

# Medium-term Management Plan

# NTN

Make the world **NAMERAKA**

# DRIVE

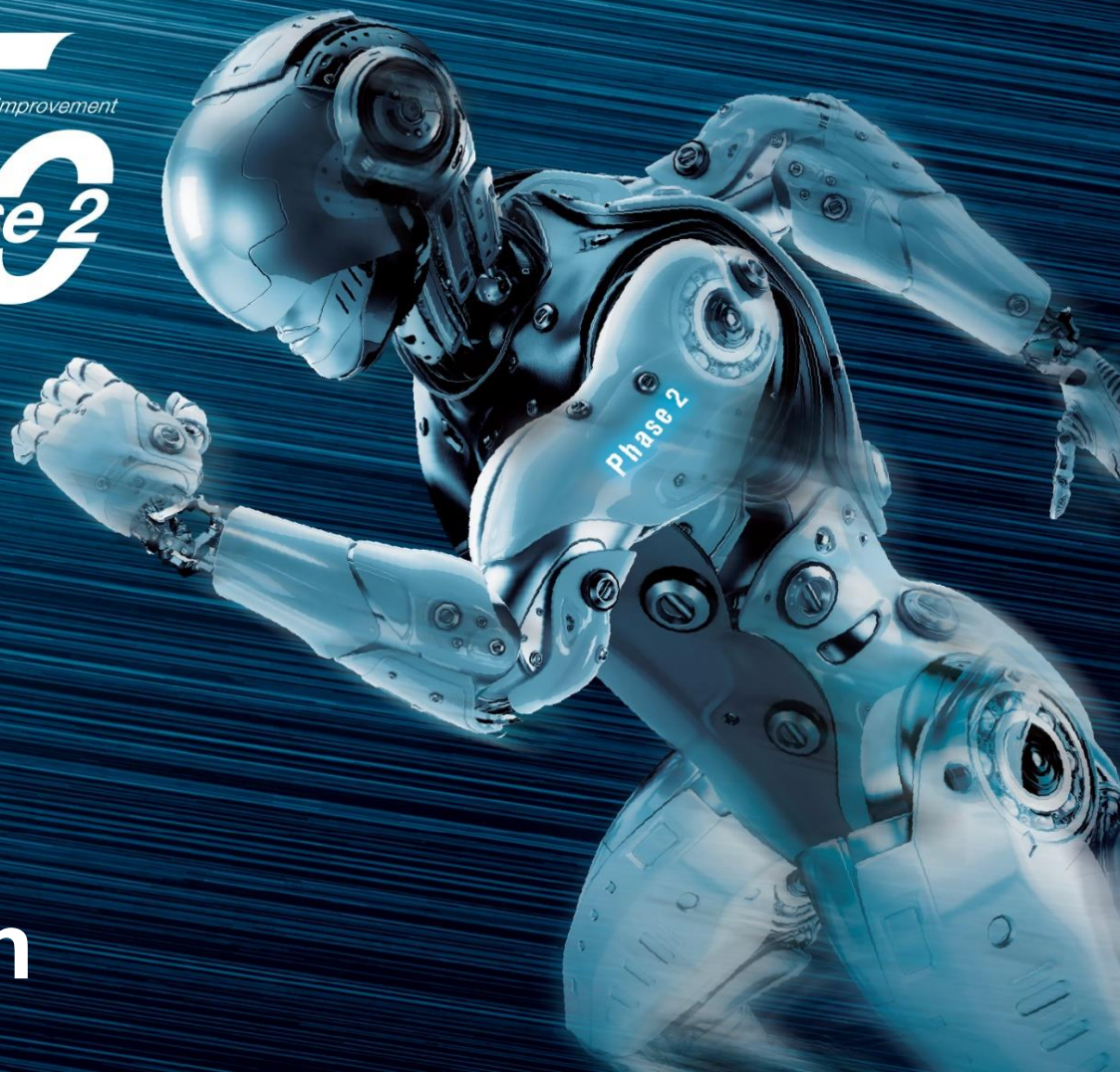
*D*igitalization *R*esources *I*nnovation *V*ariable cost reformation *E*fficiency improvement

