“Your Value Partner 2025”

NTT Group Medium-Term Management Strategy

November 6, 2018
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- Accelerate our own digital transformation
- Leverage talent, technologies, and assets
- Promote ESG management, and enhance the returns of shareholders to improve corporate value

➤ Medium-Term Targets
Future Changes in Society and Economy
~Outlook for around 2030~

Era in which major transformation required for every society and economy

1. Population/Working-age population
   - World population continues to rise
   - Japan’s population gradually declines
   - Aging proceeds, working-age population plummeting

2. Global/Local
   - Multipolarization, multilayering globally

3. Environment/Resources
   - Expansion of renewable energy
   - Food supply, environmental issues worsen

4. Disaster/Terrorism, Infrastructure
   - Increasing scale of natural disasters and improved resilience
   - Rapid increase in cyber attacks
   - Aging of infrastructure

5. Society/Economy
   - Expansion of digital market
   - Giant platform/centralization
   - Activation of individuals/flattening activity

6. Technology
   - Development of AI/Robotics market
   - Spread/pervasion of 5G

7. Consumption trends
   - Progression of personalization, absorption of IoE
   - Increase in cashless payments
   - Expansion of sharing economy

8. Urbanization
   - Progression of urbanization and distinctive compact city
   - Development of Smart mobility

Population/Working-age population

- World population continues to rise
- Japan’s population gradually declines
- Aging proceeds, working-age population plummeting
# Social Issues and Directions for Solutions

## Resolution of social issues through digital transformation

<table>
<thead>
<tr>
<th>Social Issues</th>
<th>Society 5.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental issues, resource/water shortage due to population increase and urbanization</td>
<td>Sustainable society achieving both environment and economy</td>
</tr>
<tr>
<td>Increase in disasters/terrorism</td>
<td>Resilient, Safe, and secure society in both cyber and physical world</td>
</tr>
<tr>
<td>Aging infrastructure</td>
<td>Society in which individuals, including the elderly and women, can thrive</td>
</tr>
<tr>
<td>Aging population</td>
<td></td>
</tr>
<tr>
<td>Workstyle reform</td>
<td></td>
</tr>
<tr>
<td>Population decline</td>
<td>Smart society undaunted by population decline</td>
</tr>
<tr>
<td>Decrease in industrial competitive power</td>
<td>Society in which urban and rural areas are connected and all can live comfortably</td>
</tr>
<tr>
<td>Regional revitalization</td>
<td></td>
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</tbody>
</table>

## Digital Transformation

By accumulating and utilizing data through ICT, create new framework and transform existing framework.
NTT Group’s Business Operation = CSR

We will always be a group who resolves social issues through business operation

- Ensure Reliable Communications
- Enrich Social Communications
- Unite the Energies of Team NTT
- Protect the Global Environment
- Create a Sustainable Society by Delivering the Highest Quality ICT Solutions

- Reinforce facilities prepared for disasters
- Reinforce cyber security
- Diversity and inclusion
  Contribute to sports activities
  (e.g. Olympic and Paralympic Games Tokyo 2020)
- New value creation by innovations
  Contribute to smart initiatives in various industries and societies.
- Reduce energy consumption of communication facilities
  Convert corporate vehicles to EV

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Our Vision

To resolve social issues through our business operation, NTT Group works together with our partners, as “Your Value Partner.”

