermeasures

Real-time analysis of control signals and other data to swiftly detect abnormalities resulting from cyberattacks

Overview

Engine

Brakes

Drivers

Doors

Engine information

Transmissions between ships and land

(Satellites, 3G, etc.)

Onboard

Applications

Distribution and management of applications used on ships

Ship Datacenter Co., Ltd.

Standard maritime industry cloud

Utilization of ship data across the industry

Cloud-Based Countermeasures

Detect abnormalities

Detect attacks

Monitoring / analysis

External transmission traffic and logs

Internal transmission traffic and logs

Cloud-Based Countermeasures

Detection / analysis

Transmissions

Vulnerability information

Analysis history

Threat information

Onboard

Applications

Application on transmission server

Transmission traffic to outside of vehicles

Service providers

Accurate countermeasure suppliers

Attacks

Monitoring / analysis

Transmissions

Vulnerability information

Analysis history

Threat information

Overseas

NTT Data Cloud

Installations of Party A

In-Vehicle Countermeasures

Detect abnormalities

Detect attacks

Monitoring / analysis

External transmission traffic and logs

Internal transmission traffic and logs
In a world first, NTT Group has realized 100 Gbps wireless transmission using a new principle—orbital angular momentum (OAM) multiplexing—with the aim of achieving terabit-class wireless transmission to support demand for wireless communications in the 2030s.

In a laboratory environment, NTT Group made remarkable progress in transmission capacity thanks to its system that mounts data signals on the electromagnetic waves generated by this new principle in combination with widely used multiple-input and multiple-output (MIMO) technology.

The results of this experiment revealed the possibility of applying this principle to large-capacity wireless transmissions at a level about 100 times that of LTE and Wi-Fi and about five times that of fifth-generation (5G), which is scheduled for launch. This transmission technology is expected to contribute to the development of innovative wireless communications technologies for such next-generation 5G systems as connected cars, virtual reality and augmented reality, high-definition video transmission, and remote medicine.

There are combinatorial optimization problems that are difficult to solve with conventional computers. Recognizing this issue, NTT Group is advancing research and development on a completely new type of computer—LASOLV, a portmanteau of the words “laser” and “solve.” This computer takes advantage of physical phenomena by using optical parametric oscillators to swiftly solve such problems.

Using model computers, which use superconductive elements and are also capable of solving such problems, require cooling systems as they can only be operated at temperatures of around –270°C. LASOLV, however, can function at room temperature. It also boasts world-leading capacity, currently capable of solving 2,000-node / 4 million-node combinatorial optimization problems, and we aim to realize computational power that can solve 100,000-node / 10 billion-node combinatorial optimization problems in the future.

It can be expected that the evolution of IoT technologies will lead to various sensors being installed throughout society. These sensors will require batteries. It will be impossible to recover batteries under certain circumstances, and it will therefore be important to ensure that these batteries do not adversely impact the environment. NTT’s solution to this predicament is its Tsuchinikaeru Battery®, a never-before-seen, eco-friendly battery that is non-toxic, does not use rare metals, and employs fertilizer material in its battery cells to prevent damage to soil and living organisms.

Currently, this battery is able to power lights or buzzers, but its capacity is only a tenth that of batteries currently on the market, meaning that additional research and development is needed to extend this short life span. We see potential for this battery to create new businesses where harmony with nature is required, such as soil moisture sensors; ecosystem, soil, and other environmental monitoring; and detection of indicators related to floods, pollution, and climate events.
### ESG Management for Corporate Value Improvements

NTT Group practices environmental, social, and governance (ESG) management to address environmental and social issues. We have defined the reduction of our environmental impact, security, and the encouragement of participation by diverse human resources as material issues for NTT Group. Based on these issues, we are working to minimize business risks while capturing business opportunities to drive ongoing improvements in corporate value.

#### Material Issues

**Protect the Global Environment**
- Contribution to reducing society’s CO2 emissions
- Reduction of the Group’s CO2 emissions
- Improvement of electricity efficiency
- Promotion of e-mobility

**Ensure Reliable Communications**
- Initiatives for protecting NTT Group’s communications networks and information systems
- Initiatives for supporting customers in reinforcing information security

**Unite the Energies of Team NTT**
- Diversity management
  - Empowerment of women in the workforce, employment of non-Japanese individuals
  - Consideration for members of the LGBT community and other sexual minorities
  - Expansion of employment of persons with disabilities
  - Work style reform initiatives

#### Sustainable Development Goals

<table>
<thead>
<tr>
<th>Goals</th>
<th>Initiatives</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expanding economic value</td>
<td>- Energy efficiency of telecommunications business: Double (by FY2025)*1 &lt;br&gt; - Reduction in energy consumption of telecommunications business: 10% (by FY2025)*2 &lt;br&gt; - Ratio of fleet of general company-use vehicles being electric vehicles: 50% (by FY2025)*2 &lt;br&gt; - Reduction in vehicle costs of 15% (by FY2025)*2 &lt;br&gt; - Final disposal ratio of waste: Zero emissions (under 1%) (by FY2025)*3 &lt;br&gt; etc.</td>
<td>- Energy efficiency of telecommunications business: Double (by FY2025)*1 &lt;br&gt; - Reduction in energy consumption of telecommunications business: 10% (by FY2025)*2 &lt;br&gt; - Ratio of fleet of general company-use vehicles being electric vehicles: 50% (by FY2025)*2 &lt;br&gt; - Reduction in vehicle costs of 15% (by FY2025)*2 &lt;br&gt; - Final disposal ratio of waste: Zero emissions (under 1%) (by FY2025)*3 &lt;br&gt; etc.</td>
</tr>
<tr>
<td>Ensuring reliable communications</td>
<td>- Initiatives for protecting NTT Group's communications networks and information systems &lt;br&gt; - Initiatives for supporting customers in reinforcing information security</td>
<td>- Number of incidents of personal information leaks: 0 &lt;br&gt; - Stable service provision rate: 99.99% &lt;br&gt; - Number of major accidents: 0 &lt;br&gt; etc.</td>
</tr>
<tr>
<td>Encouraging participation by diverse human resources</td>
<td>- Diversity management &lt;br&gt;  - Empowerment of women in the workforce, employment of non-Japanese individuals &lt;br&gt;  - Consideration for members of the LGBT community and other sexual minorities &lt;br&gt;  - Expansion of employment of persons with disabilities &lt;br&gt;  - Work style reform initiatives</td>
<td>- Ratio of female managers: 6.0% (by FY2020)*4 &lt;br&gt; - Ratio of persons with disabilities: 2.2% &lt;br&gt; - Employee satisfaction: Better than in the previous fiscal year &lt;br&gt; etc.</td>
</tr>
</tbody>
</table>

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*1 The SASB Sustainability Accounting Standards are metrics for quantitative representation of non-financial information put forth by the Sustainability Accounting Standards Board of the United States.
*2 Vs. fiscal year ended March 31, 2018
*3 Performance in the fiscal year ended March 31, 2018: 0.1%
*4 Performance in the fiscal year ended March 31, 2018: 1.18%
*5 Performance in the fiscal year ended March 31, 2018: 2.2%
Value Creation through Environmental and Social Contributions

NTT Group is committed to mitigating environmental and social risks and contributing to the resolution of issues across society.

Initiatives for Addressing Material Issues

Reduction of Environmental Impact

Reducing CO₂ emissions and otherwise lowering environmental impacts is recognized as an important issue needing to be addressed internationally in order to create a sustainable society. NTT Group is pursuing sustainable business development over the medium to long term. For this reason, NTT Group considers it absolutely essential to reduce its environmental impact in order to grow further.

NTT Group is therefore committed to reducing the environmental impact of its business activities while working together with stakeholders to create a future in which people and the planet are in harmony through the development and proliferation of ICT services and cutting-edge technologies.

The NTT Group Environmental Statement compiles our vision for the future of the global environment we aim to build with our stakeholders, our environmental initiatives for building that future, and the company we aim to become through these efforts. The declaration begins with the words “People & Planet in Harmony.” These words symbolize our goal of creating a future housing a sustainable society in which everyone and everything around the world is interconnected. To help realize such a future, we at NTT Group will push forward with our daily environmental activities to fully exercise our capabilities as forerunners in environmental contribution.

We have defined three characteristics of the vision for the future encapsulated in the words “People & Planet in Harmony.” NTT Group will contribute to endowing the future with these characteristics through the provision of ICT services and cutting-edge technologies.

Through our environmental materiality analyses, we have identified NTT Group’s key environmental issues to be climate change, energy (electricity), resources, and ecosystems. Based on these issues, the Group has established the 2030 Environmental Targets, a set of environmental targets pertaining to these issues to be accomplished by the fiscal year ending March 31, 2031, that is meant to guide us in realizing the future described in the NTT Group Environmental Statement.

Overview of NTT Group’s Environmental Impact

To reduce the environmental impact of its business activities by the greatest extent possible, NTT Group is taking steps to track and analyze what types of resources and energy it is using and what types of environmental impacts are occurring throughout its business activities.

In the fiscal year ended March 31, 2018, we achieved year-on-year reductions of 0.13 billion kWh in purchased electricity and 2,000 kl in gasoline consumption.

The NTT Group’s Material Balance* (Fiscal Year Ended March 31, 2018)

<table>
<thead>
<tr>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased electricity: 8.23 billion kWh</td>
<td>GHG emissions Category 1: 0.19 million tons</td>
</tr>
<tr>
<td>Fuel consumption: 23 thousand kl</td>
<td>Scope 3: Total 17.10 million tons</td>
</tr>
<tr>
<td>Sea consumption: 48.42 million m³</td>
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<tr>
<td>Water consumption (total of tap and wastewater): 12.59 million m³</td>
<td>Waste generated in operations Category 1: 0.022 million tons</td>
</tr>
<tr>
<td>Virgin pulp consumption: 17 thousand tons</td>
<td>Vacation transportation and distribution: 0.079 million tons</td>
</tr>
<tr>
<td>Fuel consumption by company vehicles: 11 thousand kl</td>
<td>Capital goods Category 1: 5.00 million tons</td>
</tr>
<tr>
<td>Gasoline: 9 thousand kl</td>
<td>Revenue from products and services Category 1: 2.80 million tons</td>
</tr>
<tr>
<td>Natural gas: 39 thousand m³</td>
<td></td>
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<tr>
<td>Petroleum gas / natural gas: 8.42 million m³</td>
<td></td>
</tr>
<tr>
<td>Electric power: 48.42 billion kWh</td>
<td>Equipment Category 1: 0.39 million tons</td>
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<tr>
<td>Water consumption: 12.59 million m³</td>
<td></td>
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<tr>
<td>Hence, Category 1: 0.39 million tons</td>
<td></td>
</tr>
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<td>5.90 million tons</td>
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<td>5.90 million tons</td>
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</table>

*Relationship between various resources and energy required for business activities and associated waste and emissions production

For details: P40–42

Overview

Realization of Low Carbon Future

We will contribute to reducing the CO₂ emissions of society by at least 10 times more than the NTT Group’s own emissions.

Realization of Closed Loop Recycling

We will work to adapt to climate change by actively promoting initiatives through our activities and by collaborating with our stakeholders.

Planning a Future of Natural Harmony

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

Specific targets and key dates

2030 Environmental Targets

<table>
<thead>
<tr>
<th>Category</th>
<th>Specific Targets and Key Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 4</td>
<td>Reduction of environmental impact</td>
</tr>
<tr>
<td>Category 5</td>
<td>Reduction of CO₂ emissions</td>
</tr>
<tr>
<td>Category 14</td>
<td>Reduction of waste disposed of</td>
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<tr>
<td>Category 15</td>
<td>Reduction of greenhouse gas emissions</td>
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</tbody>
</table>

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

For more information on the NTT Group Environmental Statement and 2030 Environmental Targets, please visit the following websites:

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

NIPPON TELEGRAPH AND TELEPHONE CORPORATION ANNUAL REPORT 2018

ANNUAL REPORT 2018

38

39
By advancing such efforts, we are contributing to the realization of a low-carbon society while simultaneously mitigating financial risks for the Group.

In the ICT field, a primary area of business for NTT Group, the advancement of technologies brings concerns for the rises in carbon dioxide (CO2) emissions from society. Accordingly, reductions in CO2 emissions through the use of ICT companies are increasingly being expected to make their operations more energy efficient.

NTT Group provides data center services and various other ICT services, and the use of electricity purchased to supply such services accounts for over 95% of the Group’s CO2 emissions. We are therefore implementing energy-saving initiatives, realizing that these initiatives will also contribute to reductions in CO2 emissions.

Accordingly, reductions in CO2 emissions from society are calculated by converting the energy consumption benefits of supplied ICT services into CO2. In converting energy consumption benefits into CO2, the Company referenced the calculation methods included in the Telecommunication Technology Committee’s Methodology for the Assessment of the Environmental Impact of Information and Communication Technologies (ICT) Eco-Efficiency Evaluation. The calculation is based on the electricity consumption of NTT Group only.

The reduction in CO2 emissions from society is calculated by converting the energy consumption benefits of supplied ICT services into CO2. In converting energy consumption benefits into CO2, the Company referenced the calculation methods included in the Telecommunication Technology Committee’s Methodology for the Assessment of the Environmental Impact of Information and Communication Technology Goods. NTT Group also calculates the environmental impacts of its ICT operations using the Information and Communication Technology (ICT) Eco-Efficiency Evaluation Methodology. The calculation is based on the electricity consumption of NTT Group only.

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The reduction in CO2 emissions from society is calculated by converting the energy consumption benefits of supplied ICT services into CO2. In converting energy consumption benefits into CO2, the Company referenced the calculation methods included in the Telecommunication Technology Committee’s Methodology for the Assessment of the Environmental Impact of Information and Communication Technology Goods. NTT Group also calculates the environmental impacts of its ICT operations using the Information and Communication Technology (ICT) Eco-Efficiency Evaluation Methodology. The calculation is based on the electricity consumption of NTT Group only.

In the ICT field, a primary area of business for NTT Group, the advancement of technologies brings concerns for the rises in carbon dioxide (CO2) emissions from society. Accordingly, reductions in CO2 emissions through the use of ICT companies are increasingly being expected to make their operations more energy efficient.

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Value Creation through Environmental and Social Contributions

Initiatives for Accomplishing the 2030 Environmental Targets 3: e-Mobility

Promotion of e-Mobility

With regard to its fleet of company vehicles, NTT Group is promoting e-mobility while also downsizing its overall fleet. We have thus set the goal of converting 50% of general company-use vehicles to electric vehicles (EVs) by 2025, with 100% conversion targeted by 2030. The installation of EV charging stations at the premises of communications buildings and other Group facilities will be advanced alongside this conversion.

Participation in EP100 and EV100

NTT Group is preparing to announce specific targets for energy efficiency and e-mobility and to participate in the EP100*1 and EV100** international initiatives organized by the Climate Group to promote improvements in energy efficiency. Through participation in such international initiatives, NTT Group will declare its commitment to the environment and its stance toward addressing international environmental issues to external stakeholders.

Ratio of EVs to General Company-Use Vehicles

<table>
<thead>
<tr>
<th>Year</th>
<th>EVs (%)</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016/3</td>
<td>0.1%</td>
<td>0</td>
</tr>
<tr>
<td>2015/12</td>
<td>50%</td>
<td>50</td>
</tr>
<tr>
<td>2030/12</td>
<td>Target 100%</td>
<td></td>
</tr>
</tbody>
</table>

*1 EP100 is an international initiative that encourages companies to double the energy efficiency of their businesses. A condition for joining this initiative is to declare a target for doubling energy productivity with a set completion date.

