

“Your Value Partner 2025”

NTT Group Medium-Term Management Strategy

November 6, 2018

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- 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**

8. Urbanization

Progression of **urbanization** and
distinctive **compact city**
Development of **smart mobility**

2. Global/Local

Multipolarization,
multilayering globally

3. Environment/Resources

Expansion of **renewable energy**
Food supply, environmental
issues worsen



7. Consumption trends

Progression of **personalization,**
absorption of **IoE**
Increase in **cashless** payments
Expansion of **sharing economy**

6. Technology

Development of **AI/Robotics** market
Spread/pervasion of **5G**

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

Social Issues and Directions for Solutions

Resolution of social issues through digital transformation

Social Issues

Environmental issues,
resource/water shortage due to
population increase and urbanization

Increase in disasters/terrorism
Aging infrastructure

Aging population
Workstyle reform

Population decline
Decrease in industrial competitive power

Regional revitalization

Society 5.0

Sustainable society achieving both
environment and economy

Resilient, Safe, and secure society in both
cyber and physical world

Society in which individuals, including the
elderly and women, can thrive

Smart society undaunted by population
decline

Society in which urban and rural areas are
connected and all can live comfortably

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

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

Our Vision

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

Contribute to Realization of Smart World /Society 5.0

Towards a sustainable society/SDGs



Partners



As a Public Utility and a Private Company

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



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)

EP 100



EV 100

by THE CLIMATE GROUP

ESG Evaluations

Global

**Selected as constituents of
global leading ESG indices**

MEMBER OF

**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
MSCI ジャパンESG
セレクト・リーダーズ指数

As of Jun, 2018

**Adopted as constituents of
ESG indices selected by GPIF**

Japan

Accelerating our self-transformation to become "Your Value Partner"



Pillars of Medium-Term Management Strategy **NTT**

**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 Model①



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

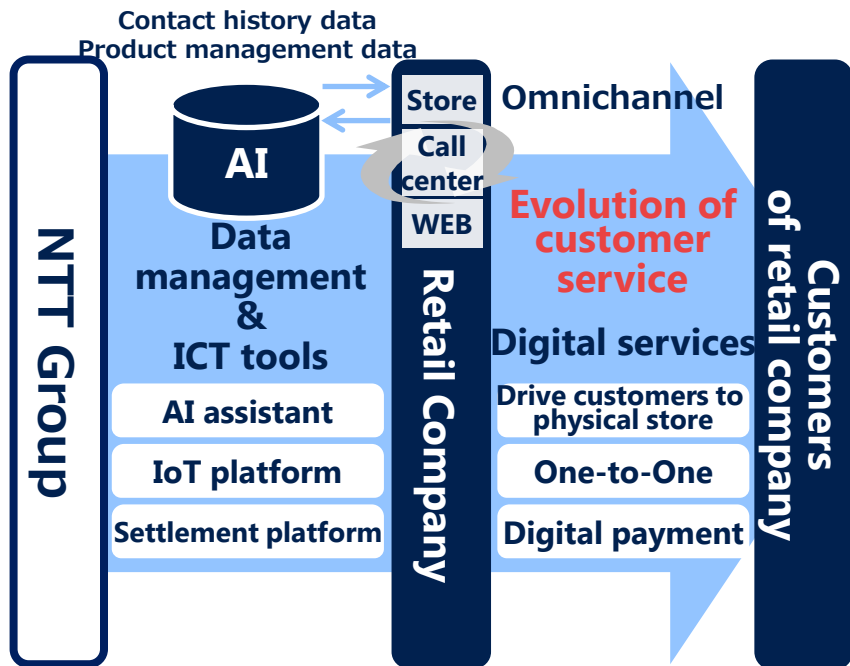
- Ex.8) Expand business opportunities for regional companies through tourist activity analysis 
- Ex.9) Through digitalization of snow removal work, smooth transportation/transport and efficient use of budget 
- Ex.10) Using sensor data, accelerate detection of accidents, reduce damage

No. of B2B2X projects (no. of examples above) 100 (FY2021)