# NTN100 *Phase 2*

## Presentation material

February 10, 2021

# NTN Corporation

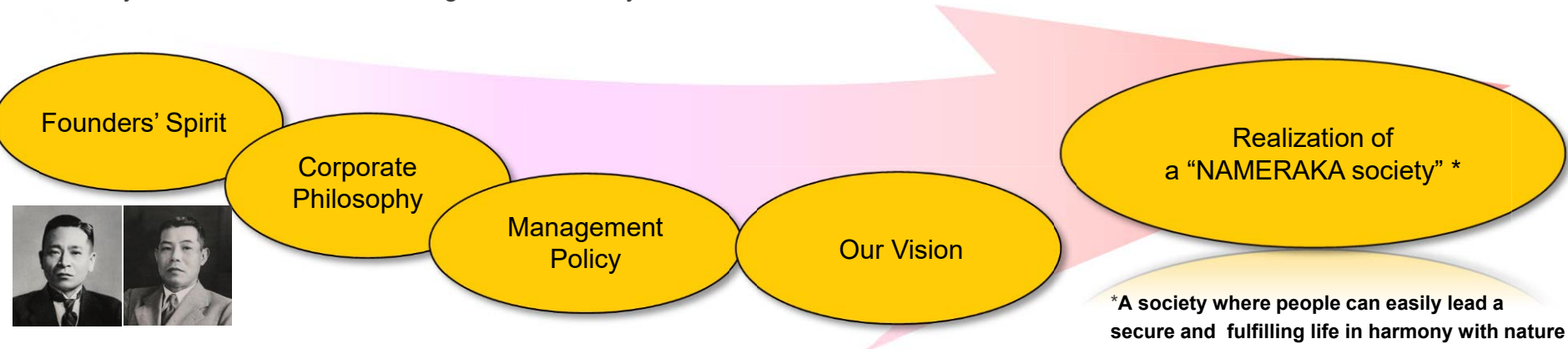


- NTN Group Vision
- “DRIVE NTN100” Phase2  
(New Medium-term Management Plan)

# (1) NTN Group Vision: Realization of a “NAMERAKA Society”

## NTN Group Vision

Through putting our corporate philosophy, “We shall contribute to international society through creating new technologies and developing new products,” into practice, we aim to help solve global social issues and realize a "NAMERAKA Society" where people can easily lead a secure and fulfilling life in harmony with nature.



<b>Founder's Spirit</b>	“Frontier Spirit” + “Coexistence and Co-prosperity Spirit”		<b>Corporate Philosoph</b>	We shall contribute to international society through creating new technologies and developing new products.	
<b>Management Policy</b>	NTN Group aims to realize a “NAMERAKA Society” through practicing its corporate philosophy. As a company that is trusted and needed by communities including stakeholders, we engage in business activities with an emphasis on respect of human rights and compliance. (Stance to Stakeholders)				
	<b>Employees</b>	NTN Group respects diversity, individuality and a safe and healthy workplace environment where employees can work successfully.		<b>Local communities</b>	NTN Group respects cultures and customs in the local communities and builds long-term trust relationships by meeting their expectations through its business activities.
	<b>Customers</b>	NTN Group seeks to maximize customer satisfaction and trust by providing products and services of superior quality, safety and reliability.		<b>Shareholders</b>	NTN Group focuses on return for shareholders by sustainable profitable growth and builds long-term trust relationships with shareholders through active communications.
	<b>Business partners</b>	NTN Group, in a fair and free environment, builds good partnerships with its business partners and works together for mutual growth and development.		<b>Environment</b>	NTN Group harmonizes its business activities with nature and contributes to preserve the global environment by providing its technologies, products and services.
<b>Our vision</b>	1. A company where its corporate philosophy is understood by all employees around the world, and where all employees think and act by themselves.		2. A company that has a global presence with original new products and services appreciated for high quality and functions.		3. A company which everyone involved can be proud of the “NTN” brand”.