As a Public Utility and a Private Company

Social Issue Resolution through business operation

Digital Transformation × CSR

NTT Group

Partners

Contribute to Realization of Smart World/Society 5.0

Towards a sustainable society/SDGs
Our Capabilities for Resolving Social Issues

Innovation

2017
- **TOP 100 GLOBAL INNOVATORS**
- As one of the most innovative companies in IP and patent area, NTT received the award for 7th consecutive year

Ensure and operate reliable ICT infrastructure

- Network Operation Center Monitoring 24/7/365
- **CSDE** (Council to Secure the Digital Economy)
- Established a council to promote secure digital economy together with multi-national companies

Environmental protection activities

- NTT is the first telecommunications operator to become a member of global initiatives to make smarter use of energy, “EP100” and “EV100” (Oct, 2018)

ESG Evaluations

Selected as constituents of global leading ESG indices

- **Dow Jones Sustainability Indices**
  - In Collaboration with RobecoSAM
  - **“World Index”** As of Sep, 2018
- **FTSE4Good** As of Aug, 2018
- **FTSE Blossom Japan** As of Sep, 2018
- **MSCI** 2018 Constituent (As of Jun, 2018)

Adopted as constituents of ESG indices selected by GPIF

- **Japan**
Accelerating our self-transformation to become “Your Value Partner”

Industry Leading

Best in Class

Intelligence

People

Diversity and Inclusion

Services Expertise

Technical Expertise

Global/Local

Cutting Edge

Shared Values

Connect

Trust

Integrity
Support our customers’ digital transformations

1. Promote B2B2X model
2. Roll out 5th-Generation Wireless System
3. Provide personal services

Accelerate our own digital transformation

4. Enhance competitiveness in global business
5. Drive self-digital transformation in domestic business
6. Migrate PSTN to IP Networks

Leverage talent, technologies, and assets

7. Enhance and globalize R&D
8. Create new lines of business (Real estate, etc.)
9. Contribute to vitalization of regional societies and economies
10. Disaster Countermeasures

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

Contribute to realization of a digitalized society = Smart World
A Digitalized Society = Smart World

Smart Mobility
- Eliminate rush/traffic jams
- Energy saving

Smart Factory
- Minimize downtime
- Increase productivity

Smart Sports
- More excitement
- Create new experiences

Smart City
- Safe, comfortable living environment
- Efficient city operation

Smart Healthcare
- Maintain/improve health
- Improve quality of health care

Smart Agri
- Pass on technology/know-how
- Improve productivity/quality
Support our customers’ digital transformations
1. Promote B2B2X Model

Evolve into B2B2X model using digital services and data management

Examples of value creation through B2B2X model

- Evolution of value chain of agriculture, forestry and fisheries, manufacturing/construction, retail/services
  - Ex.1) Digitalization of agricultural growth, cultivation process management
  - Ex.2) Digitalization of manufacturing process, machinery management

- Evolution of customer service in retail/services, finance
  - Ex.3) Transform bank customer contact points into digitally integrated, omnichannel
  - Ex.4) Distribution outlet reform using digital payment, purchase data

- Service upgrade, business creation through combining mobile data and corporate-owned data
  - Ex.5) Credit support for financial services
  - Ex.6) Improve customer attraction by multiplying sports team data
  - Ex.7) On-demand ride sharing

- Revitalization of regional economies, improvement of urban functions such as public safety
  - Ex.8) Expand business opportunities for regional companies through tourist activity analysis
  - Ex.9) Through digitalization of snow removal work, smooth transportation/transport and efficient use of budget
  - Ex.10) Using sensor data, accelerate detection of accidents, reduce damage

No. of B2B2X projects (no. of examples above) **100** (FY2021)
1. Promote B2B2X Model

**Evolution of customer service in retail/services, finance, etc.**

- Digital integration of customer contact points such as physical stores, call centers, web
- Optimum personalized customer service using AI

**Service upgrade, business creation through combining mobile data and corporate-owned data**

- FinTech using mobile DMP
- Proposals to best suit customers and service improvement

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※1: DMP (Data Management Platform)
2. Roll out 5th-Generation Wireless System

Leveraging the characteristics of 5G, create new value in collaboration with variety of partners

Activities with partners

- 5G Trial Site (from May 2017)
- DOCOMO 5G Open Partner Program (from Feb. 2018)

Approx. 1,800 of companies/organizations is participating

"Pre-commercial service" from Sep. 2019
"Commercial service" from Spring 2020

“High presence” and “Interactive” 5G services and solutions

- Delivery of new sport-viewing styles
- Circumvent labor shortage by remote operation of construction equipment
- Eliminate inequality in access to healthcare through remote medicine
- Disaster prevention and mitigation using AI analytics of city video/image feeds

Cumulative investment for 5G infrastructure build-out, etc.