*2 EV100 is an international initiative that promotes the introduction of EVs. Companies seeking to participate in this initiative are required to make a public commitment to one or more of the following areas.

1. Integrating EVs into directly owned or leased corporate fleets
2. Placing requirements in service contracts (taxis, rental vehicles, etc.) for EV use
3. Supporting staff in using EVs by installing charging infrastructure at all premises
4. Supporting EV uptake by customers by installing charging infrastructure at all premises

Sources: EP100 website (https://www.theclimategroup.org/project/ep100)
EV100 website (https://www.nippon-nttc.com/eng/environmental/corporate_100_ton.html)

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Legacy for Creating an Ecologically Sound Society

Mobile phones contain various materials that are incredibly valuable to mineral-scarce Japan, including copper, silver, gold, and palladium. NTT DOCOMO is collecting used mobile phones at its roughly 2,400 docomo shops located nationwide. Moreover, we are extending the scope of these collection activities to various events pertaining to the Olympic and Paralympic Games in which medals are made entirely from materials recycled from used mobile phones and other small appliances, represents a framework that is effective for recycling our finite resources.

Unprecedented Project for the Olympic and Paralympic Games

In 2017, 94.8% of households in Japan possessed mobile communication terminals. Smartphones accounted for 75.1% of these terminals*, indicating that more homes own smartphones than PCs. Furthermore, consumption trend surveys have shown that more than four years usually pass before people replace their mobile phones, which are now fulfilling an indispensable role in our daily lives as a gateway to information. This situation indicates that the Tokyo 2020 Medal Project, an unprecedented project for the Olympic and Paralympic Games in which medals are made entirely from materials recycled from used mobile phones and other small appliances, represents a framework that is effective for recycling our finite resources.

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With eyes to 2030, we will work to contribute to the resolution of environmental issues in Japan and to develop a legacy for the creation of an ecologically sound society.

Legacy for Creating an Ecologically Sound Society

Mobile phone recycling class

Mobile collection station at event

Mobile phones Collected by NTT DOCOMO as of June 30, 2018: Approx. 4.1 Million

Reference (Japanese only) https://medal-project.idc.nttdocomo.co.jp/
Initiatives for Protecting NTT Group’s Communications Networks and Information Systems

- Establishment and Implementation of Policies Regarding Information Security and Personal Information Protection
- NTT Group has established regulations and rules concerning customer, shareholder, employee, and other information in accordance with the NTT Group Information Security Policy.
- Furthermore, each Group company has developed a personal information protection structure that matches its particular business characteristics and has formulated its own information protection policies. Group companies are also advancing various other initiatives, including establishing organizations for promoting information security and management.

Initiatives for Supporting Customers in Reinforcing Information Security

- Development of security businesses through NTT Security Corporation and other companies
- Utilization of information security technologies through collaboration
- Application of talent, technologies, and experiences

Initiatives for Protecting NTT Group’s Communications Networks and Information Systems

- Establishment and implementation of measures regarding information security and personal information protection.
- Maintenance of an information security management structure centered on the Group CISO Committee.
- Sharing of NTT Group-CERT information.

Nippon CSIRT Association, which enables it to coordinate with domestic and overseas CSIRT organizations. This collaboration makes it possible for NTT-CERT to share information on relevant trends and response measures.

In addition, NTT-CERT participates in the cross-industry seminars 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

Cultivation of Information Security Human Resources

The evolution of Internet of Things (IoT) technologies is driving a rapid increase in the number of devices needing to be protected from threats to information security, while threats themselves are becoming more sophisticated and diverse. Meanwhile, there is concern for the severe lack of information security engineers at both Japanese and overseas companies. NTT Group is working to cultivate information security human resources within the Group. At the same time, the Group is contributing to the training of security personnel across Japan through cooperation with the government, other companies, and educational institutions.

NTT Group CSIRTs

- Duties of Group CSIRTs
- NTT Group CSIRTs are responsible for managing Cross-Industry CSIRT (CSIRTs) and providing support for incidents impacting the entire Group.

Overview of NTT Group’s Information Security and Personal Information Protection Initiatives

- Contribution to the healthy development and transformation of society.
- R&D Capabilities
- NTT Group establishes NTT-CERT in 2004 to function as a central organization for detecting and responding to security incidents, solving security incidents, minimizing damages, and preventing reoccurrence.

Training of Security Personnel across Japan

- NTT Group is engaged in initiatives for addressing the insufficiency of security personnel in Japan as well as the lack of proficiency of such personnel. For example, NTT Group takes part in cross-industry training initiatives, holds the “Cyber-attack and Cyber-defense Technologies” course at Waseda University, and is a member of the Security Camp Committee and JISC-Personnel, a collaborative organization utilizing ICT for sharing and analyzing information.

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Information Security Human Resource Development within NTT Group

- NTT Group has set the goals for realizing increases in the number and proficiency of its staff of security experts in Japan to be accomplished by the fiscal year ending March 31, 2021. Based on this target, Group companies are implementing human resource development measures on the types of security personnel needed. As a result, the number of security personnel holding internal certifications reached approximately 39,000 on April 30, 2018. We will continue to enhance our range of ever-more practical development programs to increase the number of personnel capable of functioning as the core of our security field operations.

Personnel Development, which operates and performs cross-industry collaborative ventures with companies in important industry fields, was transformed into an organization with corporate status. This move was taken to allow it to better address cyberthreats on an industry-wide basis by stepping up initiatives for cultivating security management personnel, fostering understanding among management, and sharing its expertise.

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Initiatives for Supporting Customers in Reinforcing Information Security

Value Creation through Environmental and Social Contributions

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

NTT Group is helping businesses in various industries to prevent unauthorized cyberattacks, including the energy, railway, and water/energy sectors. In addition, NTT Security has developed Integrated Threat Information Databases, which allow customers to know in real-time an attacker’s malicious activities such as log analyses and transmission targets associated with industrial control systems. The focus is on improving customers’ security capability by providing customers’ analysts with Malicious websites detected through unique analytics and input into SEM.

High system availability

Key customers

Businesses that have suffered from a disruption of telecommunications services for more than two hours

Protection of security threats

Prevention of security threats

Secure, smart and efficient

Simple integration

Integrating products and services provided by NTT Security

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 buildings. NTT Security’s response services 24 hours a day, 365 days a year by taking advantage of its advanced, proprietary Security Information & Event Management (SEM) 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 control centers staffed by security analysis in locations across the globe, NTT Security provides services that are flexibly adjusted to the characteristics of each region.

Proprietary threat information databases

NTT Group’s R&D results

Sophisticated alerts

Malicious sites detected through unique analytics and input into SEM

Real-time alerts

Malicious transmission targets

Proprietary threat information database in locations across the globe

Approx. 50,000

Malicious sites detected through unique analytics and input into SEM

Hundreds per month

NTT Group’s Basic Policy on Disaster Countermeasures

NTT Group has defined three key themes for disaster countermeasures—improving telecommunications network reliability, securing critical communications systems, and promptly restoring telecommunications services. We have been strengthening efforts based on these themes since the Great East Japan Earthquake.

Disaster Countermeasures

Stable and Reliable Telecommunications Services in Preparation for Large-Scale Disasters

NTT Group has defined three key themes for disaster countermeasures—improving telecommunications network reliability, securing critical communications systems, and promptly restoring telecommunications services. We have been strengthening efforts based on these themes since the Great East Japan Earthquake.

Specifically, we are taking measures to improve the reliability of our telecommunications infrastructure. To ensure that our telecommunications services operate without interruption at all times, we employ transmission trunk line multi-routing, have enacted black-out countermeasures for communications buildings and base stations, and are making communications buildings more disaster resistant. In addition, we are expanding the power supply systems to ensure that we have positioned throughout Japan and are continuously conducting training to prepare for major natural disasters. Furthermore, 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 preparations and make the necessary emergency and critical communications as a public institution as designated by the Basic Act on Disaster Countermeasures.

In the fiscal year ended March 31, 2018, no serious telecommunications disruptions*1 occurred at four telecommunications business companies (NTT East, NTT West, NTT Communications, and NTT DOCOMO), while service stability was maintained at 100.00%*2, under normal circumstances.

*1 Number of disruptions that led to a stop of or lowered the quality of telecommunications services and that fulfill the following conditions:
  * Voice services usable for emergency reports (1%), etc. Service impacted for more than one hour with more than 10,000 people affected
  * Voice services not usable for emergency reports: Service impacted for more than two hours with more than 30,000 people affected
  * Internet-related services (free): Service impacted for more than 12 hours with more than 1,000,000 people affected or service impacted for more than 24 hours with more than 100,000 people affected
  * Other services: Service impacted for more than two hours with more than 10,000 people affected or service impacted for more than one hour with more than 1,000,000 people affected

*2 0 to 5 total hours under the impact of natural disruptions (number of affected users x hours of serious disruption) / total hours of major service provision (number of users x 24 hours x 365 days) = 100%

Stable and Reliable Telecommunications Services in Preparation for Large-Scale Disasters

Disaster Countermeasures

NTT Group has continued to provide telecommunications services in Japan, which cannot be allowed to be interrupted in the event of a disaster, for over 100 years. We are leveraging the large amount of knowledge and skill accumulated over our history to develop a solution business for supporting customers in maintaining business continuity. We anticipate significant business opportunities to arise in this regard going forward.

Damage from natural disasters, such as heavy rains and more frequent typhoons, is becoming increasingly common due to recent climate change. As a result, there is a growing risk of water and lightning damage and power outages, which now threaten to cause extensive damage should they occur. 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. These measures are necessary to provide support to disaster victims and facilitate swift recovery.

For this reason, NTT Group strives to provide support to help customers restore operations and maintain business continuity after disasters. To this end, we are developing business continuity solution operations across a wide range of fields, including data center services and cloud services, an area where service is provided by NTT Communications and NTT DATA, and building and electric technologies, an area where service is provided by NTT FACILITIES.
Diversity Initiatives 1: Empowerment of Women in the Workforce

To help empower women in the workforce, NTT Group takes steps to nurture female leaders, support the balancing of work with child-rearing, and conduct other measures based on the circumstances at each Group company. As one initiative for guiding these efforts, we formulated and announced a plan to double the ratio of our female managers at the level of section manager or above in Japan, seeking to increase this ratio from the level of 2.9% in the fiscal year ended March 31, 2014, to 6.0% by the fiscal year ending March 31, 2021. We have since introduced efforts to train and promote female employees to management positions in 38 NTT Group companies. In the fiscal year ended March 31, 2018, women occupied 5.1% of management positions and comprised 34.1% of new graduates joining NTT Group, representing smooth progress toward the accomplishment of this plan. Furthermore, NTT East, NTT West, NTT Communications, NTT DATA, and some Group companies have received the highest rating (Rank 3) in the “Ethos Biz” certification mark program for recognizing excellent companies under the Act to Promote the Active Participation of Women in the Workplace, which took effect in April 2016. NTT Group companies also provide career development training for female employees, which includes curricula involving exchanges with other companies, and hold joint forums and training sessions with the aim of cultivating female managers.

Diversity Initiatives 2: Employment of Non-Japanese Individuals and Cultivation of Global Leaders

NTT Group develops a global business. We are therefore committed to creating workplaces where diverse human resources can realize their full potential, irrespective of race or nationality, and to cultivating global leaders. We apply the same conditions to the hiring and promotion of non-Japanese employees as we do when hiring and promoting our Japanese employees, and we allow non-Japanese candidates to conduct their interviews or give presentations in English. Of the 1,694 people hired by major NTT Group companies in Japan and overseas to acquire leadership skills in higher-level positions, the ratio of our female managers at the section manager level or above in Japan was 4.6% in 2018.

Diversity Initiatives 3: Consideration for Members of the LGBT Community and Other Sexual Minorities

In Japan, in the fiscal year ended March 31, 2018, 57 (3.4%) were non-Japanese. In addition, we implement the Global Leadership Development Program: Leadership Excellence and Accelerating Diversity (GLDIP LEAD) to provide opportunities for senior managers in Japan and overseas to acquire leadership skills in higher-level positions. The aim of this program is to promote the contributions of global leaders. In 2018, 30 individuals participated, 10 of whom were Japanese and 20 of whom were non-Japanese.

Diverse Human Resources

Gender

Race

Age

Ability

Sexual Orientation

Nationality

Gender Identity

eTC.

Promotion of Diversity

Aiming to become “Your Value Partner” that customers continue to select, NTT Group has positioned diversity and inclusion as important elements of its management strategies. We thereby aim to enhance our powers of innovation and corporate strengths by being receptive toward and utilizing diverse human resources. To this end, we are endeavoring to establish workplaces at which a diverse range of people can actively participate, regardless of their gender, age, race, nationality, ability, sexual orientation, or gender identity. In October 2007, the Diversity Management Office was established at NTT, the holding company, and by April 2008 diversity promotion supervisors were in place at Group companies. Since that time, the Diversity Management Office and diversity promotion supervisors have worked together to assist employees’ work-life management efforts, provide career development support for our diversifying employee base, and conduct educational activities aimed at reformatting the corporate culture. In addition, discussions on diversity within the Group are included in the training curriculum for senior managers, which is administered regardless of nationality. We thereby aim to help encourage participation by diverse human resources throughout the Group.

We also hold annual diversity promotion conferences to enable individual Group companies to share their initiatives with the whole NTT Group, and we monitor female manager ratios, the status of the hiring of persons with disabilities, and other numerical diversity management indicators.

### Employment Data

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
<th>Number of Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>28,520</td>
<td>10,220</td>
<td>26,110</td>
</tr>
<tr>
<td>Japan</td>
<td>16,000</td>
<td>5,700</td>
<td>10,300</td>
</tr>
</tbody>
</table>

* Estimated number of employees of 623 consolidated companies for NTT Group as of March 31, 2018.
* 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).
* Section manager level or higher
Promotion of Work Style Reform Initiatives 1: Promotion of Use of Working-from-Home System

We are reforming the work styles of all NTT Group employees and actively promoting the use of the working-from-home system and other teleworking systems as well as flexible systems as an ICT provider. We thereby attempt to realize more efficient and flexible work styles. NTT Group participated in the Telework Days event that took place in July 2018. During this event, more than 15 thousand employees from across various Group companies utilized teleworking and other systems to experience flexible work styles. To reduce security risks pertaining to teleworking, we integrated NTT Group’s security platforms to provide a teleworking environment through a private cloud service.

Promotion of Work Style Reform Initiatives 2: Encouragement of Employees to Take Leave

We encourage employees to take extended periods of leave in conjunction with holidays, such as Golden Week, end-of-year and New Year holidays, and summer vacation. Other measures to facilitate leave acquisition include implementing more lenient guidelines for counting paid leave consumption in order to make it easier for employees to take so-called life plan leave for purposes such as childcare, long-term care of family members, or volunteer activities. As one facet of our efforts to promote proactive leave acquisition by managers and other NTT Group employees, managers are implementing the Value-Up Friday campaign, which recommends that employees acquire at least a half-day of leave on one or more Fridays each month. In the fiscal year ended March 31, 2018, the average number of paid leave days taken at major NTT Group companies in Japan was 19.0 days, and the utilization ratio for paid leave was 95.0%.

Promotion of Work Style Reform Initiatives 3: Promotion of Childcare and Family Care Support Systems

We encourage employees to take extended periods of leave in conjunction with holidays, such as Golden Week, end-of-year and New Year holidays, and summer vacation. Other measures to facilitate leave acquisition include implementing more lenient guidelines for counting paid leave consumption in order to make it easier for employees to take so-called life plan leave for purposes such as childcare, long-term care of family members, or volunteer activities. As one facet of our efforts to promote proactive leave acquisition by managers and other NTT Group employees, managers are implementing the Value-Up Friday campaign, which recommends that employees acquire at least a half-day of leave on one or more Fridays each month. In the fiscal year ended March 31, 2018, the average number of paid leave days taken at major NTT Group companies in Japan was 19.0 days, and the utilization ratio for paid leave was 95.0%.