# (2) Materiality and NTN in Fiscal Year 2027

## 1. Identify materiality

Identify materiality\* and promote ESG management to achieve global goals (2030 SDGs, etc.)

\*Social and in-house issues that require responses on a priority basis in order for NTN Group to create and improve value with sustainability

### 1) Contribute to society through creation of original technologies (Strengthen positive impacts)

- (1) Reduce energy loss
- (2) Realize a sustainable society using natural energy
- (3) Provide safety and comfort

### 2) Form management systems / corporate organization which are essential for NTN, as a global company (Minimize negative impact)

- (1) Respond to climate change
- (2) Resource recycling and pollution prevention
- (3) Improve the reliability of products and services
- (4) Procurement activities with an emphasis on environment and society
- (5) Respect for human rights
- (6) Promote labour safety and health
- (7) Human resource development
- (8) Promote diversity
- (9) Thorough compliance
- (10) Strengthen governance



## FY2018- "DRIVE NTN100"

Drive forward the transformation of business structure for the new 100 years

~DRIVE NTN Transformation for New 100~

## 2. NTN in fiscal year 2027 (10 years after the start of "DRIVE NTN100")

### 1) Target business structure

Business growth will be driven by providing values with both existing and new products in the business fields created to meet new market needs (e.g. electrification, robotization, IoT, natural energy).

### 2) Target management indices

- (1) Net sales growth: GDP growth rate in each region plus something extra
- (2) Operating margin: 10% or more
- (3) Total asset turnover: 1.0 or more
- (4) Foreign exchange sensitivity: 50% reduction

# (3) Promotion of ESG Management

Provide values to society through practicing the corporate philosophy and aim to realize a "NAMERAKA Society"  
 Identify materiality to achieve targets (SDGs, etc.) and establish KPIs to promote ESG management

## Materiality : 13 items

### Environment

<Strengthen positive impacts>

- 1: Reduce energy loss
- 2: Realize a sustainable society using natural energy



High efficiency  
Ultra-low friction



Energy creation /  
stable operation



Bearing refurbish  
business

<Minimize negative impact >

- 1: Respond to climate change
- 2: Resource recycling and pollution prevention

### Social

<Strengthen positive impacts>

- 1: Provide safety and comfort



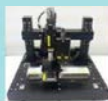
Module products  
related to robots



Electric module  
products



Drug  
Discovery  
and  
Diagnosis



NTN Microscopic  
Coating Applicatc



Develop 3D  
cell chip



Develop  
test kit

<Minimize negative impact>

- 1: Improve the reliability of products and services
- 2: Procurement activities with an emphasis on environment and society
- 3: Respect for human rights
- 4: Promote safety and health
- 5: Human resource development
- 6: Promote diversity

### Governance

<Minimize negative impact>

- 1: Thorough compliance
- 2: Strengthen governance

- ✓ Assess after the transition to a Company with Nominating Committee, etc. and promote continuous improvement activities
- ✓ Strengthen risk management
- ✓ Strengthen internal audit system

### Disclosure of ESG information

Active disclosure of ESG information  
 Continued adoption / expansion in indexes