1. Promote B2B2X Model②

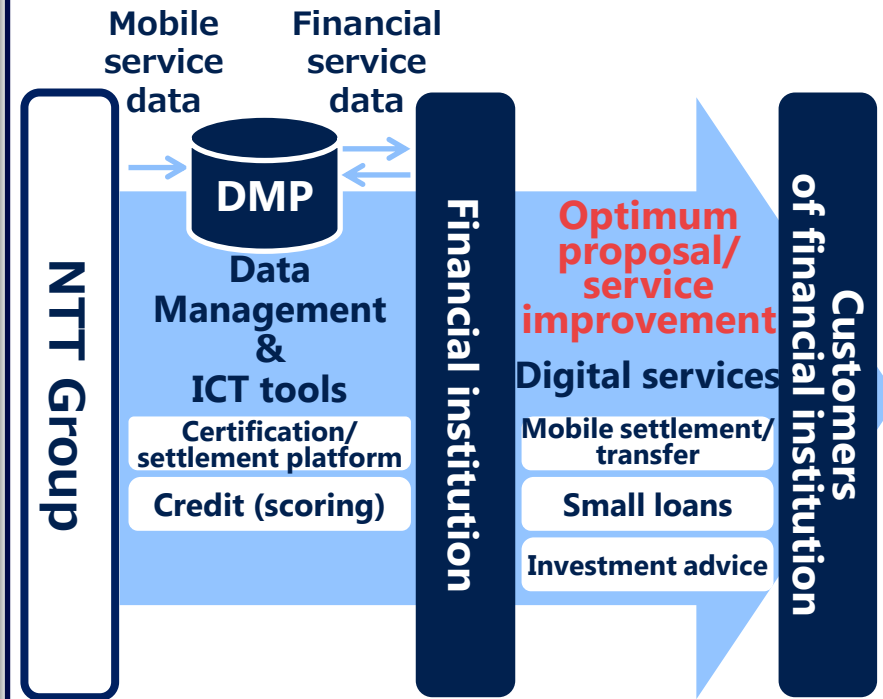
Evolution of customer service in retail/ services, finance, etc.

- 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^{※1}
- Proposals to best suit customers and service improvement



※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)

75 trials

- DOCOMO 5G Open Partner Program (from Feb. 2018)

Approx. **1,800** of companies/organizations is participating

“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

“Pre-commercial service”
from **Sep. 2019**

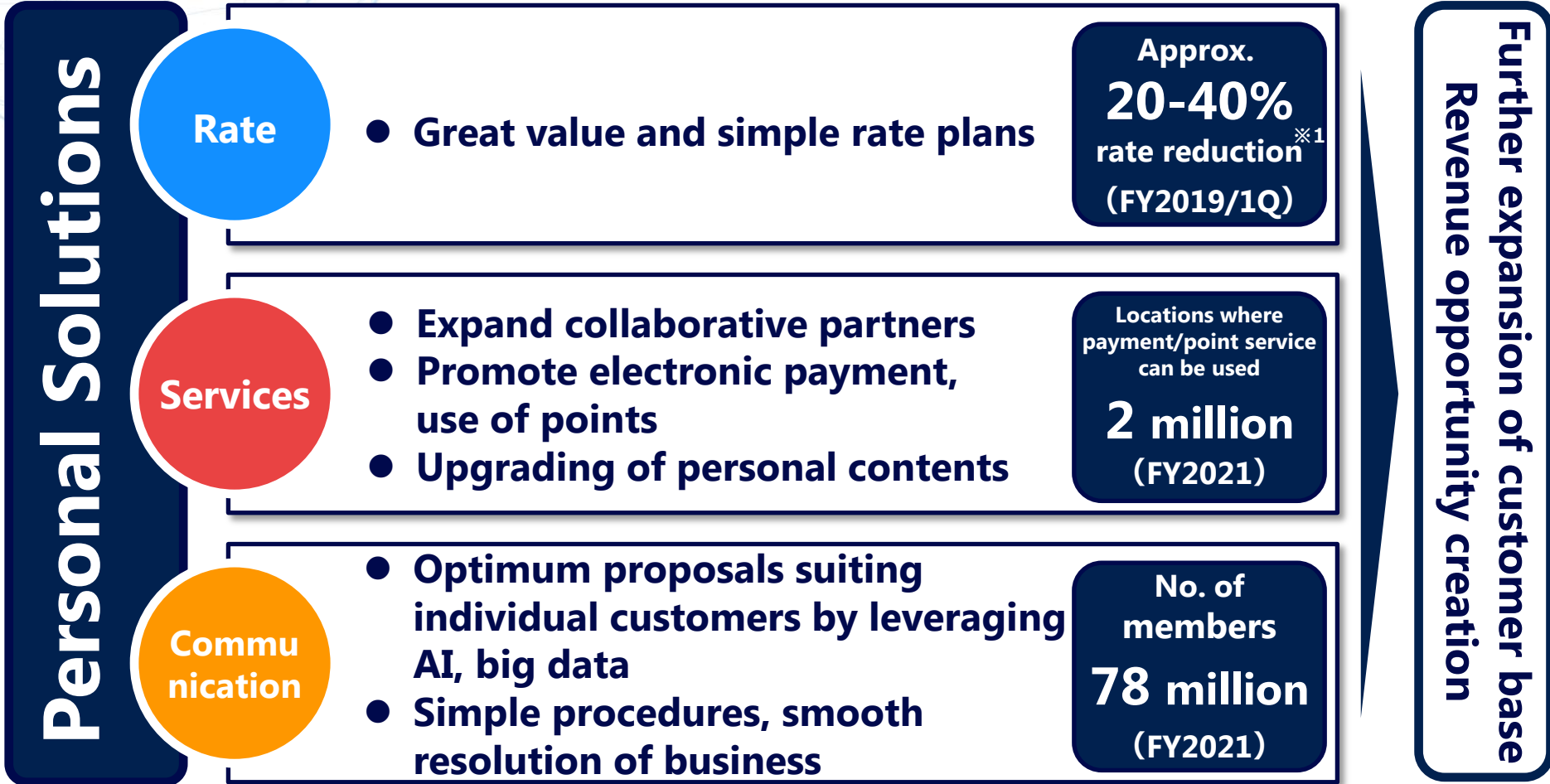
“Commercial service”
from **Spring 2020**