Table 3. Use of Working-from-Home System

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>20,000</td>
<td>15,046</td>
<td>35,046</td>
</tr>
<tr>
<td>2017</td>
<td>20,046</td>
<td>15,012</td>
<td>35,058</td>
</tr>
<tr>
<td>2018</td>
<td>19,050</td>
<td>14,932</td>
<td>34,982</td>
</tr>
</tbody>
</table>

* Data collected for NTT (non-consolidated)

Our efforts are not limited to enhancing the systems available within NTT Group. Seeking to help people struggling to balance their work with raising children across society, NTT Urban Development Corporation established WARRA Kids, a company-operated day care facility. Through this facility, we aim to provide children support services. In addition, we introduced the new Family Care Concierge program that assists employees in providing long-term care to family members by matching them with care managers and offering other consulting services.

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016/3</td>
<td>1,112</td>
<td>59</td>
<td>1,171</td>
</tr>
<tr>
<td>2017/3</td>
<td>1,128</td>
<td>60</td>
<td>1,188</td>
</tr>
<tr>
<td>2018/3</td>
<td>1,130</td>
<td>60</td>
<td>1,190</td>
</tr>
</tbody>
</table>

Childcare and Family Care Support Systems

Looking to utilize diverse employees while supporting parents seeking to achieve a balance between work and child-rearing...
**Human Resource Development**

NTT Group is committed to establishing human resource development systems that enable all of its employees to make the most of their abilities through their work and deliver high value. Employees formulate their own career plans based on the special skills necessary for each job. Skills are then improved through the implementation of the plan-do-check-act (PDCA) cycle. At Group companies, we have taken steps to establish a variety of systems related to human resource development, such as instituting a framework for defining specialized fields in line with business characteristics and work details and certifying skills.

**Support for Training to Improve Capabilities**

In addition to group training and on-the-job training for enabling employees to gain necessary skills in their respective fields of business, we provide many other opportunities for employees who are eager to get ahead, including distance learning, e-learning, in-house certification of skill levels to evaluate the results of educational programs, and support for acquiring qualifications.

Furthermore, we actively support employee career development in various ways, including having supervisors meet with their subordinates at the start of the year, mid-year, and year-end to discuss career plans and review performance, and providing management training to employees tapped for promotion. We also offer a training curriculum for cultivating experts in the security field in order to respond to the recent rise in security risks. To develop future management leaders, we have selected approximately 350 individuals from the executive manager and section manager levels to take part in a training curriculum meant to help participants develop leadership skills and engage in interpersonal exchanges. With an eye to the globalization of the Group’s business, we also send employees to study at overseas graduate schools or participate in overseas work experience programs in order to nurture personnel capable of performing in the global market.

**Human Resource Assignment**

NTT Group’s businesses extend over a wide range of areas. To smoothly advance these various businesses, it is important to assign the right person to the right job so that all employees can work to their full potential. From this perspective, we implement periodic human resource reviews and assigning human resources to create a workplace environment in which all employees can find motivation.

**In-House Recruitment Program**

We raise motivation and promote networking within the Group by providing ambitious employees with opportunities to seek new challenges in a wide range of fields through our NTT Group Job Challenge in-house recruitment program. In recent years, to raise the number of employees across the whole Group who are capable of working globally, we have been actively providing opportunities for employees to transfer to global posts by creating new global posts and increasing recruit numbers. In the fiscal year ended March 31, 2018, 477 employees used the Job Challenge program, with 188 transferring as a result to their desired workplace.

**Employee Evaluations**

NTT Group operates an in-house qualification system that puts priority on performance and sets behavior and performance targets tailored to each qualification rank. Our human resource management systems are designed to encourage employees to think and act for themselves in the execution of their work duties through the steady and effective implementation of an evaluation process that incorporates everything from the setting of targets to the provision of feedback to employees.

**Fair Personnel Evaluation System**

Rather than having each company implement their own mechanisms for human resource management and development, we institute an all-inclusive system for managing employee assignment, skills development, evaluation, rating, and compensation, centered on a qualification system that indicates our expectations in terms of behavior and performance of each employee. Proper evaluation requires a sound understanding of the principles and content of our human resource management systems and appropriate execution of the subsequent processes of target setting, daily communication, evaluation, and performance reviews. To achieve these types of evaluations, we adhere to the following cycle. The evaluation system applies to 60% of NTT Group companies, including companies outside of Japan.

**Human Resource Management and Salary Systems**

In October 2013, we reconstructed our human resource management and salary systems. The new systems, which reflect the distinctive business characteristics of NTT Group, are designed to better reward employees who perform the roles and produce the results expected of them by introducing evaluation-based compensation and expanding results-based awards.

**Employee Satisfaction**

NTT Group regularly conducts surveys of employees and uses the results to improve working environments. Results of the survey conducted in the fiscal year ended March 31, 2018, showed the level of overall employee satisfaction at 3.79 out of 5.00 points.

**Turnover Rate**

We collect data on the turnover rate at major NTT Group companies in Japan (including their affiliated companies). In the fiscal year ended March 31, 2018, the turnover rate was 6.4%.* The average length of service was 19.18 years for male employees and 12.80 years for female employees.

* including employees retiring at the mandatory retirement age
Contributing to the Resolution of Environmental and Social Issues

Sustainable Growth Together with Stakeholders

NTT Group’s Primary Approach to Major Stakeholders

NTT Group conducts business in Japan and overseas. To increase business sustainability, NTT Group operates its business in an integrated, Groupwide manner while focusing on the expectations and needs of its various stakeholders. Stakeholder engagement serves as a means of understanding and taking into consideration the needs and expectations of our stakeholders in the way we conduct our business. With regard to environmental and social issues, in particular, incorporating stakeholder input to the greatest degree possible is a way of earning social trust, increasing competitiveness, and exercising accountability. Through appropriate stakeholder engagement, NTT Group strives to achieve sustainable growth together with its stakeholders. Of course, all engagement activities are conducted in accordance with relevant laws, regulations, and legal requirements.

Shareholders and Investors

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

Examples of Engagement

- General Meetings of Shareholders, financial results announcements
- Explanatory presentations for individual investors
- Explanatory presentations for institutional investors
- Publication of yearly reports (Annual Reports, etc.)

Reasons for Engagement

By communicating with shareholders and other investors, we provide information necessary for investment decisions and help ensure that the Group is properly evaluated. We also strive to receive sound feedback received through interactions in Group management.

Employees (Employees, Their Families, and Retired Employees)

Employees who work at NTT Group, their families, and retired employees who support NTT Group’s CSR ideals

Examples of Engagement

- Conducting of employee satisfaction surveys
- Communication between management and employees
- Groupwide Corporate Ethics Help Line

Reasons for Engagement

By creating safe and healthy workplaces and providing the best support for employees, we hope to enable them to realize their full potential and to go about their work while remaining highly aware of CSR.

Local Communities

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

Examples of Engagement

- Support and collaboration through social contribution activities
- Collaboration with local community residents when constructing or installing equipment
- Donations, sponsorship, and other support
- CSR conferences

Reasons for Engagement

Through engagement, we strive to contribute to the development of local communities and also to understand the issues faced by communities in order to make social contributions and implement disaster countermeasures.

Business Partners

Business partners who provide a range of cooperation in the provision of NTT Group services

Examples of Engagement

- Creation of inquiry forms
- Disclosure of procurement policies and guidelines, etc.
- Surveys for suppliers
- Explanatory presentations for suppliers

Reasons for Engagement

Engagement with business partners helps us procure products that take into account the environment, human rights, and other issues and build fair partnerships to ensure CSR and continue growing together with our business partners.

ICT Companies and Industry Associations

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

Examples of Engagement

- Entry into industry associations
- Participation in committees, etc.

Reasons for Engagement

Through discussions on the direction and initiatives for the information and telecommunications industry, we will integrate the entire industry and contribute to society through telecommunications development and advancement.

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

Examples of Engagement

- Compliance with laws and regulations
- Suggestions for government policy
- Participation in public-private partnership projects

Reasons for Engagement

We aim to conduct appropriate business activities while adhering to the policies of the central government and local governments and to help resolve the social issues faced by the central government and local governments.

NTT Group’s Basic Policy for Stakeholder Engagement

Basic Policy

With its ever-more global and complex value chain, NTT Group provides products and services to a diverse range of stakeholders across the globe. These stakeholders have a wide variety of needs and expectations regarding our operations. Stakeholder engagement serves as a means of understanding and taking into consideration the needs and expectations of our stakeholders in the way we conduct our business. With regard to environmental and social issues, in particular, incorporating stakeholder input to the greatest degree possible is a way of earning social trust, increasing competitiveness, and exercising accountability. Through appropriate stakeholder engagement, NTT Group strives to achieve sustainable growth together with its stakeholders. Of course, all engagement activities are conducted in accordance with relevant laws, regulations, and legal requirements.

Value Creation through Environmental and Social Contributions
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 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 exercise of voting rights by shareholders. Since its founding in 1985, NTT Group has continued to enhance its corporate governance system through means such as the exercise of voting rights by shareholders. 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 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.

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

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.

Auditor & Supervisory Board

The Audit & Supervisory Board is a Board of the Audit & Supervisory Board Members (three outside independent Audit & Supervisory Board Members) composed of two outside independent 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

For the purpose of improving objectivity and transparency in the decisions regarding appointments and compensation of Members of the Board, NTT has established a non-statutory basis the Appointment and Compensation Committee, which consists of 4 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

The Executive Officers Meeting is a Board of the Audit & Supervisory Board Members (including two outside independent 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.

A number of committees have been established below 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 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.

More information on the Company’s committees can be found on NTT’s corporate website: http://www.ntt.co.jp/english/corporate/nttinfo.html
Overview
Strategy
Operation
ESG
Corporate Governance

Board of Directors
Members of the Board (As of June 30, 2018)

Senior Executive Vice President
Representative Member of the Board
Motoyuki Ii
In charge of technical strategy and international standardization
Head of Technology Planning

Outside Independent Member of the Board
Katsuhiko Shirai
Director of Japan Display, Inc.

Outside Independent Member of the Board
Sadayuki Sakakibara
Special Advisor of Toray Industries, Inc.

Senior Vice President
Member of the Board
Hiroki Kuriyama
Head of Strategic Business Development
In charge of 2020 Project

Senior Vice President
Member of the Board
Eiichi Sakamoto
Head of General Affairs

Senior Executive Vice President
Representative Member of the Board
Akira Shimada
In charge of business strategy and risk management
Head of Global Businesses

Senior Executive Vice President
Representative Member of the Board
Tsunehisa Okuno
Head of Finance and Accounting

Senior Vice President
Member of the Board
Katsuhiko Kawazoe
Head of Research and Development Planning

Senior Vice President
Member of the Board
Ryota Kitamura
Head of Corporate Strategy Planning

Senior Vice President
Member of the Board
Eiichi Sakamoto
Head of General Affairs

Senior Vice President
Member of the Board
Takashi Hiri
Head of Global Business

Senior Vice President
Member of the Board
Katsuhiko Kawazoe
Head of Research and Development Planning

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

Chairman of the Board
Hiromichi Shinohara
Chairman of Japan Display, Inc.

Executive Vice President
Member of the Board
Tsunehisa Okuno
Head of Finance and Accounting

Senior Vice President
Member of the Board
Ryota Kitamura
Head of Corporate Strategy Planning

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

Chairman of the Board
Hiromichi Shinohara
Chairman of Japan Display, Inc.

Executive Vice President
Member of the Board
Tsunehisa Okuno
Head of Finance and Accounting

NIPPON TELEGRAPH AND TELEPHONE CORPORATION ANNUAL REPORT 2018

58 ANNUAL REPORT 2018 59
Corporate Governance

Overview

Strategy

Operation

ESG

Corporate Governance

Background and Experience of Members of the Board

Hiroshi Shinohara

Date of Birth: March 15, 1954

Shares Owned: 6 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Nobuo Kiyota

Date of Birth: February 13, 1963

Shares Owned: 12 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Akira Shimada

Date of Birth: March 15, 1954

Shares Owned: 6 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Tsunehisa Okuno

Date of Birth: July 30, 1955

Shares Owned: 3,800 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Hiroki Kuriyama

Date of Birth: November 17, 1958

Shares Owned: 3,800 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Katsuhiko Kawasaki

Date of Birth: November 17, 1958

Shares Owned: 3,800 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Takashi Hiroi

Date of Birth: August 1, 1954

Shares Owned: 3,800 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Eichi Sakamoto

Date of Birth: November 17, 1958

Shares Owned: 3,800 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Ryota Kitamura

Date of Birth: January 20, 1965

Shares Owned: 3,800 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Jun Sawada

Date of Birth: December 18, 1957

Shares Owned: 6 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Mototoki Ii

Date of Birth: November 17, 1968

Shares Owned: 6 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Katsuhiko Shiraishi

Date of Birth: September 14, 1958

Shares Owned: 3,800 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Sadayuki Sakakibara

Date of Birth: March 31, 1954

Shares Owned: 3,800 Shares

Years Served as Member of the Board: 12 Years

Outside Independent Member of the Board

Notes:
1. As of June 30, 2018
2. Number of meetings attended in 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)

- Corporate Governance 21%
  - General Meeting of Shareholders related
  - Evaluation of the effectiveness of internal control systems
  - Operational status of internal whistleblowing system
  - Human resources, etc.
- Management Strategy 56%
  - NTT Group operations
  - Global strategy
  - M&A matters of principal subsidiaries
  - Approval of the status of execution of duties
  - Approval of audit results of 20-F and financial statements
  - Research and development plans, etc.
- Capital Policy 24%
  - Shareholder returns
  - Stock repurchases and dividends
  - Financing and loans

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 those 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 and the realization of a safer, more secure, and more affluent society. To accomplish this goal, the Group acts as a trusted partner that will be required by the society of the future. At the same time, 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 Audit & Supervisory Board Members standing that adequate information is provided and that Members of the Board engage in active discussions, thereby ensuring the Board’s effectiveness.

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.

Messages from Outside Independent Members of the Board

Katsuhiko Shirai
Outside Independent Member of the Board

Sadyukai Sakakibara
Outside Independent Member of the Board

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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 Audit & Supervisory Board Members standing that adequate information is provided and that Members of the Board engage in active discussions, thereby ensuring the Board’s effectiveness.

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 to help the Company 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.
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 independent opinions 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 Takashi Iida has experience in the divisional audit 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 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 (10 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 implementative that contribute to enhancing the auditing activities of Audit & Supervisory Board Members of major Group companies, including regular 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.