Selected in  
ESG indexes  
adopted  
by GPIF



FTSE Blossom  
Japan



2020 CONSTITUENT MSCI JAPAN  
 ESG SELECT LEADERS INDEX



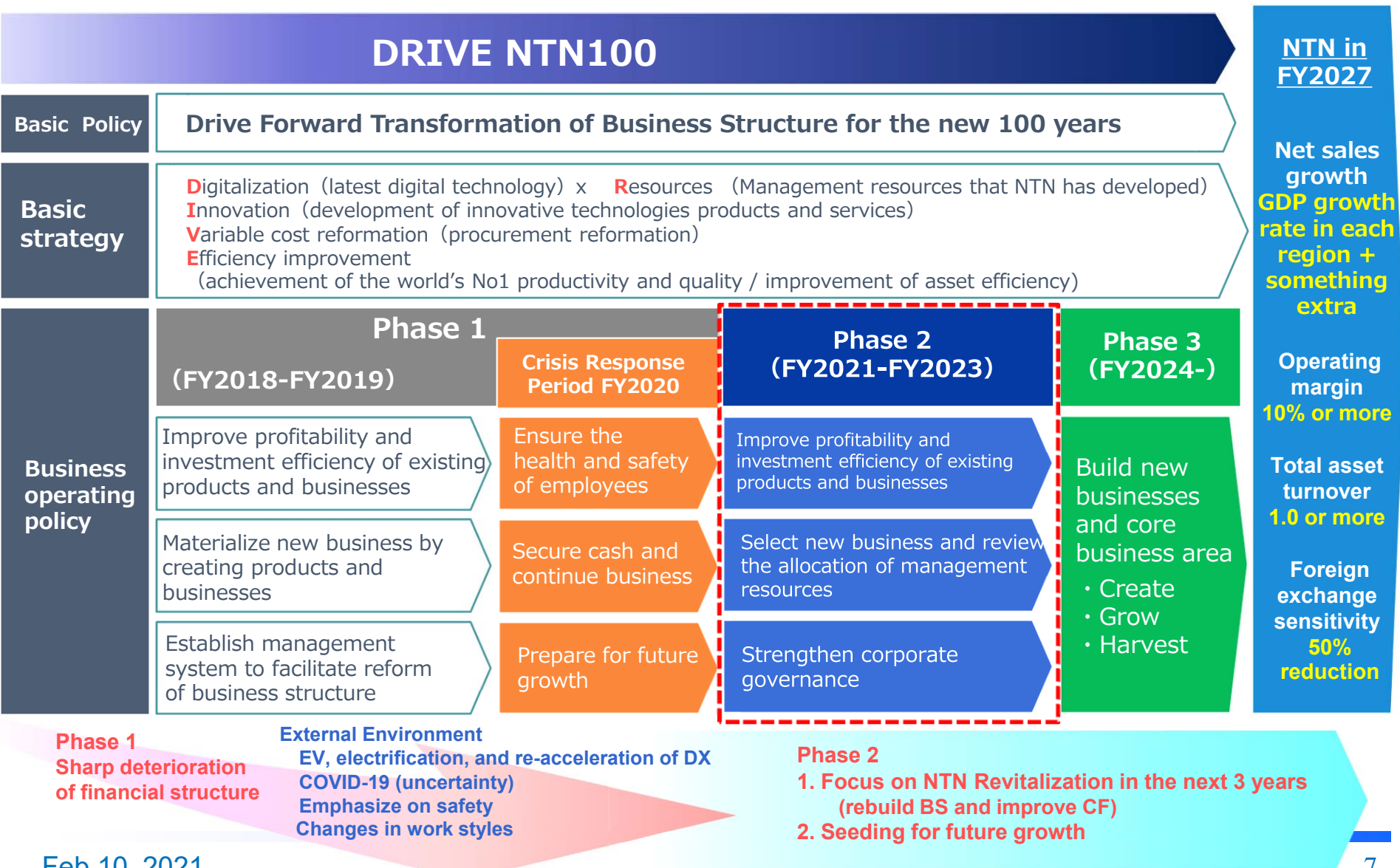
FTSE4Good



2020  
Tokyo Sustainability Index

- NTN Group Vision
- “DRIVE NTN100” Phase2  
(New Medium-term Management Plan)

# (1) Business Operating Policy of “DRIVE NTN100” Phase2



# (2) NTN's Business Environment

## NTN's business environment

## NTN's main strategies

### Response to paradigm shifts



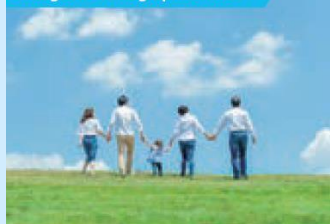
- Spread of EV
- Electrification of industrial machinery
- Spread of AI and IoT
- Spread of infectious diseases (COVID-19)

### Response to Environmental Issues



- Reduction in CO<sub>2</sub> emissions
- Requests for energy-saving machinery
- Reduction in environmental impact
- Response to natural disasters