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



※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 Business① NTT

"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

Integrated Capabilities
(Enabling a Smart World)

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

Global Talent Development

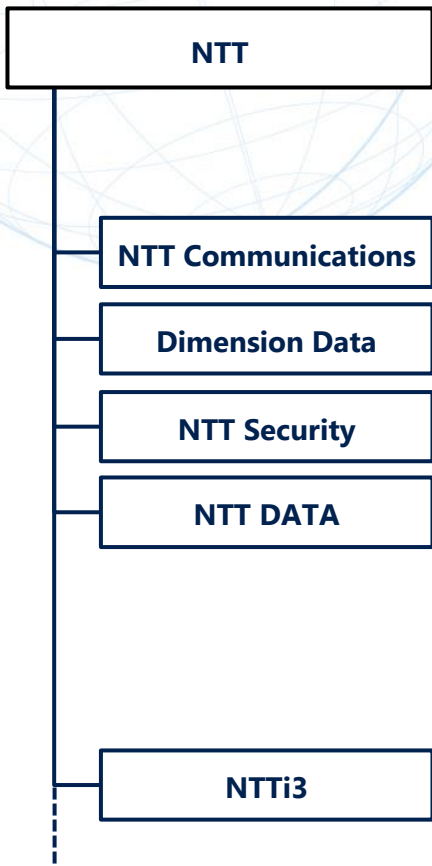
One NTT

Global Branding

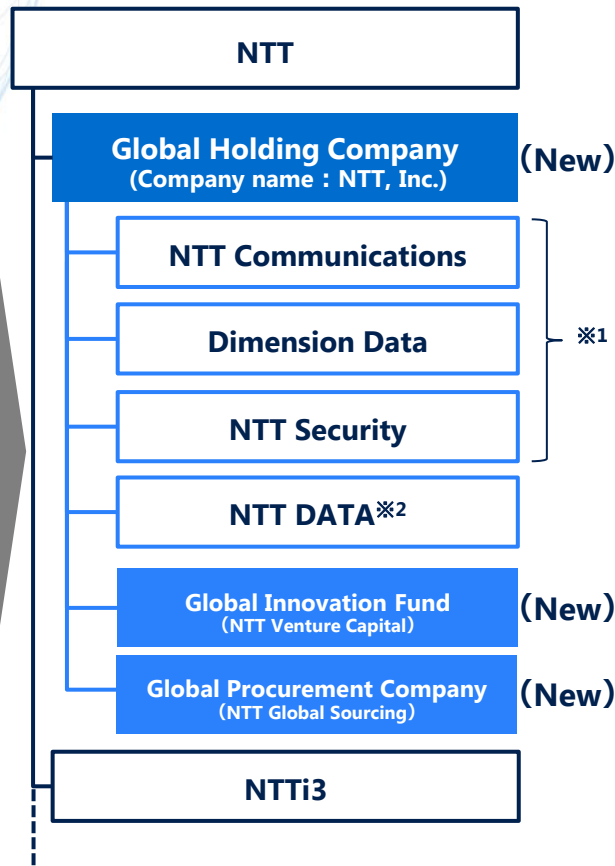
※1 : NTT Communications plans to create this company, then it will be transferred to NTT(under discussion)