Audit & Supervisory Board
Audit & Supervisory Board Members (as of June 30, 2018)

Akkio Ide
Outside Independent Audit & Supervisory Board Member
Date of Birth: April 10, 1946
Years Served on Audit & Supervisory Board: 6
Shares Owned: 13,183
Number of Audit & Supervisory Board Meetings Attended (Percent): 21/22 (95%)

Takako Maezawa
Outside Independent Audit & Supervisory Board Member
Date of Birth: October 24, 1955
Years Served on Audit & Supervisory Board: 6
Shares Owned: 7
Number of Audit & Supervisory Board Meetings Attended (Percent): 22/22 (100%)

Takashi Iida
Full-time Audit & Supervisory Board Member
Date of Birth: April 11, 1963
Years Served on Audit & Supervisory Board: 6
Number of Audit & Supervisory Board Meetings Attended (Percent): 21/22 (95%)
Number of Board of Director’s Meetings Attended (Percent): 10/12 (83%)

Michiko Tomonaga
Outside Independent Audit & Supervisory Board Member
Date of Birth: April 10, 1946
Years Served on Audit & Supervisory Board: 6
Shares Owned: 2,701
Number of Audit & Supervisory Board Meetings Attended (Percent): 17/22 (77%)
Number of Board of Director’s Meetings Attended (Percent): 9/12 (75%)

Seiichi Ohchiai
Outside Independent Audit & Supervisory Board Member
Date of Birth: April 10, 1946
Years Served on Audit & Supervisory Board: 6
Shares Owned: 0
Number of Audit & Supervisory Board Meetings Attended (Percent): 16/22 (73%)
Number of Board of Director’s Meetings Attended (Percent): 9/12 (75%)

Background and Experience of Audit & Supervisory Board Members

Akkio Ide
Apr. 1974: Bachelor of Law from the Tokyo University
Apr. 1976: Master of Law from the Tokyo University
Apr. 1982: Doctor of Law from the University of Tokyo
Apr. 1983: Joined the law firm Taguchi & Issei
Apr. 1995: Registered in the Bar of Tokyo
Apr. 2005: Full-Time Audit & Supervisory Board Member of NTT
Apr. 2006: Full-Time Audit & Supervisory Board Member of NTT DOCOMO, INC.
Apr. 2009: Outside Independent Audit & Supervisory Board Member of NTT DOCOMO, INC.
Apr. 2010: Member of the Audit Committee of the Tokyo Stock Exchange
Apr. 2010: Full-Time Audit & Supervisory Board Member of NTT
Apr. 2015: Certified Public Accountant (certification up-to-date)
Principal Concentration Positions
Board of Directors of BMA Corporation (present post)
22/22 (100%)
Meetings Attended (Percent):
10/12 (83%)
Attended (Percent):
5,304
Number of Board of Director’s Meetings
7
Shares Owned:
Background and Experience
Apr. 1974: Instructor at the Faculty of Law of the University of Tokyo
Apr. 1977: Professor at the Faculty of Law of Saitama University
Apr. 1989: Full-Time in the Faculty of Law of Saitama University
Apr. 1996: Visiting Professor at the University of Chicago Graduate School of Law and the School of Law of the University of New South Wales
Apr. 2007: Visiting Professor at the Keio University School of Law
Apr. 2010: Visiting Professor at the University of Tokyo
Apr. 2012: Associate Dean of the Keio University School of Law
Apr. 2013: Judge of a District Court in Kanto District
Apr. 2013: Judge of the Fourth District Court
Apr. 2013: Judge of the Second District Court
Principal Concentration Positions
Board of Directors of NTT DOCOMO, INC.
22/22 (100%)
Meetings Attended (Percent):
12/12 (100%)
Attended (Percent):
9,000
Number of Board of Director’s Meetings
7
Shares Owned:
Date of Birth: April 10, 1944
Years Served as Audit & Supervisory
Board Member: 6
Audit & Supervisory Board Member: 6
Number of Audit & Supervisory Board Meetings Attended (Percent): 21/22 (95%)
Number of Board of Director’s Meetings Attended (Percent): 10/12 (83%)

Takako Maezawa
Date of Birth: October 24, 1955
Years Served on Audit & Supervisory Board: 6
Number of Audit & Supervisory Board Meetings Attended (Percent): 22/22 (100%)
Number of Board of Director’s Meetings Attended (Percent): 22/22 (100%)

Takashi Iida
Date of Birth: April 11, 1963
Years Served on Audit & Supervisory Board: 6
Number of Audit & Supervisory Board Meetings Attended (Percent): 21/22 (95%)
Number of Board of Director’s Meetings Attended (Percent): 20/22 (91%)

Michiko Tomonaga
Date of Birth: April 10, 1946
Years Served on Audit & Supervisory Board: 6
Number of Audit & Supervisory Board Meetings Attended (Percent): 17/22 (77%)
Number of Board of Director’s Meetings Attended (Percent): 9/12 (75%)

Seiichi Ohchiai
Date of Birth: April 10, 1946
Years Served on Audit & Supervisory Board: 6
Number of Audit & Supervisory Board Meetings Attended (Percent): 16/22 (73%)
Number of Board of Director’s Meetings Attended (Percent): 9/12 (75%)

Notes:
1. As of June 30, 2018
2. Number of meetings attended is for the fiscal year ended March 31, 2018.
Nomination Policies and Procedure for Audit & Supervisory Board Members

NTT has the policy of electing Audit & Supervisory Board Members who are independent of NTT and its major subsidiaries (the "Independent Members of the 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 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 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.

Reason for Nomination and Status of Independence

<table>
<thead>
<tr>
<th>Name</th>
<th>Reason for nomination</th>
<th>Status of independence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takashi Aoki</td>
<td>Katsuhiko Shirak has a wealth of experience as an operational 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.</td>
<td>Total of transactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total of donations</td>
</tr>
<tr>
<td>Sakae Aoki</td>
<td>Weeda University, at which Katsuhiko Shirak has served as President</td>
<td>Total of transactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total of donations</td>
</tr>
<tr>
<td>Akihiko Amami</td>
<td>The Open University of Japan Foundation, at which Katsuhiko Shirak served as Chairperson (elected in March 2017)</td>
<td>Total of transactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total of donations</td>
</tr>
<tr>
<td>Sadayuki Sakakibara</td>
<td>Independent Audit &amp; Supervisory Board Members</td>
<td>Total of transactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total of donations</td>
</tr>
<tr>
<td>Michiko Tomorotsu</td>
<td>Independent Audit &amp; Supervisory Board Members</td>
<td>Total of transactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total of donations</td>
</tr>
<tr>
<td>Seiichi Ochiai</td>
<td>Independent Audit &amp; Supervisory Board Members</td>
<td>Total of transactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total of donations</td>
</tr>
</tbody>
</table>

Indepedence 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 person who executes business in an organization that received donations exceeding NTT's Standards*3

Even if any of (1) through (3) above applies to a person, it has been determined 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 dealings with NTT and its major subsidiaries in any of the last three fiscal years equal to or more than 5% of the total operating revenue 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 that has had any business dealings with NTT and its major subsidiaries in any of the last three fiscal years equal to or more than 5% of the total of NTT’s consolidated total assets for the respective fiscal year.

*3 An organization that received donations exceeding NTT’s Standards is defined as an organization which received donations from NTT and its major subsidiaries 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.

Overview

Corporate Governance
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 Members’ Board 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 it 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.

<table>
<thead>
<tr>
<th>Total Compensation of Members of the Board and Audit &amp; Supervisory Board Members (Fiscal Year Ended March 31, 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
</tr>
<tr>
<td>Members of the Board</td>
</tr>
<tr>
<td>Audit &amp; Supervisory Board Members</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Note: 1. At the 31st Ordinary General Meeting of Shareholders held on June 20, 2018, the maximum limit on total annual compensation of Members of the Board was set at an aggregate of ¥700 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 ¥119 million in bonuses for the fiscal year ended March 31, 2018.

3. In addition to the above, an aggregate of ¥16 million is 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 Takiji 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.

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.

Compliance

Overview of Compliance Systems

In regard to compliance systems, NTT has formulated the NTT Group Corporate Ethics Charter to guide all employees in practicing legal compliance and acting based on high ethical standards. We take steps to improve employees understanding of this charter, including conducting employee training programs and posting examples of the charter’s implementation on the Company intranet. In addition, we have set up the Corporate 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 KPMAS 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 | ¥5,234 million | ¥5,236 million |
| Compensation for non-audit services | ¥277 million | ¥239 million |
| Total | ¥5,511 million | ¥5,475 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.

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.

More information on the Basic Policies Concerning the Maintenance of Internal Control Systems for NTT Group can be found on NTT’s corporate website.

http://www.ntt.co.jp/about/intercontrol/en

Ethics Help Line. Available to employees of all Group companies, this help line allows for employees to seek consultation or issue reports regarding wrongful acts or scandals.

For more details, please refer to the Governance section of NTT Group Sustainability Report 2018.

http://www.ntt.co.jp/en/sustainability/
Promotion of Risk Management

With respect to business risk management, NTT has established Risk Management Rules stipulating basic policies on risk management with the aims of, among others, anticipating and preventing the materialization of potential risks and minimizing losses if any risk materializes. Chaired by a senior executive vice president, the Business Risk Management Committee spearheads efforts to develop and operate a PDCA cycle for managing risks. During the fiscal year under review, the committee held one meeting during which discussions involved identifying risks that could potentially have a Companywide impact, policies for managing such risks, and other such matters.

NTT has also formulated the NTT Group Business Risk Management Manual, and distributed it to each Group company, in order to facilitate Groupwide risk management initiatives. On the basis of the manual, which stipulates matters that include proactive measures for potential risks, collaborative Groupwide approaches and policies for addressing risks that materialize, and pathways for communicating information, systems have been developed and implemented that enable swift action to be taken.

In the identification of risks, the Business Risk Management Committee plays the central role. Analysis processes for the risks faced by NTT Group are formulated, and risk analysis is periodically implemented in accordance with these processes.

Identification of Risks / Specified Material Risks

From time to time, NTT reviews assumed risks and management policies based on changes in the social environment. In the identification of risks, the Business Risk Management Committee plays the central role. Analysis processes for the risks faced by NTT Group are formulated, and risk analysis is periodically implemented in accordance with these processes.

In this way, Companywide risks are identified. In addition, correlation analyses are implemented for these risks. Those risks with the potential to have the greatest influence are specified as “material risks,” and countermeasures are formulated.

Information Security Risk

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

To prevent such a situation, NTT Group practices rigorous management of the customer information and other confidential information obtained in the course of its business. In addition, NTT Group has formulated the NTT Group Information Security Manual, which stipulates matters that include proactive measures for potential risks, collaborative Groupwide approaches and policies for addressing risks that materialize, and pathways for communicating information, systems have been developed and implemented that enable swift action to be taken.

For more information on the risk factors, please refer to NTT’s corporate website.

http://www.ntt.co.jp/mgt_risks_factors.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.

Policy: maintains information management systems; institutes stringent security measures for preventing unauthorized access, loss, alteration, and leakage of information; conducts once annual training and other awareness-raising programs for officers and employees; performs appropriate supervision of contractors; and publishes related manuals.

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 enhanced the Disaster Management Operation Plan.
Dialogue with Shareholders and Other Investors

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

- **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 time)
    - Participating in individual investor tours (1 time)
    - Hosting facility tours (1 time)

- **Receipt of Awards for IR Activities**
  - Awards for Excellence in Corporate Disclosure (The Securities Analysts Association of Japan)
  - Internet IR Excellence Awards (Daiwa Investor Relations)

Management Emphasizing Dialogue with Shareholders

**Example: Formulation and Execution of the “Towards the Next Stage 2.0” Medium-Term Management Strategy**

- **Information Gathering**
  - Executive Managers / Investor Relations Office
  - Engagement with investors, internal feedback of investor input

- **Planning, Discussion, and Decision-Making**
  - Staff
  - Proposal of medium-term management targets, KPIs, etc.
  - Finance Strategy Committee (CEO, SEVP, relevant Members of the Board)
  - Detailed examination of targets, KPIs, etc.
  - Executive Officers Meeting (CEO, SEVP, Members of the Board)
  - Deliberation regarding targets, KPIs, etc.
  - Board of Directors
  - Decision of targets, KPIs, etc.
  - Supervisors of independent Members of the Board of Directors

- **Monitoring**
  - Board of Directors
  - Monitoring of the status of execution
  - Supervisors of independent Members of the Board of Directors
  - Audit & Supervisory Board
  - Internal Members (3) / Outside independent Members (6)
  - Audit and supervision by Audit & Supervisory Board Members

Enhancement of Shareholder Relations Activities and Communication of Feedback within the Company

NTT is actively enhancing its shareholder relations activities. Specific initiatives in this regard include increasing the number of visits to the individuals entrusted with exercising voting rights on behalf of domestic and overseas institutional investors and holding additional meetings with institutional investors for discussing environmental, social, and governance (ESG) issues. We also seek to provide a wider range of opportunities to speak with investors on the topic of corporate governance. The investor feedback received and areas of interest identified through these shareholder relations activities are communicated to the Disclosue Committee, which is chaired by a senior executive vice president (the CFO), so that disclosure policies and strategies can be formulated based on this information. Based on the resulting disclosure policies and strategies, a wider range of information pertinent to the exercise of voting rights is included in notices of convocation (business reports), integrated reports, and other documents. For example, we seek to disclose more visible information in relation to corporate governance (revised the items included to incorporate those for which investor interest is high) and reworked the overall content of such documents to focus more on items related to increasing corporate value, such as initiatives for Cybersecurity and Initiatives to Ensure Diverse Personnel Can Demonstrate Their Talents. We then visit the investors to verify the benefits of these improvements, utilizing their feedback to further enhance information disclosure. This process creates a plan-do-check-act cycle that continuously heightens the level of information disclosure by NTT Group.

- **Shareholder Feedback**
  - Feedback from investors
  - Enhancement of information disclosure
  - Increase opportunities for dialogue with investors
  - Feedback from investors
  - Enhancement of information disclosure
  - Increase opportunities for dialogue with investors
Regional Communications Business

In the Regional Communications Business, NTT Group worked to develop its B2B2X business through the Hikari Collaboration Model, the wholesale provision of fiber-optic access infrastructure services to various service providers.

Details of Major Initiatives

1. Expanding Collaboration with Service Providers in Other Industries under the Hikari Collaboration Model

With regard to the Hikari Collaboration Model, the number of service providers providing wholesale services was approximately 700 companies at the end of the fiscal year ended March 31, 2018, as NTT Group continued to expand collaborative projects with not only business operators in the communications industry, energy industry, real estate industry, security industry, and housing industry, but also business operators in diverse industries including social infrastructure operators and FinTech operators. New use cases were developed among business operators operating social infrastructure businesses, as the Hikari Collaboration Model was adopted to promote the conversion to fiber-optics in networks connected to traffic signals. As a result of these initiatives, the number of fiber-optic access service subscriptions using this model was 11.12 million.

2. Continuously Reducing Costs and Raising Efficiency in Capital Investment

By increasing productivity and streamlining development costs, among other measures, and through the systematization of work processes, NTT Group continuously worked to reduce costs. Furthermore, by simplifying and streamlining networks and further increasing the use of existing facilities, NTT Group worked to make capital investment more efficient.

3. Expanding Wi-Fi Service Coverage Areas

As companies and local governments are proactively promoting the use of Wi-Fi as a powerful information service tool, in various regions NTT Group continuously worked to improve convenience for the increasing number of visitors to Japan by expanding the coverage areas of Wi-Fi, resulting in the number of Wi-Fi area owners reaching 744.

Number of Subscriptions for Major Services (as of March 31, 2018)

Wi-Fi Services for Customers and Cloud-Based Cameras at Restaurants

Recently, Wi-Fi services at restaurants for customers have become indispensable to improving customer satisfaction. This trend has advanced to the point that Wi-Fi has become such a matter of consideration that the availability of these services is mentioned on restaurant information sites. NTT East has helped restaurant owners address the need for these services through the introduction of its Gigaraku Wi-Fi service for offices and stores, which enables restaurant owners to provide Wi-Fi services for customers. As an added bonus, these services have proven to be a draw for tourists from overseas.