### Changes in demographics/Issues



- Medium-to long-term labor shortage
- Growth of emerging countries
- Issue of business succession

### Globalization of the Business



- Trade friction and tariffs
- Prevention of child labor (human rights)
- Response to conflict minerals
- Rise of low-cost products

### Japan

- Market shrink due to the depopulation (decreasing birthrate and aging population),
- Promoting response to climate change
- Materialization of Society 5.0

- Save labor and reorganize production
- Use external resource
- R&D of electrification and new products

### Americas

- Moderate population and economic growth
- Policy shift by the new president
- Economic policy shift to respond to climate change
- U.S. and China struggling for hegemony
- Medium-to long-term decline in crude oil price

- Strengthen products for large vehicles
- Expand aftermarket business
- Promote local procurement

### Europe

- Trend of population declining
- Economic policy for climate change (European Green Deal)
- Significant strengthening of regulations for fuel efficiency and CO<sub>2</sub>
- Uncertainty due to Brexit

- Focus on products for EV
- Expand aftermarket business
- Develop Middle East / Africa market

### China

- World's No.1 population (decreasing birthrate and aging population over the long-term)
- Economic policy for climate change and next-generation technology (Made in China 2025)
- Social infrastructure investment in inland areas
- Significant strengthening of regulations for fuel efficiency and CO<sub>2</sub>

- Expand volume
- Focus on products for EV
- Focus on wind turbines and rolling stocks
- Strengthen CMS business

### Asia

- Increase of population and middle-income group
- Social infrastructure investment
- Progress of digitization in emerging countries

- Expand volume
- Utilize LCC products to strengthen cost competitiveness
- Expand aftermarket business



# (3) Target Areas to Invest R&D Resources

## Focus on 6 target areas

- Service / solution
- Robot-related module
- Next-generation mobility module
- Renewable energy-related
- Hydrogen-related
- Life science-related

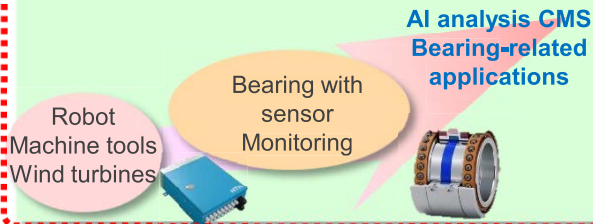
## Strategic direction for R&D

Carbon neutrality  
(Environmental impact reduction and decarbonization)

Pursuit of safety and comfort

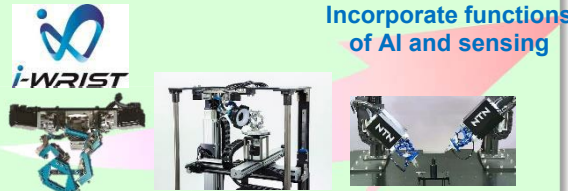
### 1) Service / solution

Towards business providing service that leads to sales of products  
Transformation into a new business format



### 2) Robot-related module

Contribute to automation, labor saving, and productivity improvement in manufacturing industry from perspectives of declining working populations and robot collaboration



### 3) Next-generation mobility module

“Strengthen core technologies and products” and “Develop businesses in new areas” from perspectives of CO<sub>2</sub> environmental regulation and response to mobility



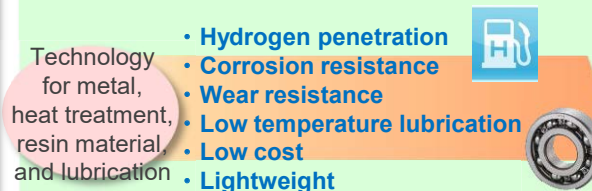
### 4) Renewable energy-related

Contribute to create a society where people can live safely and with peace of mind through technology of independent power source utilizing power generation and storage by renewable energy