¥1 trillion (FY2019~FY2023)
3. Provide Personal Services

Realize “Personal Solutions” led by docomo
Support individuals’ lifestyle changes

Rate
- Great value and simple rate plans
  - Approx. 20-40% rate reduction (FY2019/1Q)

Services
- Expand collaborative partners
- Promote electronic payment, use of points
- Upgrading of personal contents
  - Locations where payment/point service can be used
  - 2 million (FY2021)

Communication
- Optimum proposals suiting individual customers by leveraging AI, big data
- Simple procedures, smooth resolution of business
  - No. of members
  - 78 million (FY2021)

※1: The actual level of reduction may be different from the description herein depending on customer’s usage behavior.
Accelerate our own digital transformation
4. Enhance Competitiveness in Global Business

"One NTT" Global Growth Strategy

Deliver High Value Solutions

Business Modernization

Industry Advisory Expertise Drives Outcome-Based Solutions
- Financial Services
- Automotive/Manufacturing
- Healthcare
- Communications/Media
- Public Sector

Accelerate IT-as-a-Service with Software-Defined Technologies
- Managed Infrastructure
- Cybersecurity Services
- Cognitive Foundation
- Global Edge Services

Data Center Asset Firm ※1
Improve Efficiency of Data Center Business

NTT Global Procurement Company
Global Procurement Excellence

Create New Innovative Solutions

Disruptive Innovation

Global Innovation Fund
Invest in the Next Innovative Technology Frontier
- Venture Ecosystem
- Digital Startups

Disruptive Innovation Approach
Co-Create with Clients using Advanced Technologies
- Industry Specialized
- Business Function
- Smart World
- Technology-Led
  e.g. AI, Robotics, Edge Computing

Research Center (Outside of Japan)
Invent World-Leading Innovative Technologies

Invent World-Leading Innovative Technologies
- Digital Startups
- Cognitive Foundation
- Cybersecurity Services
- Global Edge Services
- Managed Infrastructure
- Communications/Media
- Public Sector
- Financial Services
- Healthcare

One NTT

Global Branding

Global Talent Development

※1: NTT Communications plans to create this company, then it will be transferred to NTT (under discussion)
4. Enhance Competitiveness in Global Business

Aug. 2018

NTT

- NTT Communications
- Dimension Data
- NTT Security
- NTT DATA
- NTTi3

Nov. 2018

NTT

- Global Holding Company (Company name: NTT, Inc.)
- NTT Communications
- Dimension Data
- NTT Security
- NTT DATA
- Global Innovation Fund (NTT Venture Capital)
- Global Procurement Company (NTT Global Sourcing)
- NTTi3

July. 2019 (Plan)

NTT

- Global Holding Company (Company name: NTT, Inc.)
- Global OpCo
- Japan OpCo
- NTT DATA
- Global Innovation Fund (NTT Venture Capital)
- Global Procurement Company (NTT Global Sourcing)
- Disruptive Innovation Approach
- Research Center (Outside of Japan) (NTT Research, Inc.)
- Data Center Asset Firm

※1: NTT Communications, Dimension Data, NTT Security are integrating into Global OpCo and Japan OpCo
※2: NTT DATA will continue to collaborate with other companies in the Group while retaining its present management structure, status as a listed company, and brand
※3: NTT Communications plans to create this company, then it will be transferred to NTT (under discussion)
5. Drive Self-Digital Transformation in Domestic Business

Appointed CDO※1, and promote digitalization measures

Digitalize own operating processes (Realize Connected Value Chain by leveraging AI)