4. Enhance Competitiveness in Global Business②

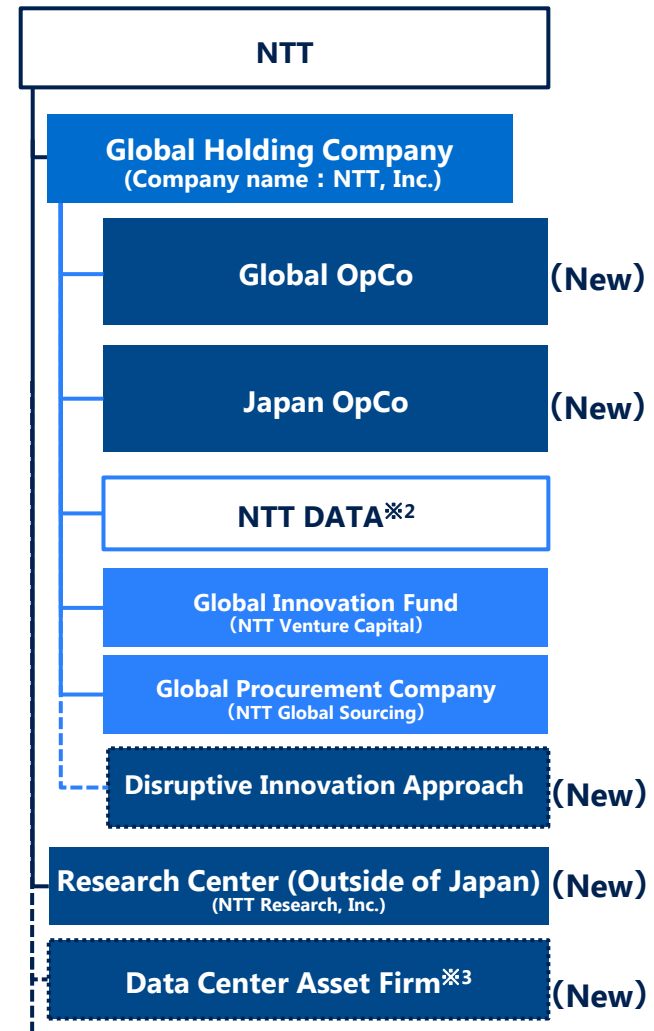
Aug. 2018



Nov. 2018



July. 2019 (Plan)



※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 **NTT**

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)^{※2} 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

12 thousand robots
500 operating processes
(at this time)

Productivity **2 times**^{※5}
(FY2025)

Productivity **1.5 times**^{※5}
(FY2025)

Cut by half^{※6}
(FY2019)

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

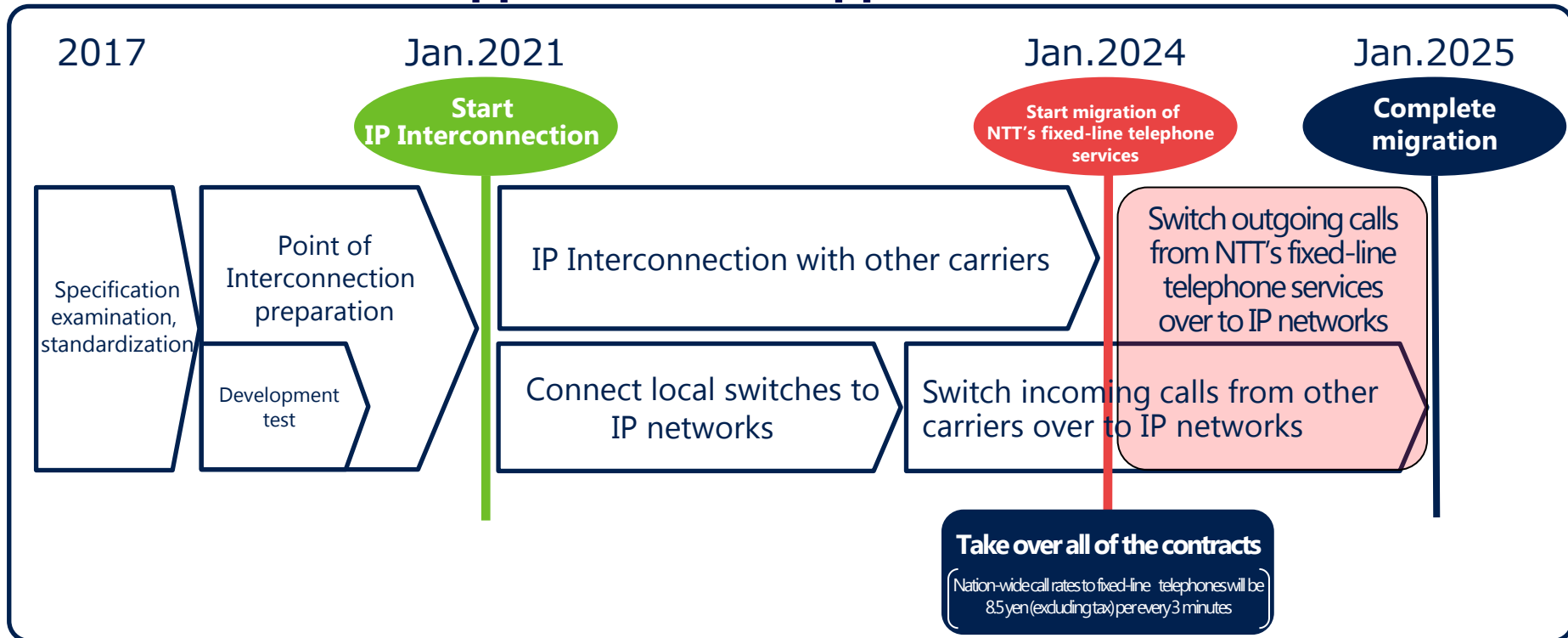
※6 : Reduced by half during FY 2019 compared to 2018 survey