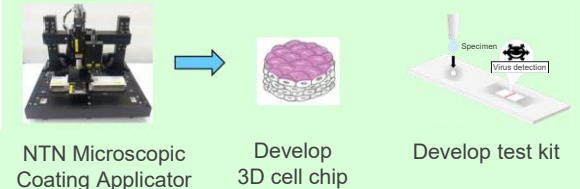
### 5) Hydrogen-related

Develop hydrogen-related products towards realization of carbon neutral  
Gain rapidly increasing demand due to transition to hydrogen society



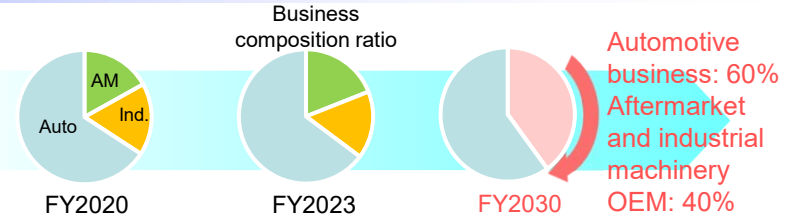
### 6) Life science-related

Develop next-generation products for drug discovery and diagnostic chip with the core technology of microscopic coating  
Contribute to enriching people’s lives



# (4) Rebuild Business Portfolio and Product Portfolio

- Categorize NTN's main businesses into "Create sector," "Growth sector," and "Harvest sector" and concentrate management resources on these sectors
- Focus on expanding aftermarket business in business portfolio



## Industrial machinery business

## Aftermarket business

## Automotive business

**Creation sector**  
Establish new areas for future growth

- Life sciences (drug discovery and regenerative medicine)
- Hydrogen energy market
- Expand market for wrist joint robot
- Condition Monitoring (CMS)

- Expand sales in the Middle East and Africa
- Develop "Talking bearing" and "Thinking bearing"

Sales company in UAE (January, 2021)

- Products adapting to electrification

eHUB, sHUB  
Electric brake

**Growth sector**  
Expand Business  
Concentrate resources

- Green energy products
- Robot / gearbox
- Wind turbines (ultra-large size expansion)
- Machine tools (European market)
- Rolling stock (Chinese market)

- From product sales business to service-oriented business
- Strengthen MRO
- Bearing refurbish business
- Failure detection

- Products adapting to electrification
- Existing products fitting EV

Electric module products  
Low friction, higher efficiency

**Harvest sector**  
Secure stable profit

- Improve profitability by enhancing cost competitiveness
- Construction machinery (electrification and high-performance products), Agricultural machinery (Sales expansion of CVJ for industrial machinery), Aerospace

- Secure saleable inventory
- Highly competitive products (BU, etc.)
- Use of overseas production and external procurement

- Focus on the vehicle segment where NTN's strengths can be utilized
- Optimize customers portfolio
- Secure volume in growth markets

- Reduce fixed cost and expand supply capacity through outsourcing manufacturing (**breaking away from self-sufficiency**) of standard products such as ball bearings