Another recent trend is the increasing number of restaurants installing cloud-based surveillance cameras to monitor customer inflow and protect the premises. The Gigaraku Wi-Fi Camera Option: Wi-Fi-compatible, cloud-based camera service makes it possible for restaurant staff to view footage from cameras in real-time via their smartphone during off-hours or at night. Moreover, images can be set to automatically record intrusions by reacting when they detect motion or noises.

Al-Powered Road Surface Diagnosis Solution

Efficient, Low-Cost Inspections of Aging Road Surfaces

Many of the roads in Japan used by people in their daily lives were built during the period of high economic growth, and the need of preventive maintenance of these roads is constantly rising. To address this need, NTT FIELDTECHNO CORPORATION has commercialized an ICT solution that makes it possible to perform low-cost inspections and diagnoses over wide stretches of road. Going forward, we will move ahead with the development of this solution to make greater contributions to the efficient maintenance and management of social infrastructure through features that allow for higher efficiency in inspections.
Long Distance and International Communications Business

In the Long Distance and International Communications Business, in addition to enhancing its provision of seamless ICT solutions combining network and security and other services, NTT Group worked to enhance its service provision in growth areas such as cloud services and IT outsourcing.

Financial Results for the Year Ended March 31, 2018

<table>
<thead>
<tr>
<th>Operating Revenues (billions of yen)</th>
<th>Operating Income (billions of yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,218.9</td>
<td>93.6</td>
</tr>
</tbody>
</table>

Operating Revenues (billions of yen) 2015 2016 2017 2018

Operating Income (billions of yen) 2015 2016 2017 2018

Details of Major Initiatives

1. Proactively Expanding Cloud Service Platform
   To respond to demand for cloud services and data centers in various regions worldwide, NTT Group advanced the expansion of its service provision systems in various countries with continuous market expansion. NTT Group launched Texas Dallas 1 (TX1) Data Center and Virginia Ashburn 3 (VA3) Data Center in the United States, Germany Munich 2 Data Center and Germany Rhein-Ruhr 1 Data Center in Germany, and new data center service in South Africa.

2. Stepping Up Provision of Services in Growth Fields
   To strengthen the competitiveness of its cloud services, NTT Group promoted the consolidation and strengthening of the cloud services business, such as through the transfer of cloud service facilities, development, and operational tasks from Dimension Data to NTT Communications.

Reinforcement of Framework for Global Cloud Service Provision

Acquisition of Secure-24, Leading Provider of Managed Services in the U.S.

NTT Communications Corporation, the ICT solutions and international communications business within NTT Group, and Secure-24 Intermediate Holdings, Inc., a major U.S.-based leading provider of comprehensive IT-managed services, announced that NTT Communications has completed its 100% acquisition of Secure-24, effective immediately.

IT-managed services are a key focus of NTT Group’s strategies for global growth. The acquisition of Secure-24 will enable NTT Communications, Dimension Data, and other NTT Group companies to strengthen their global capabilities to help enterprise customers effectively operate and maintain a wide range of enterprise applications, such as SAP and Oracle. Furthermore, NTT Group will combine its existing cloud, network, and data center services with Secure-24’s IT-managed services to respond to increasing global demand from customers looking to manage their hybrid IT environments.

Going forward, NTT Group will continue to strengthen the technical capabilities and global reach of its IT-managed services to help customers optimize their IT environments and digitally transform their businesses.

### Project for the Future

- Launch of Texas Dallas 1 (TX1) Data Center, one of the largest in the world
- Launch of Virginia Ashburn 3 (VA3) Data Center and construction of Virginia Ashburn 4 (VA4) Data Center
- Launch of the Germany Rhein-Ruhr 1 Data Center
- Expansion of supply capacity of Frankfurt data centers by 1.5x
- Launch of Germany Munich 2 Data Center
- Launch of Germany Rhein-Ruhr 1 Data Center
- Launch of cloud service in South Africa
- Launch of data center services in Mumbai and Bangalore
- Expansion of high-quality data center services to the Netherlands to meet anticipated surge of demand where services are offered
- Expansion of data center services in Mumbai and Bangalore
- Conclusion of agreement to acquire 100% of the shares of leading U.S.-based IT-managed service provider Secure-24 Intermediate Holdings, Inc.

### Recent Projects

- Primary Data Centers
- Data Centers Under Construction
- Underwater Cables
- Mergers and Acquisitions

### Operational Overview

#### Operation

- ANNUAL REPORT 2018
- 77
- NIPPON TELEGRAPH AND TELEPHONE CORPORATION
### Mobile Communications Business

In the Mobile Communications Business, NTT Group has worked to promote sales of the billing plan “Kakehodai & Pake-aeru” and of “docomo Hikari,” promoting collaboration with various business partners and providing new value-added services to enhance profitability in the smart life area.

#### Financial Results for the Year Ended March 31, 2018

<table>
<thead>
<tr>
<th>Financial Results</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Revenues (billions of yen)</td>
<td>¥4,193.4</td>
<td>¥4,527.1</td>
<td>¥4,584.8</td>
<td>¥4,769.4</td>
</tr>
<tr>
<td>Operating Income (billions of yen)</td>
<td>¥635.8</td>
<td>¥788.4</td>
<td>¥951.6</td>
<td>¥982.1</td>
</tr>
</tbody>
</table>

#### Details of Major Initiatives

1. **Continuously Enhancing Billing Plans**
   - In addition to continuing to promote the sales of Kakehodai & Pake-aeru, a billing plan tailored to suit a customer’s stage of life that offers more affordable rates to long-term users, NTT Group began offering its Simple Plan and docomo with, among other initiatives, working to enhance returns to its customers. As a result, the number of subscriptions to Kakehodai & Pake-aeru reached 41.96 million.

2. **Promoting Sales of docomo Hikari**
   - By utilizing the Hikari Collaboration Model from the Regional Communications Business, NTT Group promoted the sale of the “docomo Hikari Pack,” which bundles fiber-optic access infrastructure services, Internet access services, and mobile services. As a result, the number of subscriptions to docomo Hikari reached 4.76 million.

3. **Strengthening Profitability in the Smart Life Area**
   - With Komatsu Ltd. and other parties, NTT Group agreed to jointly plan and operate “LANDLOG,” a new platform connecting the entire construction manufacturing process. In addition to starting field testing of “LANDLOG,” NTT Group implemented initiatives utilizing advanced technology, including the launch of “AI Taxi,” a taxi ride demand forecasting service utilizing AI, as well as “5G Trial Life,” advancing “d+” initiatives to jointly create new added value through collaboration with various business operators.

#### Launch of my daiz AI Guide Service

- **Recent Project**
  - On May 30, 2018, NTT DOCOMO launched my daiz™, an AI guide service that provides users with the information and services they need in their daily lives at the appropriate timing from NTT DOCOMO or its partners. The my daiz service learns from the behavior of each individual customer to allow “members” (the guide services that can be provided through my daiz) of NTT DOCOMO and its partners to deliver information and services to customers’ smartphones or tablets that are tailored to the individual needs of each customer.
  - Moreover, my daiz predicts the needs of customers to enable members to supply information via voice chat, in-app information displays, and pop-ups on smartphone lock screens. It is also possible for my daiz to respond to requests from customers issued through voice commands or touch-screen operation in a conversation-like fashion. For example, my daiz can utilize other NTT DOCOMO services to search for products or contents; make reservations for partner company members, restaurants, and taxis; and respond to shopping-related consultations. The top menu of the my daiz app displays personalized information that a user is expected to need at any given time based on a learned understanding of the user’s behavior and tastes.

- **NTT DOCOMO Achieves World’s First 5G Wireless Data Transmission in Ultrahigh-Mobility Environment Exceeding 300 km/h**
  - NTT DOCOMO announced that, together with NEC Corporation and NTT, it has achieved what is believed to be the world’s first successful 28 GHz wireless data transmission between a 5G base station and a 5G mobile station in 5G field trials using a car moving at 305 km/h. This trial utilized a car to simulate the provision of 5G services on high-speed railways and in other ultrahigh-mobility environments.
  - Going forward, NTT DOCOMO will continue conducting 5G research with world-leading vendors and partners to expand 5G capabilities in a wide range of operating environments.
Data Communications Business

In the Data Communications Business, NTT Group responded to the acceleration of its customers’ expansion in the global market and the diversification and increased sophistication of their needs by working to expand its business in the global market and to expand and reliably provide a range of IT services, such as system integration, that are responsive to changes in the market.

### Financial Results for the Year Ended March 31, 2019

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Revenues (Billion yen)</th>
<th>Operating Income (Billion yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>1,511.0</td>
<td>89.4</td>
</tr>
<tr>
<td>2016</td>
<td>1,618.8</td>
<td>112.7</td>
</tr>
<tr>
<td>2017</td>
<td>1,718.7</td>
<td>107.9</td>
</tr>
<tr>
<td>2018</td>
<td>2,043.1</td>
<td>127.8</td>
</tr>
</tbody>
</table>

### Details of Major Initiatives

1. **Expanding Business in the Global Market through M&A Activities**
   - Under NTT DATA Services, launched in April 2017, NTT Group steadily achieved the integration of the former Dell Services Division, of which NTT Group completed the acquisition last year, and pursued the integration of its business centered on North America. In particular, NTT Group promoted initiatives to expand its businesses that utilize the Group’s abundant outsourcing results and knowledge in various fields, including healthcare, the public sector, and finance, and to further enhance its local presence.

2. **Utilizing Blockchain Technologies in Initiatives Targeting the Financial Industry**
   - NTT Group pursued initiatives to utilize cutting-edge blockchain technologies, established a consortium as the organizing office to complete a trade information collaborative platform, and promoted activities together with 14 companies representing various industries. Furthermore, NTT Group was selected as a partner vendor in the Japanese Bankers Association’s “Collaborative Blockchain Platform,” contributing to the promotion of practical testing to develop new services.

3. **Promoting Sales of WinActor® RPA Solution**
   - In terms of RPA solutions for the automation and streamlining of desk work, which is rapidly spreading due to the increasing move toward work style reforms in recent years, NTT Group promoted sales of WinActor®, a solution developed by NTT Group. In addition to launching the English-language version, by strengthening the functions for financial accounting operations, which have a particularly strong need for automation, and through other initiatives, NTT Group was able to introduce WinActor® to customers in a range of industries, supporting work style reforms.

### Recent Project

**Highly Convenient, Cutting-Edge Mobile Register® Public Fee Credit Payment Service for the Impending Era of FinTech**

The recent advancement of FinTech has led to the proliferation of various payment services through smartphone apps along with a rise in demand for credit card payment services that can be used in such settings as shopping at brick-and-mortar stores or online. Meanwhile, the introduction of credit card payment systems for public fees has faced an obstacle in the form of the large initial installation cost of systems at local government agencies.

To address this situation, NTT DATA introduced a credit card payment function into its Mobile Register® QR code payment service for smartphones to commercialize the Mobile Register® Public Fee Credit Payment Service for local government agencies in April 2018. Mobile Register® is a service that allows for payments to be made via Internet banking by scanning QR codes printed on bills using a dedicated smartphone app. Initially launched in May 2009, Mobile Register® was Japan’s first service for paying public fees via mobile phones, and this QR code payment system has since been introduced by several local governments in Japan. The introduction of credit card payment services will make Mobile Register® the only smartphone app in Japan to offer three payment options: payment from a bank account, account-to-account transfer, and payment using a credit card. With its low introduction costs, we anticipate that Mobile Register® will contribute to increased rates of payments for public fees as citizens enjoy the additional convenience of being able to choose from various payment options through their smartphones.

### Results of Joint-Research Project with Local Government Using WinActor®

There is a strong need for work style reforms and work efficiency improvements at local government agencies. Rising to meet this need, NTT DATA partnered with the city of Tsukuba in Ibaraki Prefecture to conduct joint RPA research as part of an initiative based on the government task of using RPA to automate processes for performing the ever-increasing load of routine work tasks. NTT Group’s WinActor® and WinDirector® RPA solutions were adopted for this project. RPA refers to technologies that allow software-based robots to perform routine work tasks via computers.

Upon verifying the benefits of using WinActor® to automate principal tasks performed by Tsukuba City, it was found that this solution could massively lower workloads, including a 73.2% reduction in the workload of city government employees pertaining to processing tasks involving individual and corporate municipal taxes. These results indicate the potential for RPA to perform tasks that local government agencies would have previously addressed through increased labor, either via overtime work or the hiring of temporary employees.

Armed with the insight gained through this joint-research project, NTT Group will support local governments as an IT partner to assist them in promoting work efficiency improvements and work style reforms.
Other Businesses

In other businesses, NTT Group mainly provided services related to the real estate business, the finance business, the construction and electric power business, and the system development business.

NTT FACILITIES

NTT FACILITIES provided one-stop solutions for buildings and energy facilities, ranging from planning and design services to construction, maintenance, operation, and upkeep services. NTT FACILITIES also utilized its technologies in the fields of ICT, energy, and construction to the fullest extent and integrated these technologies to develop smart cities that employ natural energy and use limited energy resources in an efficient and waste-free manner and realize safe cities that are resilient to natural disasters and other risks.

NTT FINANCE

As the core finance company of NTT Group, NTT FINANCE provided leasing, installment payment, financing, and other financial services that are compatible with diversifying needs, changes in the economic climate, and the progress of globalization. NTT FINANCE also provided billing and collection services for telecommunications service bills as well as credit card transaction settlement services.

NTT FACILITIES

NTT FACILITIES provided one-stop solutions for buildings and energy facilities, ranging from planning and design services to construction, maintenance, operation, and upkeep services. NTT FACILITIES also utilized its technologies in the fields of ICT, energy, and construction to the fullest extent and integrated these technologies to develop smart cities that employ natural energy and use limited energy resources in an efficient and waste-free manner and realize safe cities that are resilient to natural disasters and other risks.

Real Estate Business

NTT UD

NTT Urban Development, which is the Group’s only comprehensive real estate company, developed its office building and commercial facility operations, as well as residential operations, which are implemented principally through the Wellith brand. This company also used the expertise cultivated through these businesses to advance global operations and conduct the development and operation of hotel resort facilities.

Details of Major Initiatives

Real Estate Business

NTT UD

NTT Urban Development, which is the Group’s only comprehensive real estate company, developed its office building and commercial facility operations, as well as residential operations, which are implemented principally through the Wellith brand. This company also used the expertise cultivated through these businesses to advance global operations and conduct the development and operation of hotel resort facilities.

Finance Business

NTT FACILITIES

NTT FACILITIES provided one-stop solutions for buildings and energy facilities, ranging from planning and design services to construction, maintenance, operation, and upkeep services. NTT FACILITIES also utilized its technologies in the fields of ICT, energy, and construction to the fullest extent and integrated these technologies to develop smart cities that employ natural energy and use limited energy resources in an efficient and waste-free manner and realize safe cities that are resilient to natural disasters and other risks.

Recent Project

Completion of Otemachi PLACE Large-Scale Business Center

On August 1, 2018, the construction of Otemachi PLACE was completed. This building was constructed as part of the Otemachi 2-Chome Urban Area Redevelopment Project Type 1 advanced jointly by Urban Renaissance Agency and NTT Urban Development. Otemachi PLACE contains an office space equipped with state-of-the-art infrastructure, business continuity plans, and ICT equipment as well as one of Japan’s highest-capacity Internet data centers. Furthermore, with power source redundancy, looped district heating and cooling systems, space for accommodating individuals who cannot return home, and emergency supply stockpiles, Otemachi PLACE helps ensure business continuity within the building as well as throughout the entire Otemachi area.