※7 : Applies beginning with global service

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)





Leverage talent, technologies, and assets

7. Enhance and Globalize R&D①

- **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.)

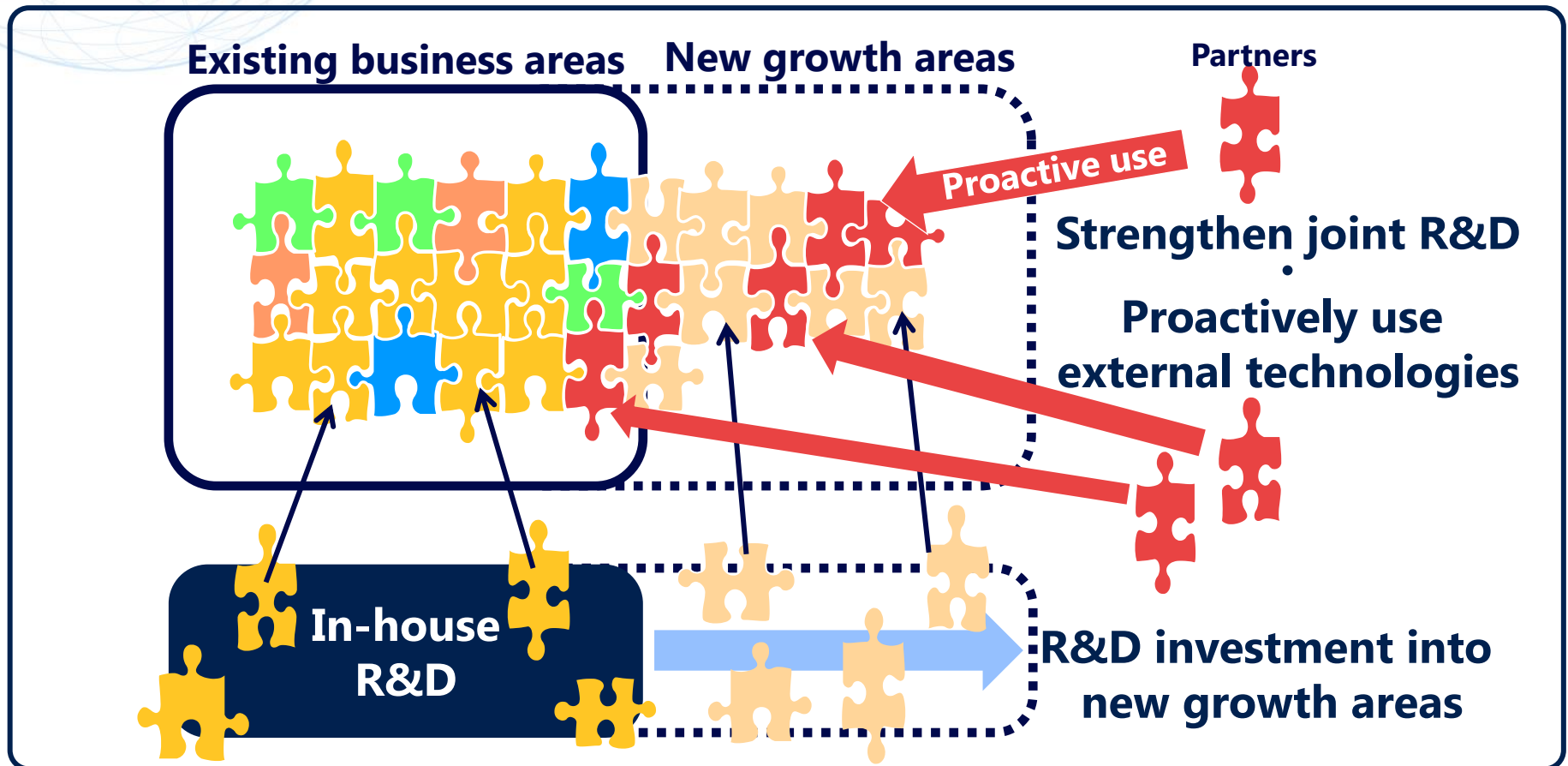
- Accumulation of needs and strengthening of cutting edge basic research