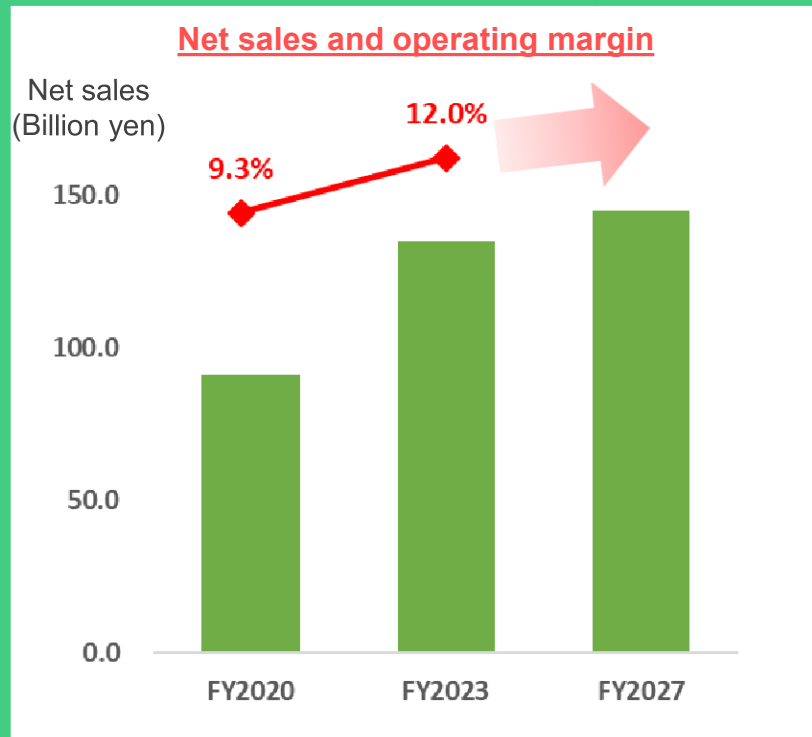
Taiwan      Indonesia

# (5) Business Segment: Aftermarket Business

## Aftermarket business

<Our Vision>

Transform from a “Manufacturing Company” into a “Company that Delivers Values to Customers through Products and Services.”



## Marketing environment

- ✓ Rise of LCC products (improvement in quality of products made in China, etc.) through commoditization of general-purpose bearings
- ✓ Aftermarket overseas: Strong brand of European and U.S. competitors in the marketplace
- ✓ Increase in expected roles, such as the provision of a wide range of services
- ✓ Response for e-commerce with the development of IoT
- ✓ Sophistication of counterfeit bearings

## Initiatives focusing over 3 years

- ✓ By sharing sales strategies across business lines  
Consolidate resources into important industries
- ✓ Strengthen organizational structure to improve supply capacity, service response, and profitability
- ✓ E-commerce based on the new IT core system
- ✓ Promote business development in the service-oriented business

# (5) Business Segment: Aftermarket Business

## Initiatives to strengthen for sales expansion (medium-to long-term)

2020

2021-2023

2024-

**Rebuild revenue base**

**From products to services**

**Increasing the brand value**

Strengthen product-and-service business

Expand bearing refurbish business  
Use of portable failure detection devices  
(In addition to sales of device, analysis report business)



**Commercialize the condition monitoring of customers' equipment by utilizing sensor technology and IoT and grasp the demand for bearing aftermarket**

Strengthen Service response

Strengthen technical support functions in overseas sales companies (ASEAN and India regions)  
Technical service units activities and technical seminars for distributors  
Further strengthen measures against counterfeit bearings



**Develop and expand technical service through the use of remote support cameras**



Strengthen Ability to supply

Maintenance available stock for aftermarket  
Prioritize production capacity for aftermarket (use new IT core system)  
Expand use of overseas manufacturing sites and external procurement



**Accelerate "Made by NTN" by actively utilizing products manufactured overseas  
Strengthen the network system with distributor and expand e-commerce**

Strengthen Structure and organization

Expand sales in growing industries through integrated response from OEM to aftermarket  
Improve profitability by short-term concentration through task force activities for key market  
Strengthen sales structure in the Middle East and Africa  
(A sales company established in UAE in January 2021)