This building also boasts an international conference center with the Otemachi area’s largest hall in its lower levels. Meanwhile, its Sunken Garden area is an open space under the building featuring numerous unique shops and restaurants. Other distinctive characteristics of the building include the Central Promenade that divides the city block and the Ryukan Sakura Footbridge constructed over the Nihonbashi River. True to its name, Otemachi PLACE has been created as a place for exchanges, breathing new life into the Otemachi area.

Going forward, NTT Urban Development will continue to take part in real estate and urban development projects that lend additional appeal to the surrounding communities and areas.
## NTT Group Topics

In accordance with the “Towards the Next Stage 2.0,” Medium-Term Management Strategy, each segment implemented initiatives to accelerate the process of self-transformation to become “Your Value Partner” and to return NTT Group to a profit growth track.

### First quarter

**Holding Company (Groupwide Coordination)**
- Concluded joint verification test of Japan’s first scheme for measuring racing drivers’ biometric information using hitoe®
- Analyzing driver biometric information and racing car information to contribute to higher levels of performance
- Concluded a top partner contract between the J.League and NTT DOCOMO and an official technology partner contract between the J.League and NTT Group Collaborating with the J.League and J-Club to enhance digital marketing and integrate club hometowns

**Regional Communications Business**
- NTT East reached agreement with TVS Inc., regarding collaboration for pioneering regional amenities
- NTT West started offering AI-powered road surface diagnosis solution

**Long Distance and International Communications Business**
- Launching the Texas Dallas (TDX) Data Center, one of the largest data centers in the world
- OTSiNP: AI communication engine received top prize in the AI category of the MM Research Institute Awards 2017

**Mobile Communications Business**
- Succeeded in creating mobile phone service area using three base stations as disaster preparedness measure
- Announced ‘The LANDLOG’ platform connecting the entire construction manufacturing process
- Introduced Shibuya-ko Model—an ICT education system designed for Shibuya-ko using NTT DOCOMO’s LTE lines—at public elementary and junior high schools in Shibuya-ku

**Data Communications Business**
- NTT DATA was named a Leader in the IDC MarketScape: Worldwide Retail Banking Omni-Channel Engagement (IT Implementation Services) 2017 Vendor Assessment (IDC #US40831016, Mar. 2017)
- Launched English version of Japanese-style WorkLife® robotic process automation (RPA) solution and began global deployment

### Second quarter

**Overview**
- Strategy
- Operation

**Strategy**
- Committed to joint research project for promoting the proliferation of lifestyle support robots with TOYOTA MOTOR CORPORATION
- Working toward a society in which humans coexist with robots

**Operation**
- Launched domestic service of FANUC CORPORATION’s FANUC Intelligent Edge
- Link and Drive system opens manufacturing platforms
- Participating in development project for realizing never-before-seen sophisticated manufacturing sites
- Held performance of first self-driving car to operate on public roads in the heart of Sapporo City, Hokkaido Prefecture
- Developing new businesses and shaping society through verification tests using cutting-edge technologies

**Holding Company (Groupwide Coordination)**
- Committed joint verification test on information infrastructure design at Haneda Airport
- Moving to verification phase for world-leading hospital provided at the entrance to Japan

**Regional Communications Business**
- Subscriptions for FLIGHTS Nihai and Hikari Collaborative Media’s fiber-optic access services exceeded 9 million at NTT West
- Began providing Active Blacklist Threat Intelligence—high-accuracy malicious site information service

**Long Distance and International Communications Business**
- Strengthened solutions coordination together with NTT DATA-Mitsui Data Center EAST
- Began providing Active Blacklist Threat Intelligence—high-accuracy malicious site information service

**Mobile Communications Business**
- Strengthened solutions coordination together with NTT DATA-Mitsui Data Center EAST
- Began introducing Shibuya-ko Model—an ICT education system designed for Shibuya-ko using NTT DOCOMO’s LTE lines—at public elementary and junior high schools in Shibuya-ku

**Data Communications Business**
- Began providing AI-powered taxi demand projection service
- Active Blacklist Threat Intelligence
- Began providing AI-powered taxi demand projection service

### Third quarter

**Overview**
- Strategy
- Operation

**Strategy**
- Concluded agreement to acquire 100% of the shares of Secure-24
- Responding to robust global demand by strengthening rental services
- Concluded agreement to acquire 100% of the shares of Secure-24
- Regarding collaboration for invigorating regional economies

**Operation**
- Commenced joint-research project for utilizing RPA at local government agencies
- Commenced joint-research project for utilizing RPA at local government agencies
- Concluded agreement to acquire 100% of the shares of Secure-24
- Regarding collaboration for invigorating regional economies

**Holding Company (Groupwide Coordination)**
- Commenced public verification test on information infrastructure design at Haneda Airport
- Moving to verification phase for world-leading hospital provided at the entrance to Japan
- Commencing joint research project for utilizing RPA at local government agencies

**Regional Communications Business**
- NTT East received agreement with TVS Inc., regarding collaboration for pioneering regional amenities
- NTT West reached agreement with TVS Inc., regarding collaboration for pioneering regional amenities
- NTT Communications was named a Leader in IaaS and UCaaS quadrants

**Long Distance and International Communications Business**
- Commenced joint-research project for utilizing RPA at local government agencies
- Concluded agreement to acquire 100% of the shares of Secure-24
- Regarding collaboration for invigorating regional economies

**Mobile Communications Business**
- Began introducing Shibuya-ko Model—an ICT education system designed for Shibuya-ko using NTT DOCOMO’s LTE lines—at public elementary and junior high schools in Shibuya-ku
- Subscriptions for docomo with Kake-hodai & Pake-aeru surpassed 40 million a mere three years and five months after launch
- Subscriptions for docomo with Kake-hodai & Pake-aeru surpassed 40 million a mere three years and five months after launch

**Data Communications Business**
- Commenced joint-research project for utilizing RPA at local government agencies
- Commenced joint-research project for utilizing RPA at local government agencies
- Commenced joint-research project for utilizing RPA at local government agencies

### Fourth quarter

**Overview**
- Strategy
- Operation

**Strategy**
- Committed joint verification test on information infrastructure design at Haneda Airport
- Moving to verification phase for world-leading hospital provided at the entrance to Japan
- Producing the “Touchless Battery®,” a biodegradable battery made only of materials with a low environmental impact

**Operation**
- Held exhibition at Mobile World Congress 2018, the world’s largest mobile industry exhibitions
- Introducing new value created in various industry fields through model case studies using AI, IoT, and 5G technologies
- Held exhibition at Mobile World Congress 2018, the world’s largest mobile industry exhibitions
- Introducing new value created in various industry fields through model case studies using AI, IoT, and 5G technologies

**Holding Company (Groupwide Coordination)**
- Concluded a top partner contract between the J.League and NTT DOCOMO and an official technology partner contract between the J.League and NTT Group
- Collaborating with the J.League and J-Club to enhance digital marketing and integrate club hometowns

**Regional Communications Business**
- NTT East reached agreement with TVS Inc., regarding collaboration for pioneering regional amenities
- NTT West reached agreement with TVS Inc., regarding collaboration for pioneering regional amenities
- NTT Communications was named a Leader in IaaS and UCaaS quadrants

**Long Distance and International Communications Business**
- NTT East finalized decision to construct a new data center in Osaka during 2019
- NTT East finalized decision to construct a new data center in Osaka during 2019
- NTT Communications was named a Leader in IaaS and UCaaS quadrants

**Mobile Communications Business**
- NTT West finalized decision to construct a new data center in Osaka during 2019
- NTT West finalized decision to construct a new data center in Osaka during 2019
- NTT Communications was named a Leader in IaaS and UCaaS quadrants

**Data Communications Business**
- NTT DATA was named a Leader in the IDC MarketScape: Worldwide Retail Banking Omni-Channel Engagement (IT Implementation Services) 2017 Vendor Assessment (IDC #US40831016, Mar. 2017)
- NTT DATA was named a Leader in the IDC MarketScape: Worldwide Retail Banking Omni-Channel Engagement (IT Implementation Services) 2017 Vendor Assessment (IDC #US40831016, Mar. 2017)
Overview

Strategy

Operation

NIPPON TELEGRAPH AND TELEPHONE CORPORATION ANNUAL REPORT 2018

• Capital investment is on an accrual basis for the acquisition of property, plant and equipment.

NIPPON TELEGRAPH AND TELEPHONE CORPORATION ANNUAL REPORT 2018

NTT Group has applied International Financial Reporting Standards (IFRS) beginning with the three months ended June 30, 2018.

Nippon Telegraph and Telephone Corporation and its subsidiaries

Financial Summary

EBITDA = Operating income + Depreciation + Loss on sales of property, plant and equipment + Impairment loss

• From the fiscal year ended March 31, 2017, the method for calculating EBITDA has been revised.

EBITDA margin = (Operating income + Depreciation and amortization + Loss on sales and disposal of property, plant and equipment + Impairment loss) / Operating revenues × 100

Employees (Thousands) (At year-end) 196 195 219 224 227 240 242 241 275

EBITDA 3,383.4 3,249.3 3,286.0 3,234.1 3,244.2 3,204.2 3,063.4 3,277.9 3,183.3

Research and development expenses (For the year) 268.2 278.1 268.2 267.9 269.2 249.3 233.8 213.4 211.6

Cash dividends, applicable to earnings for the year(2) 55.00 60.00 60.00 70.00 80.00 85.00 90.00 110.00 120.00

Free cash flows 244.4 508.9 778.7 537.1 677.4 821.1 533.2 952.0 828.1

Employees (Thousands) (At year-end) 196 195 219 224 227 240 242 241 275

Cash dividends, applicable to earnings for the year(2) 55.00 60.00 60.00 70.00 80.00 85.00 90.00 110.00 120.00

Free cash flows 244.4 508.9 778.7 537.1 677.4 821.1 533.2 952.0 828.1

EBITDA margin

32.5% 31.9% 31.9% 30.8% 30.3% 29.3% 27.6% 28.4% 27.9%

Other financial data, performance indicators, etc.

Interest-bearing liabilities

¥ 4,899.3 ¥ 4,491.7 ¥ 4,553.5 ¥ 4,274.0 ¥ 4,036.0 ¥ 4,200.0

D/E ratio

67.1% 57.7% 56.8% 54.2% 49.0% 49.2%

Capital investment (For the year)(1)

2,145.1 1,813.6 1,870.2 1,946.0 1,970.2 1,982.0

Cape to sales (%) 20.8% 19.5% 18.1% 16.5% 18.4% 17.3%

Depreciation and amortization (For the Year)

2,139.2 2,012.1 1,962.5 1,910.7 1,889.2 1,880.3

Research and development expenses (For Year)

268.2 278.1 268.2 267.9 269.2 249.3

EBITDA

3,985.4 3,249.3 3,286.0 3,324.1 3,342.3 3,204.2

EBITDA margin 32.5% 31.9% 31.9% 30.8% 30.3% 29.3%

Free cash flows

244.4 508.9 778.7 537.1 677.4 821.1 533.2 952.0 828.1

Employees (Thousands) (At year-end) 196 195 219 224 227 240 242 241 275

Cash dividends, applicable to earnings for the year(2)

55.00 60.00 60.00 70.00 80.00 85.00 90.00 110.00 120.00

Dividend payout ratio (%) 27.5% 32.3% 31.2% 38.2% 37.2% 33.4%

RCE (%) 7.3% 6.5% 6.4% 5.9% 6.5% 7.0%

EPS (Yen)(1)

235.21 180.02 192.58 183.44 215.34 254.42

(1) Please refer to Reconciliation of Capital Investment and Reconciliation of EBITDA Margin on page 69.

(2) Capital investment is an accrual basis for the acquisition of property, plant and equipment.

(3) From the fiscal year established March 1, 2017, the method for calculating net GAAP has been revised.

(4) Net income attributable to NTT shareholders.

(5) NTT Group has applied IFRS for the three months ended June 30, 2018.

(6) Weighted average number of shares outstanding: when the number of shares increases due to the exercise of warrants or options, or if any other capital increase occurs, the diluted EPS is calculated using the weighted average number of shares outstanding.

(7) Excludes movements of certain NTT Group Group businesses that have been deconsolidated in the current year.

(1) Financial results based on IFRS have not been audited, and are provided for reference only. These figures are subject to change, pending results of the independent financial audit.
Overview
Strategy
Operation

Business Segment Data

Total Operating Revenues
(Billions of yen)

Financial Summary

—4 Financial results based on IFRS have not been audited, and are provided for reference only. These figures are subject to change, pending results of the independent financial audit.
—2 The scope of aggregation for each of the figures presented for NTT West group is internal management figures after eliminating internal transactions between NTT West and its subsidiaries.
—1 The scope of aggregation for each of the figures presented for NTT East group is internal management figures after eliminating internal transactions between NTT East and its subsidiaries.

Total Operating Profit
(Billions of yen)

Reconciliation of Capital Investment

Fiscal years ended March 31

Payments for property, plant, and equipment
¥1,466.7 ¥1,444.0 ¥1,265.6 ¥1,301.7 ¥1,208.7
Payments for acquisition of intangible fixed assets
416.6 358.2 371.9 400.1 402.0
Total
¥1,883.3 ¥1,802.1 ¥1,637.5 ¥1,701.8 ¥1,610.7

Differences between capital investment
12.0 (14.4) (49.7) 1.8 36.0

Reconciliation of EBITDA Margin

Fiscal years ended March 31

Operating Income
¥1,511.0 ¥1,343.0 ¥1,165.2 ¥1,215.0 ¥1,916.6

Depreciation and amortization
1,880.3 1,620.0 1,756.3 1,422.7 1,339.4

EBITDA
3,204.2 3,063.4 3,277.9 3,183.3 3,215.8

EBITDA margin
29.9% 27.5% 27.4% 27.9% 27.3%

Average monthly revenue per unit (ARPU)

Average monthly revenue per unit, or ARPU, is used to measure average monthly operating revenues on a per subscriber (user) basis. In the case of NTT Group’s fixed line business, ARPU is calculated by dividing revenue items included in the operating revenues of NTT Group’s regional communications business segment (i.e., fixed line (Telephone Subscriber Lines + INS-Net Subscriber Lines) and FLET’S HiKari) by the number of active subscribers to the relevant services. In the case of the mobile communications business, ARPU is calculated by dividing communications services revenue items included in operating revenues from NTT Group’s mobile communications business segment, such as revenues from LTE (i) mobile phone services, FOMA mobile phone services, and docomo HiKari services (with certain exceptions), by the number of active users to the relevant services. The calculation of these figures excludes revenues that are not representative of monthly average usage, such as telecommunications equipment sales, activation fees, and universal service charges. NTT believes that its ARPU figures calculated in this way provide useful information regarding the monthly average usage of its subscribers. The revenue items included in the numerators of NTT Group’s ARPU figures are based on its financial results comprising its U.S. GAAP or IFRS results of operations.

Method of calculating ARPU

(a) NTT East and NTT West

NTT computes the following two categories of ARPU for business conducted by each of NTT East and NTT West:

• Aggregate Fixed line ARPU: Telephone Subscriber Lines + INS-Net Subscriber Lines: Calculated based on revenues from monthly charges and call charges for Telephone Subscriber Lines and INS-Net Subscriber Lines, which are included in operating revenues from Voice Transmission Services (excluding ISDN Services), and revenues from FLET’S ADSL and FLET’S ISDN, which are included in operating revenues from IP Services.

• FLET’S HiKari ARPU: Calculated based on revenues from FLET’S HiKari (including FLET’S HiKari optional services), which are included in operating revenues from Voice Transmission Services (excluding ISDN Services), and revenues from FLET’S HiKari, which are included in operating revenues from ISDN Services; revenues from monthly charges, call charges, and connection device charges for HiKari Denwa; and revenues from FLET’S HiKari optional services, which are included in Supplementary Business revenues.