**Create
the best/first
in the world,
and generate
surprise**

7. Enhance and Globalize R&D②

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



7. Enhance and Globalize R&D③

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**

Real Estate



Design/construction /maintenance using ICT (AI, robots, IoT)

Structure Ownership of City Planning (by Regional Community)



Urban Solutions Business Promotion Company

Planning to make it a wholly owned subsidiary



NTT Urban Development



NTTFACILITIES

Collaboration

NTT Group Companies

There's a possibility that the promotion structure will change by future discussion

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, ...)**

**Equipment/bases
(DC/cloud/building)**

10. Disaster Countermeasures

Past initiatives

1.

Improve Communications Network Reliability

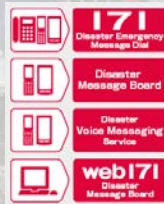
- Transmission trunk line multi-routing
- Install large-zone base stations
- Build disaster-resistant facilities



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

Adequately provide information to the people affected

- 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

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

etc.

Social

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

etc.

Governance

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

etc.

- ◆ Capture business opportunities
- ◆ Minimize business risks



Ongoing improvements of corporate value

◆ Dividend Policy

- **Basic policy is steady dividend increases**

◆ Share Buybacks

- **Carry out buybacks flexibly to improve capital efficiency**

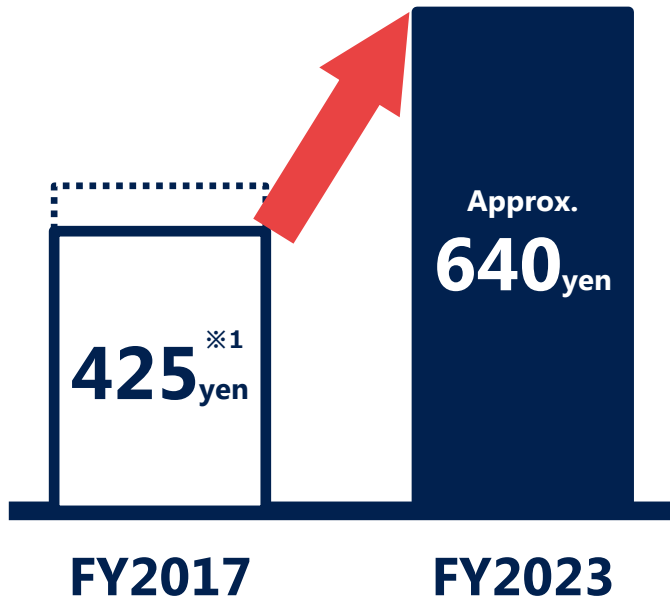


Medium-Term Targets

Medium-Term Targets

EPS Growth

+ 50%



Financial Targets

		Target
EPS Growth	+ 50%	FY2023 ^{※1} (vs. FY2017)
Overseas Sales / Overseas Operating Income Margin ^{※2}	\$25B / 7%	FY2023
Cost Reductions (in fixed-line/mobile access networks)	At least ¥800B	FY2023 (vs. FY2017)
ROIC	8%	FY2023
Capex to Sales (Domestic Network Business ^{※3})	13.5% or less	FY2021

※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.