- Achieve efficiency through smart operations not requiring labor
  - Apply NTT Group’s RPA(WinActor) to operating processes =>Further expand scope of work
  - Optimize enterprise service processes from service order/delivery with IT※3
  - Optimize construction/maintenance-related processes with IT (in collaboration with partner companies)※4

- Diversification/optimization of Web service order procedures to enhance customer convenience
  - Reduce wait/attendance time at docomo Shops

New services made possible by self-digital transformation

- Cognitive Foundation®※7 which contributes to resolution of management issues by leveraging IT
  (Centralization/optimized construction, management, operation of ICT resources such as sensors, networks, cloud)
- Personal solutions through digital marketing

※1: Chief Digital Officer  ※2: Companies introducing WinActor have surpassed 2,000 (as of Oct. 2018, including NTT Group), RPA = Robotic Process Automation
※3: NTT-East, NTT-West, NTT communications  ※4: NTT-East, NTT-West, NTT communications, docomo
※5: Compared to FY2017  ※6: Reduced by half during FY 2019 compared to 2018 survey  ※7: Applies beginning with global service

12 thousand robots
500 operating processes (at this time)

Productivity 2 times (FY2025)
Productivity 1.5 times (FY2025)
Cut by half (FY2019)
6. Migrate PSTN to IP Networks

Simplify services and networks with IP networks

- Nation-wide call rates to fixed-line telephones will be 8.5 yen per every 3 minutes (from January 2024)
- Migrate tandem/signal transfer switches to IP, and connect to other carriers through IP (scheduled completion by January 2025)
- Continue use of copper lines and copper line terminals (local switches)

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<tr>
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<tbody>
<tr>
<td>Specification examination, standardization</td>
<td><strong>Start IP Interconnection</strong></td>
<td><strong>Start migration of NTT’s fixed-line telephone services</strong></td>
<td>Complete migration</td>
</tr>
<tr>
<td>Development test</td>
<td>Point of Interconnection preparation</td>
<td>IP Interconnection with other carriers</td>
<td>Switch outgoing calls from NTT’s fixed-line telephone services over to IP networks</td>
</tr>
<tr>
<td></td>
<td>Connect local switches to IP networks</td>
<td>Switch incoming calls from other carriers over to IP networks</td>
<td></td>
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</tbody>
</table>

- Take over all of the contracts
  - Nation-wide call rates to fixed-line telephones will be 8.5 yen (excluding tax) per every 3 minutes

- Simplify services and networks with IP networks
  - Start migration of NTT’s fixed-line telephone services
Leverage talent, technologies, and assets
7. Enhance and Globalize R&D

- Promote disruptive R&D to transform the world
- Reinforce basic research at overseas bases

Further transmission/development abroad

1. Global development of achievements
   - Strengthen delivery and localization structure

2. Globalization of research targets
   - Strengthen R&D in response to global needs

3. Establishment of research base overseas (NTT Research, Inc.)
   - Accumulation of needs and strengthening of cutting edge basic research

Create the best/first in the world, and generate surprise
7. Enhance and Globalize R&D

- Strengthen joint R&D, proactive use of external technologies
- Expand R&D investment into new growth areas

- Proactively use external technologies
- Strengthen joint R&D
- Expand R&D investment into new growth areas

Diagram showing existing business areas, new growth areas, and partners with arrows indicating proactive use of external technologies.
Activate investment in high-growth areas

◆ R&D in new areas

¥2 trillion over the next 5 years

+10%

(Excludes investment for 5G infrastructure build-out, etc., data centers, and real estate)

◆ Cumulative investment for 5G infrastructure build-out, etc.