(1) FLET’S HiKari includes B FLET’S, FLET’S HiKari Next, FLET’S HiKari Light, FLET’S HiKari Lightplus, and FLET’S HiKari WR Access provided by NTT East; and B FLET’S, FLET’S HiKari Premium, FLET’S HiKari Mytown, FLET’S HiKari Mytown Next, FLET’S HiKari Mytown Light, and FLET’S HiKari WiFi Access provided by NTT West. In addition, FLET’S HiKari also includes the HiKari Collaboration Model, the wholesale provision of services to service providers by NTT East and NTT West. FLET’S HiKari optional services include wholesale services provided to service providers by NTT East and NTT West.

(2) Aggregate Fixed Line ARPU (Telephone Subscriber Lines + INS-Net Subscriber Lines) and FLET’S HiKari ARPU do not include interconnection charges.

Group Data

<table>
<thead>
<tr>
<th>Fiscal years ended NTT</th>
<th>Billion of yen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NTT East Group*1</td>
</tr>
<tr>
<td>Operating revenues</td>
<td>1,798.8</td>
</tr>
<tr>
<td>Operating expenses / Selling, general and administrative expenses</td>
<td>1,554.1</td>
</tr>
<tr>
<td>Operating profit</td>
<td>232.7</td>
</tr>
<tr>
<td>Profit attributable to NTT</td>
<td>162.4</td>
</tr>
</tbody>
</table>

*1 The scope of aggregation for each of the figures presented for NTT East group is internal management figures after eliminating internal transactions between NTT East and its subsidiaries. Such figures are not audited and are provided for reference only.

*2 The scope of aggregation for each of the figures presented for NTT West group is internal management figures after eliminating internal transactions between NTT West and its subsidiaries. Such figures are not audited and are provided for reference only.

*3 The scope of aggregation for each of the figures presented for NTT Communications group is internal management figures after eliminating internal transactions between NTT Communications and its subsidiaries. Such figures are not audited and are provided for reference only.

*4 Financial results based on IFRS have not been audited, and are provided for reference only. These figures are subject to change, pending results of the independent financial audit.
(1) For purposes of calculating Aggregate Fixed Line ARPU (Telephone Subscriber Lines + INS-NET Subscriber Lines), the number of subscribers is determined based on the number of subscriptions for fixed-line services (Telephone Subscriber Lines + INS-NET Subscriber Lines).

(2) The number of users used to calculate ARPU is total number of subscriptions, excluding the subscriptions listed below:

- Number of active users

Note that the sum of Packet ARPU and docomo NTT ARPU is referred to as "Data ARPU.

(3) For purposes of calculating Aggregate Fixed Line ARPU (Telephone Subscriber Lines + INS-NET Subscriber Lines), one INS-NET 1500 subscription is calculated as ten INS-NET 64 subscriptions.

(4) For purposes of calculating FLET’S Hikari ARPU, the number of subscribers is determined based on the number of FLET’S Hikari subscribers, which includes subscribers to FLET’S, FLET’S Hikari Next, FLET’S Hikari Light, FLET’S Hikari Lightplus and FLET’S Hikari WiFi Access provided by NTT East, subscribers to FLET’S, FLET’S Hikari Premium, FLET’S Hikari Mytown, FLET’S Hikari Next, FLET’S Hikari Mytown Next, FLET’S Hikari Light and FLET’S Hikari WiFi Access provided by NTT West, and the Hikari Collaboration Model, the wholesale provision of services to service providers by NTT East and NTT West.

(5) Numbers of active users used in the ARPU calculation of NTT DOCOMO are as described below.

The following is the formula NTT use to compute ARPU for NTT DOCOMO.

Fiscal year results: Sum of number of active subscribers ((number of subscribers at end of previous month + number of subscribers at end of current month)/2) for each month from April to March

Number of active users = subscriptions

ARPU related revenues (basic monthly charges, voice communication charges) / number of active users

ARPU is referred to as "Data ARPU.

ARPU related revenues (basic monthly charges, voice communication charges) / Number of active users Packet ARPU, Packet ARPU related revenues (basic monthly charges, packet communication charges) / Number of active users docomo Hikari ARPU, docomo Hikari ARPU related revenues (basic monthly charges, voice communication charges) / Number of active users

Note that revenue from communication module services, Phone Number Storage, Mail Address Storage, docomo Business Transceiver and wholesale telecommunications services and interconnecting telecommunications facilities that are provided to MNOs and Data Plan subscriptions in the case where the customer contracting for such subscription in his/her name also has a subscription for XI or ROMA services in his/her name.

Reference Information

Overview
Strategy
Operation

Consolidated Balance Sheets
Nippon Telegraph and Telephone Corporation and its subsidiaries
March 31

Millions of yen

U.S. GAAP

2018
2017

ASSETS

Current assets:

Cash and cash equivalents ¥ 925,213 ¥ 780,300
Short-term investments 63,644 31,641
Notes and accounts receivable, trade 2,088,736 2,076,467
Allowance for doubtful accounts (46,629) (52,352)
Accounts receivable, other 505,141 682,196
Inventories 301,379 393,582
Prepaid expenses and other current assets 723,712 773,745
Deferred income taxes 228,590
Total current assets 5,512,423 5,387,583

Property, plant and equipment:

Telecommunications equipment 11,046,115 10,317,881
Telecommunications service lines 16,054,732 14,371,536
Buildings and structures 6,147,869 6,288,584
Machinery, vessels and tools 2,032,368 2,127,261
Land 1,392,885 1,387,586
Construction in progress 421,819
Subtotal 37,005,609 34,009,806
Accumulated depreciation (523,810) (484,699)
Other intangible assets 453,916 594,499
Other assets 1,482,076 1,390,836
Deferred income taxes 398,871 320,834
Total noncurrent assets and other assets 4,218,881 3,421,834
Total assets ¥ 21,250,325 ¥ 21,675,740

LIABILITIES AND EQUITY

Current liabilities:

Short-term borrowings ¥ 227,207 ¥ 270,743
Current portion of long-term debt 681,004 624,895
Accounts payable, trade 1,612,996 1,615,516
Current portion of obligations under capital leases 14,430 12,557
Accrued interest 443,326 455,307
Accrued taxes on income 238,755 245,326
Accrued consumption tax 75,083 88,420
Advances received 324,342 374,444
Other 512,388 540,366
Total current liabilities 4,131,393 4,217,748

Long-term liabilities:

Long-term debt (excluding current portion) 3,168,478 2,947,045
Obligations under capital lease (excluding current portion) 22,587 22,587
Liability for employees’ retirement benefits 1,593,381 1,619,207
Accrued liabilities for point programs 102,847 105,307
Deferred income taxes 166,751 138,833
Other 491,132 523,919
Total long-term liabilities 6,533,961 6,545,298

Total liabilities 11,665,354 11,765,046
Nippon Telegraph and Telephone Corporation (“NTT”) shareholders’ equity

Common stock, no par value 937,950 937,950
Treasury stock, at cost (575,223) (610,742)
Retained earnings 5,056,555 5,300,631
Accumulated other comprehensive income (loss) 1,095,042 1,095,042
Treasury stock, at cost (575,223) (610,742)
NTT shareholders’ equity 11,507,756 11,805,257

Noncontrolling interests

Common stock, no par value 152,087 152,087
Treasury stock, at cost (7,107,165) (7,107,165)
Retained earnings 49,930 49,930
Accumulated other comprehensive income (loss) 4,592,872 4,592,872
Other 575,792 575,792
Total equity 12,032,551 12,700,029

Total liabilities and equity ¥ 21,250,325 ¥ 21,675,740

Reference Information

Overview
Strategy
Operation

90
NIPPON TELEGRAPH AND TELEPHONE CORPORATION
ANNUAL REPORT 2018
91

Overview
Strategy
Operation

NIPPON TELEGRAPH AND TELEPHONE CORPORATION ANNUAL REPORT 2018

Consolidated Statements of Comprehensive Income
Nippon Telegraph and Telephone Corporation and its subsidiaries

Year ended March 31

Consolidated Statements of Comprehensive Income

Millions of yen

U.S. GAAP
2017 2018

Operating revenues:
Fixed voice related services ¥1,233,885 ¥1,146,001
Mobile voice related services 865,203 942,183
IP / packet communications services 3,808,972 3,601,771
Sale of telecommunication equipment 806,493 843,548
System integration 3,041,587 3,443,147
Other 1,634,786 1,622,097
11,391,016 11,798,587

Operating expenses:
Cost of services (excluding items shown separately below) 2,487,588 2,349,541
Cost of equipment sold (excluding items shown separately below) 879,725 915,640
Cost of system integration (excluding items shown separately below) 2,161,007 2,471,347
Depreciation and amortization 1,462,235 1,336,433
Impairment losses:
Goodwill 53,204 18,864
Metal cables —
Other 20,558 18,505
Selling, general and administrative expenses 2,786,500 2,915,724
4,997,327 5,166,744

Operating income 1,393,689 1,642,843

Other income (expenses):
Interest and amortization of bond discounts and issue costs (37,701) (52,198)
Interest income 17,753 19,094
Income from arbitration award — 147,646
Other, net 7,988 (21,771)
11,391,016 11,798,587

Income before income taxes and equity in earnings (losses) of affiliated companies 1,527,769 1,756,624

Income tax expense (benefit):
Current 472,711 552,525
Deferred (4,341) 5,339
468,370 546,864

Income before equity in earnings (losses) of affiliated companies 1,059,399 1,213,760

Equity in earnings (losses) of affiliated companies (217) 5,051

Net income 1,059,181 1,218,311

Less—Net income attributable to noncontrolling interests (1,836) (102,414)

Net income attributable to NTT ¥952,125 ¥909,695

Net income attributable to NTT (yen) ¥390.94

Weighted average number of shares outstanding (shares) 2,046,678,144 1,995,912,757

Net income attributable to NTT per share of common stock ¥390.94 ¥465.78

Cash dividends to be paid to shareholders of record date (yen) ¥150.00 ¥150.00

U.S. GAAP

Consolidated Statements of Comprehensive Income

Millions of yen

U.S. GAAP
2017 2018

Net income ¥1,059,181 ¥1,218,311

Other comprehensive income (loss), net of tax
 Unrealized gain (loss) on securities 12,308 25,720
 Unrealized gain (loss) on derivative instruments 855 1,982
 Foreign currency translation adjustments (24,677) 9,419
 Pension liability adjustments 91,034 23,712
 Total other comprehensive income (loss) 73,156 60,833

Total comprehensive income (loss) 1,132,337 1,280,144

Less—Comprehensive income (loss) attributable to noncontrolling interests 278,858 324,131

Total comprehensive income (loss) attributable to NTT ¥952,125 ¥909,695

Overview
Strategy
Operation

NIPPON TELEGRAPH AND TELEPHONE CORPORATION ANNUAL REPORT 2018

Consolidated Statements of Changes in Equity
Nippon Telegraph and Telephone Corporation and its subsidiaries

Year ended March 31

Consolidated Statements of Changes in Equity

Millions of yen

U.S. GAAP
Year Ended March 31, 2017

Common stock Additional paid-in capital Retained earnings Accumulated other comprehensive income (loss) Treasury stock at cost Total Noncontrolling interests Total equity

At beginning of year $2,077,850 $2,879,560 $5,074,234 $ (57,259) $ (883) $8,833,806 $2,405,278 $11,240,082

Adjustments due to change in fiscal year end of consolidated subsidiaries (214) (1,828) (1,478) (1,668) (1,828) (1,478) (1,668)

At beginning of year (as adjusted) 2,077,850 2,879,560 5,074,234 (68,556) (960) 8,833,806 2,405,278 11,237,086

Net income 850,129 800,329 207,630 1,067,222

Other comprehensive income (loss) 60,071 60,071 20,389 80,460

Cash dividends (247,994) (247,994) (113,167) (361,161)

Changes in NTT's ownership interest in subsidiaries (16,700) (18,508) (11,408) (11,408)

Stock compensation transactions 1,175 1,175 1,175

Acquisition of treasury stock (374,348) (374,348) (374,348)

Sale of telecommunication equipment 806,493 843,548

1,138,558 1,138,558

Year Ended March 31, 2018

At beginning of year $2,077,850 $2,862,035 $5,626,155 $ 1,562 $ (375,223) $9,052,479 $2,455,277 $11,507,756

Adjustments due to change in fiscal year end of consolidated subsidiaries 984 (2,387) (2,387) (2,387) (2,387)

At beginning of year (as adjusted) 2,077,850 2,862,035 5,627,119 (7,862) (275,223) 9,050,062 2,453,285 11,503,357

Net income 909,695 909,695 1,219,311

Other comprehensive income (loss) 46,318 46,318 14,101 60,419

Cash dividends (271,405) (271,405) (126,362) (497,767)

Changes in NTT's ownership interest in subsidiaries (1,838) (102,414) (104,250)

Stock compensation transactions (6,587) (6,587) (6,587)

Acquisition of treasury stock (235,531) (235,531) (235,531)

Sale of telecommunication equipment 843,548

1,280,144 1,280,144

Year Ended March 31, 2019

At beginning of year $2,077,850 $2,865,013 $6,205,031 $ 44,529 $ (110,742) $9,485,381 $2,546,570 $12,032,551

* Changes in the redeemable noncontrolling interest are not included in the table.
Operating and Financial Review

Operating Revenues and Expenses

Operating Revenues

NTT Group’s operating revenues are divided into six service categories, comprising fixed voice-related services, mobile voice-related services, IP/packet communications services, sales of telecommunication equipment, system integration and other. Operating revenues in the fiscal year ended March 31, 2018 increased 3.6% from the previous fiscal year to ¥1,179.6 billion. This increase was due to factors such as an increase in revenues in the data communications business segment, primarily due to overseas sales, and an increase in revenues in the mobile communications business segment, primarily due to the expansion of mobile communications. Operating revenues for each service category for the fiscal year ended March 31, 2018 are summarized as follows:

■ Fixed Voice Related Services

NTT Group’s fixed voice related services include a portion of the services it provides in the mobile communications business segment and long distance and international communications business segment, such as telephone subscriber lines, NIS-Net, conventional leased circuits and high-speed digital.

■ System Integration

NTT Group’s system integration services include its data communications business segment and a portion of the services it provides in the long distance and international communications business segment and the regional communications business segment.

■ Mobile Related Services

Mobile voice related services include a portion of the services NTT Group provides in the mobile communications business segment, such as LTE 08.

■ IP / Packet Communications Services

NTT Group’s IP/packet communications services include a portion of the services it provides in the regional communications business segment, such as FLETs-Hi, a portion of the service it provides in the long-distance and international communications business segment, such as Arca Universal One, i-FP-VPN, and OCN, as well as a portion of the services it provides in the mobile communications business segment, such as LTE (4G) packet communications services.

In the fiscal year ended March 31, 2018, revenues from telecommunication equipment sales increased 4.6% from the previous fiscal year to ¥843.5 billion, accounting for 7.1% of total operating revenues. This increase was primarily due to an increased number of wholesale sales of handsets, such as smartphones, in the mobile communications business segment.

■ Other

Other services primarily comprise building maintenance, real estate rentals, systems development, leasing activities and the smart life area in the mobile communications business segment.

In the fiscal year ended March 31, 2018, revenues from other services decreased 0.8% from the previous fiscal year to ¥1,146.9 billion, accounting for 9.7% of total operating revenues. This decrease was due to factors such as the impact of the expansion of consolidated subsidiaries resulting from the acquisition of the former Delf Services Denmark and a scope of business in the data communications business segment.

Operating Expenses

Operating expenses in the fiscal year ended March 31, 2018 decreased 7.0% from the previous fiscal year to ¥1,146.9 billion, accounting for 9.7% of total operating revenues. This decrease was due to a decrease in expenses in the following areas:

■ Personnel Expenses

Personnel expenses in the fiscal year ended March 31, 2018 increased 5.8% from the previous fiscal year to ¥2,408.3 billion. This increase was mainly due to the increase in personnel expenses as a result of the effect of the expansion of consolidated subsidiaries in the data communications business segment, despite a decrease in personnel expenses due to employee retirements in the regional communications business segment.
Overview

Strategy

Operation

The fiscal year ended March 31, 2018, compared with the fiscal year ended March 31, 2017

<table>
<thead>
<tr>
<th>Fiscal year ended March 31</th>
<th>Billion of yen</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>2018</td>
</tr>
<tr>
<td>Operating revenues</td>
<td>¥11,391.0</td>
</tr>
<tr>
<td>Fixed voice-related services</td>
<td>1,233.9</td>
</tr>
<tr>
<td>Mobile voice-related services</td>
<td>865.3</td>
</tr>
<tr>
<td>IP / Packet communications services</td>
<td>3,809.0</td>
</tr>
<tr>
<td>Sales of telecommunications equipment</td>
<td>606.5</td>
</tr>
<tr>
<td>System integration</td>
<td>3,041.6</td>
</tr>
<tr>
<td>Other</td>
<td>1,634.8</td>
</tr>
<tr>
<td>Operating expenses</td>
<td>9,851.2</td>
</tr>
<tr>
<td>Operating income</td>
<td>1,539.8</td>
</tr>
<tr>
<td>Other income (expenses)</td>
<td>(12.0)</td>
</tr>
<tr>
<td>Income before income taxes and equity in earnings (losses) of affiliated companies</td>
<td>1,527.8</td>
</tr>
<tr>
<td>Income tax expense (benefit)</td>
<td>468.4</td>
</tr>
<tr>
<td>Equity in earnings (losses) of affiliated companies</td>
<td>0.0</td>
</tr>
<tr>
<td>Net income</td>
<td>1,059.4</td>
</tr>
<tr>
<td>Less—Net income attributable to noncontrolling interests</td>
<td>259.2</td>
</tr>
<tr>
<td>Net income attributable to NTT</td>
<td>800.1</td>
</tr>
</tbody>
</table>

In the fiscal year ended March 31, 2018, income tax expense increased 15.7% from the previous fiscal year to ¥154.1 billion. This increase was due to an increase in net income before income taxes, in addition to other factors. As a result, effective tax rates for the fiscal year ended March 31, 2017 and for the fiscal year ended March 31, 2018 were 30.86% and 30.98%, respectively.

In the fiscal year ended March 31, 2018, NTT Group reduced costs by ¥856.0 billion compared to its fiscal year ended March 31, 2017, due to a reduction in fiber-optic-related capital expenditures in the regional communications business and ¥110.0 billion in the mobile communications business segment.

Depreciation and amortization expenses in the fiscal year ended March 31, 2018, compared with the fiscal year ended March 31, 2017 was ¥5.6 billion compared to ¥(0.0) billion. This decrease was mainly due to the fact that the accelerated depreciation of prior-generation equipment that was recorded in the fiscal year ended March 31, 2017 was not recorded in the fiscal year ended March 31, 2018.

As a result of the foregoing, operating income for the fiscal year ended March 31, 2018, decreased 8.4% from the previous fiscal year to ¥1,339.4 billion. This decrease was mainly due to the fact that the accelerated depreciation of prior-generation equipment that was recorded in the fiscal year ended March 31, 2017 was not recorded in the fiscal year ended March 31, 2018.

Operating income as a percentage of operating revenues was 11.7% in the fiscal year ended March 31, 2018, compared with 11.5% in the fiscal year ended March 31, 2017. The decrease in payments was due to, among other things, a decrease in payments due to capital investments due to data center construction and an increase in the number of consolidated overseas subsidiaries in the long distance and international communications business, despite a decrease in capital investments related to improved efficiency in the maintenance of equipment in the regional communications business and improved efficiency in the construction of base stations in the mobile communications business. The total amount of expected capital investments includes ¥540.0 billion in the regional communications business and ¥170.0 billion in the mobile communications business. The actual amount of capital invest- ments may be different from expected one, since capital investments may be influenced by trends in demand, the competitive environment and other factors. In addition, the actual amount of NTT Group’s financing will depend on its future performance, market conditions and other factors, and is therefore difficult to predict.

Liquidity and Capital Resources

Financing, Capital Resources and Use of Funds

Net cash provided by operating activities during the fiscal year ended March 31, 2018, excluding the effect of a non-business day, amounted to ¥2,869.5 billion, a decrease of ¥47.9 billion from ¥2,917.4 billion in the fiscal year ended March 31, 2017. This decrease was primarily due to a decrease in the amount of accounts receivable collected in the fiscal year ended March 31, 2018, compared to the fiscal year ended March 31, 2017. Net cash provided by operating activities during the fiscal year ended March 31, 2018, was ¥2,637.5 billion.

Net cash used in investing activities during the fiscal year ended March 31, 2018, amounted to ¥1,841.8 billion, a decrease of ¥47.5 billion from ¥2,089.3 billion in the fiscal year ended March 31, 2017. This decrease was due to, among other things, a decrease of ¥230.4 billion in expenditures on acquisitions of subsidiaries, due to an increase of ¥89.9 billion in investments for property, plant and equipment and intangibles on a cash basis.

The increase in payments for investments in property, plant and equipment and intangibles for the fiscal year ended March 31, 2018, resulted from, among other things, an increase in capital expenditures due to the expansion of the scope of large-scale projects in the data communications business, despite a decrease in capital expenditures due to a reduction in fiber-optic-related capital expenditures in the regional communications business and improved efficiency in the construction of base stations in the mobile communications business. The capital investment amounted to ¥1,674.8 billion on an accrual basis, of which ¥546.6 billion was invested in the regional communications business and ¥176.4 billion was invested in the mobile communications business. The capital investment amounted to ¥1,674.8 billion on an accrual basis, of which ¥546.6 billion was invested in the regional communications business and ¥176.4 billion was invested in the mobile communications business.

Net cash used in financing activities during the fiscal year ended March 31, 2018, amounted to ¥931.7 billion, a decrease in payments of ¥49.9 billion from ¥981.5 billion in the fiscal year ended March 31, 2017. The decrease in payments was due to, among other things, a net decrease of ¥136.9 billion in payments due to stock repurchases despite a net increase of ¥79.2 billion in expenses from the repayment of short-term and long-term debt. The capital raised from the issuance of long-term debt in the fiscal year ended March 31, 2018, includes ¥59.0 billion in net proceeds from corporate bond offerings and an aggregate of ¥13.0 billion in loans from financial institutions. As of March 31, 2018, the total balance of the interest-bearing liabilities of NTT Group was ¥3,854.8 billion, a decrease of ¥233.4 billion from the balance of ¥4,088.2 billion as of March 31, 2017. The ratio of interest-bearing liabilities to shareholders’ equity stood at 40.4% as of March 31, 2018 (49.5% as of March 31, 2017). Interest-bearing liabilities as of March 31, 2018 comprised short-term debt and long-term debt, as shown in Note 14 to the Consolidated Financial Statements, as well as ¥11.8 billion in deposits received pursuant to depositary agreements.

NTT Group believes that the net cash it expects to generate from operating activities, financing from banks and other financial institutions and/or offerings of equity or debt securities in the capital markets will provide the requisite financial resources to meet NTT Group’s current and anticipated capital investment and other expenditure needs and payment of debt.

For the fiscal year ended March 31, 2019, NTT Group expects to make capital investments totaling ¥1,700.0 billion on an accrual basis, due to, among other things, an increase in capital investments due to data center construction and an increase in the number of consolidated overseas subsidiaries in the long distance and international communications business, despite a decrease in capital investments related to improved efficiency in the maintenance of equipment in the regional communications business and improved efficiency in the construction of base stations in the mobile communications business. The total amount of expected capital investments includes ¥540.0 billion in the regional communications business and ¥170.0 billion in the mobile communications business. The actual amount of capital investments may be different from expected one, since capital investments may be influenced by trends in demand, the competitive environment and other factors. In addition, the actual amount of NTT Group’s financing will depend on its future performance, market conditions and other factors, and is therefore difficult to predict.

Liquidity

As of March 31, 2018, NTT Group had cash and cash equivalents balance including short-term investments with principal maturities of less than three months, excluding the effect of a non-business day, at the end of the fiscal year of ¥1,012.2 billion, an increase of ¥87.0 billion compared to the balance of ¥925.2 billion as of March 31, 2017. Cash equivalents represent a temporary cash surplus used to repay debts and make capital investments, among other things, and are used as working capital. Accordingly, the balance of cash equivalents fluctuates each fiscal year depending on particular financing and working capital requirements. Cash and cash equivalents at the end of the year for the fiscal year ended March 31, 2018, were ¥780.3 billion.

Risk Factors

For more information on the risk factors, please refer to NTT’s corporate website: http://www.ntt.co.jp/en/high_english/factors.html

Operating and Financial Review
Overview

Strategy

Operation

NIPPON TELEGRAPH AND TELEPHONE CORPORATION ANNual REPORT 2018

NTT ADVANCED TECHNOLOGY

NTT COMWARE CORPORATION

100.00

Development, production, operation, and maintenance of information communication systems and software

NTT FACILITIES, INC.

100.00

Design, management, and maintenance of buildings, equipment, and electric power facilities

NTT FINANCE CORPORATION

100.00

Lease and installment sales of telecommunications-related devices, and billing and collection services

NTT Urban Development Corporation

67.30

Real estate acquisition, development, construction, leasing, and management

LONG DISTANCE AND INTERNATIONAL COMMUNICATIONS BUSINESS SEGMENT

NTT COMMUNICATIONS CORPORATION

100.00

Provision of long-distance and international communications services

NTT Security Corporation

100.00

Provision of professional security services

NTT America

100.00

Provision of ICT services in North America

Netmagic Solutions Inc.

100.00

Provision of data center-related services in India

Netmagic Holdings

100.00

Management of Netmagic Data Centers pvt. ltd’s subsidiary companies in Europe

MOBILE COMMUNICATIONS BUSINESS SEGMENT

NTT DOCOMO, INC.

100.00

Provision of mobile communications services and smart life area services

DATA COMMUNICATIONS BUSINESS SEGMENT

NTT DATA CORPORATION

54.21

Provision of data communications systems services and network system services

NTT DATA

100.00

Consulting, system design, and development in North America

OTHER BUSINESSES

NTT Urban Development Corporation

67.30

Real estate acquisition, development, construction, leasing, and management

NTT FINANCE CORPORATION

100.00

Lease and installment sales of telecommunications-related devices, and billing and collection of charges for communications and other services

NTT FACILITIES, INC.

100.00

Design, management, and maintenance of buildings, equipment, and electric power facilities

NTT COMMWERE CORPORATION

100.00

Development, production, operation, and maintenance of information communication systems and software

NTT ADVANCED TECHNOLOGY CORPORATION

100.00

Technology transfer, technical consulting, and design and development of systems

MOBILE COMMUNICATIONS BUSINESS SEGMENT

NTT DOCOMO, INC.

949,679

66.65

Provision of mobile communications services and smart life area services

EXPLANATIONS OF SPECIALIZED TERMS AS USED IN THIS ANNUAL REPORT

Glossary of Terms

AI

Application

AI

Application

Software developed and used for specific functions and purposes

Architecture

Basic design, shared specifications, or design ideology of a computer, piece of software, system, or its basic components

B2B2X

A business that supports and promotes the customer-businesses of other companies. “B” represents the company and “X” represents customers, such as individuals, corporations, employees, and government agencies.

Bit Rate

Amount of data handled in a given time when performing continuous processing or transmission of data

Cloud / Cloud Services

Type of service whereby software and hardware can be used through a network. The service can be used on an on-demand basis without the need to purchase hardware, such as a server, or software.

Cognitive Framework

Frameworks for solving problems through a methodology using experience and insight similar to that of human beings to be applicable to systems capable of producing viable information from big data

Connected Cars

Vehicles that have ICT device functionality and are anticipated to create new value by acquiring data on vehicle conditions and surrounding roads through sensors and by aggregating and analyzing this data through networks

Cyberattack

Attack that causes the functionality of the target system to fail as well as unauthorized access of a target computer or network resulting in theft, destruction, or alteration of data

Dark Web

Websites that cannot be accessed by standard Internet browsers

Data Center

Facility entrusted with servers and other systems by customers that provides operation and management services, including Internet connectivity

Deep Learning

Method of machine learning in which systems learn data characteristics at a very deep level, making it possible to recognize characteristics in incredibly high degrees of accuracy. It is thus anticipated that the method will be applicable to recognition of people’s voices and images and video taken by cameras.

Digital Transformation

Process of creating new business models or transforming existing business models by using ICT tools to accumulate data or use data in management
Overview

Strategy

Operation

Terms Related to NTT Group Services

- POINT
  A point service provided by NTT DOCOMO with no sign-up or annual fees that anybody can become a member of under a personal name.
  https://www.nttdocomo.co.jp/english/service/point/index.html

- FLET’S Hikari

- Nixnet Collaboration Model
  A value-added IP- and optical fiber-based telephony service using FLET’S Hikari.

- Nixnet Denka
  A network service using FLET’S Hikari Next and other NTT East and NTT West services.

- SDGs (Sustainable Development Goals)
  A set of 17 goals needing to be addressed leading up to 2030 that were sometimes referred to as “digital labor.”

- Backbone Network Services
  Technologies that are needed to create and maintain Internet’s backbone.

- Protocol
  A set of rules that make communication between devices possible.

Stock Information (As of March 31, 2018)

Corporate Information

Company name NIPPON TELEGRAPH AND TELEPHONE CORPORATION

Date of establishment April 1, 1985

Head office Otemachi First Square, East Tower, 5-1, Otemachi 1-Chome, Chiyoda-ku, Tokyo 100-816, Japan

Telephone +81 (3) 6838-5111

Common stock ¥357,950,000,000

Total number of shares authorized to be issued by NTT 6,192,900,900 shares

Total number of shares issued 2,086,394,470 shares

Aggregate voting rights 19,684,752

Number of shareholders (including holders of fractional shares) 842,518

Stock Exchange on Which the Company is Listed

Tokyo (Stock Code: 9430)

Notes:

1. NTT’s stock price and TOPIX Index are the simple average closing prices on the last trading day of each month.

2. NTT’s trading volume refers to the number of NTT shares traded every month.

3. Equity ownership percentages do not include treasury stock.

Breakdown of Shares by Shareholder

- Breakdown of shareholders attributable to the issuance of new shares is not included in the above.
- The percentages represent the ratio of shareholders’ shares to the total number of issued shares excluding treasury shares.
- Other Corporations” above includes 29 thousand shares in the name of third parties.

Restrictions under the NTT Act

The NTT Act requires the government to own at least one-third of the total number of issued shares, which cannot be held by foreign nationals and foreign corporations. If the proportion of voting rights of foreign nationals and foreign corporations is limited to less than one-third of the total voting rights, the proportion of voting rights of foreign nationals and foreign corporations is limited to less than one-third of the total voting rights.

If the proportion of voting rights of foreign nationals and foreign corporations exceeds the limit, the voting rights are owned by foreign nationals and foreign corporations.

1 For the time being, pursuant to Article 13 of the NTT Act, any increase in the number of shares attributable to the issuance of new shares is not included in calculating the total number of issued shares for the purposes of the NTT Act.