¥1 trillion over the next 5 years
8. Utilization of Real Estate (Promote Urban Solutions)

Maximize utilization of Group real estate, ICT/energy/environmental technologies, etc., and promote new style of urban solutions beyond conventional real estate development.
9. Contribute to Revitalization of Regional Societies/Economies

Leverage technologies/assets (equipment), upgrade government/life services, support revitalization of local industry

Collaboration with local governments, various partners

Community-based (sales/support)

Group management resources

Latest technologies (AI, RPA, IoT, ...)
10. Disaster Countermeasures

Past initiatives

1. Improve Communications Network Reliability
   - Transmission trunk line multi-routing
   - Install large-zone base stations
   - Build disaster-resistant facilities

2. Secure Critical Communications
   - Secure 100,119 and other emergency services
   - Provide tools to check safety status (171)

3. Prompt Restoration
   - Disaster countermeasure equipment (Power supply vehicles, Portable satellite equipment, etc.)
   - Procure and convey materials and equipment for restoration purposes
   - Use drones

Further efforts

Further reinforce communications infrastructure
- Consolidate and reinforce telecommunications facilities, etc.
  - Blackout countermeasures for base stations
  - Disaster resistance (damage prediction, hazard map utilization)

Proactive disaster response
- Improve initial response by AI-based damage prediction
- Provide real-time and clear information to support customers’ evacuation life
  - Information about damage and recovery of services
  - Information about set up of battery charging station, public telephones for disaster, etc.
  - Information for foreign visitors and residents

Adequately provide information to the people affected

Lessons from the Great Hanshin-Awaji Earthquake and the Great East Japan Earthquake

Disaster which causes wider, bigger, or lasting damage
Promote ESG management, and enhance the returns of shareholders to improve corporate value
Promote ESG Management

**Environment**
- Reduce environmental impact
- Leverage ICT to contribute to the environment

**Social**
- Promote diversity
- Protect personal information
- Support customers in reinforcing information security

**Governance**
- Enhance structure on the basis of the intent of Japan’s Corporate Governance Code
- Strengthen global corporate governance

- Capture business opportunities
- Minimize business risks

Ongoing improvements of corporate value
Shareholders Returns

◆ Dividend Policy

• Basic policy is steady dividend increases

◆ Share Buybacks

• Carry out buybacks flexibly to improve capital efficiency
Medium-Term Targets
### Medium-Term Targets

#### EPS Growth

- **EPS Growth**: +50%
- **EPS Growth FY2023**: +50%

#### Financial Targets

<table>
<thead>
<tr>
<th>Financial Target</th>
<th>Target FY2023</th>
<th>FY2021</th>
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</thead>
<tbody>
<tr>
<td>EPS Growth</td>
<td>+50%</td>
<td></td>
</tr>
<tr>
<td>Overseas Sales</td>
<td>$25B/</td>
<td></td>
</tr>
<tr>
<td>Overseas Operating Income Margin</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Cost Reductions</td>
<td>¥800B</td>
<td></td>
</tr>
<tr>
<td>ROIC</td>
<td>8%</td>
<td>FY2023</td>
</tr>
<tr>
<td>Capex to Sales</td>
<td>13.5% or less</td>
<td>FY2021</td>
</tr>
</tbody>
</table>

**Notes:**

- ※1: Excludes the effects of the arbitration award received from Tata Sons Limited.
- ※2: Including results from the global holding company, its subsidiaries and its affiliates. Operating Income excludes temporary expenses, such as M&A-related depreciation costs of intangible fixed assets.
- ※3: Excludes NTT communications’ data centers and certain other assets.
Your Value Partner
This document is a translation of the Japanese original. The Japanese original is authoritative.

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* “FY” in this material indicates the fiscal year ending March 31 of the succeeding year.
** “1Q” in this material represents the three-month period beginning on April 1 and ending on June 30, “2Q” represents the six-month period beginning on April 1 and ending on September 30, “3Q” represents the nine-month period beginning on April 1 and ending on December 31, and “4Q” represents the twelve-month period beginning on April 1 and ending on March 31.