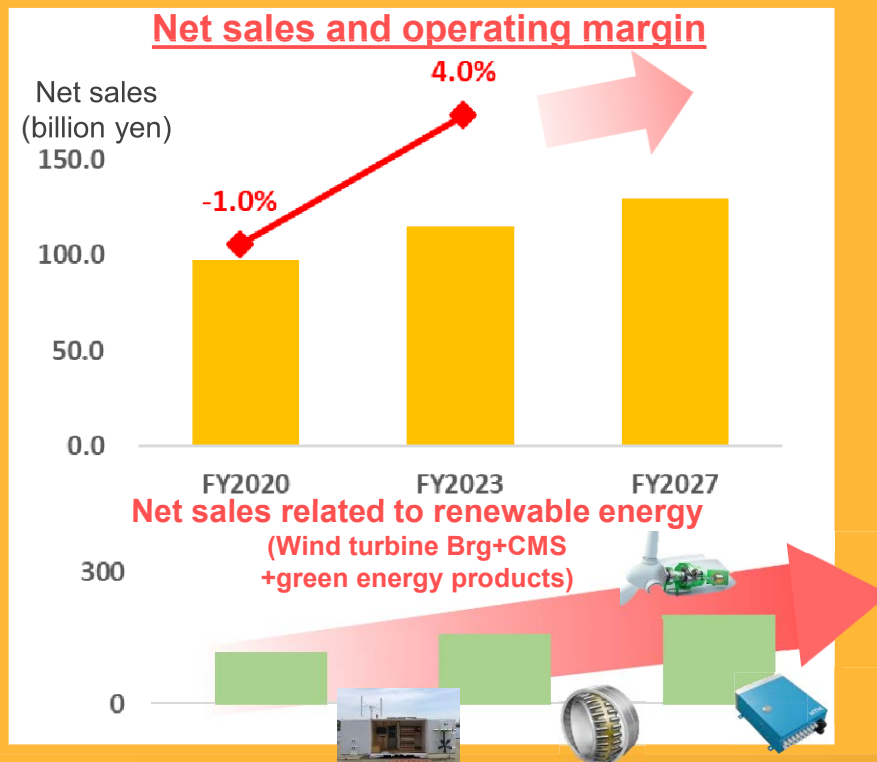


**Relocate automotive aftermarket's headquarters functions to Europe  
Expand sales in potential markets such as China through the use of resources in Europe**

## Industrial machinery business

<Our Vision>

Company that customers rely on most for its exceptional technological competence



### Marketing environment

- ✓ Increased demand for social infrastructure such as wind turbines and rolling stocks
- ✓ Increased demand for robot-related
- ✓ Increased needs for automated machine operation and sensing
- ✓ Competition to develop high value-added products
- ✓ Intensified competition due to influx of low cost products

### Initiatives focusing over 3 years

- ✓ Select areas to focus
- ✓ Improve selling price and reduce or withdraw from unprofitable areas
- ✓ Reduce costs by procuring materials and parts from optimal locations (actively utilize materials from China and India)
- ✓ Expand sales of Wrist Joint Module “i-WRIST”
- ✓ Expand service / solution business (CMS)
- ✓ Expand renewable energy-related products

# (6) Business Segment: Industrial machinery Business

## Initiatives to strengthen by industry (medium-to long-term)

2020

2021-2023





2024-

### Rebuild the revenue base









VS FY2020

### Growth strategy to respond to market change







#### Create sector

<b>Robot-related business (i-WRIST™)</b> 	Gain large customers Promote acquisition of overseas certified standard		<b>Expand overseas business</b> Develop new applications and derivatives
<b>Service / solution business (CMS)</b> 	Establish maintenance service for wind turbine bearing and overseas expansion		<b>Gain bearing demand by leveraging CMS technology</b>

#### Grow sector

<b>Gearbox</b> 	Develop RV gearbox bearing Expand sales of elastic bearings for wave motion gear		<b>Expand sales in China</b> (Follow changes in the industry)
<b>Wind turbine</b> 	Focus on capturing demand in China Drive sales and profit increase		<b>Improve profitability by capturing aftermarket</b> <b>Expand production capacity</b>
<b>Machine tools</b> 	Expand sales in China and India Utilize products manufactured by plant in Germany in European market		<b>Expand CMS needs due to spread of IoT</b> <b>Expand sales of bearings with sensors</b>
<b>Rolling stock</b> 	Promote drastic cost reductions including local production in China		<b>Capture demands for railway network expansion and subway in China</b>

#### Harvest sector

<b>Construction machinery</b> 	Utilize competitive materials and components Adapt to electrification, shift to high function products		<b>Follow changes in social structure and infrastructure</b> <b>Steady capture of demand for electrification</b>
<b>Agricultural machinery</b> 	Expand sales of high value-added products Expand sales of CVJ for industrial machinery		(Same as above)
<b>Aerospace</b> 	Withdraw from or reduce unprofitable projects Improve profitability by concentrating production in NTN-SNR (France)		<b>Earn profits in MRO market</b> <b>Expand sales for space industry</b>

# (7) Business Segment: Automotive Business

## Automotive business

<Vision>

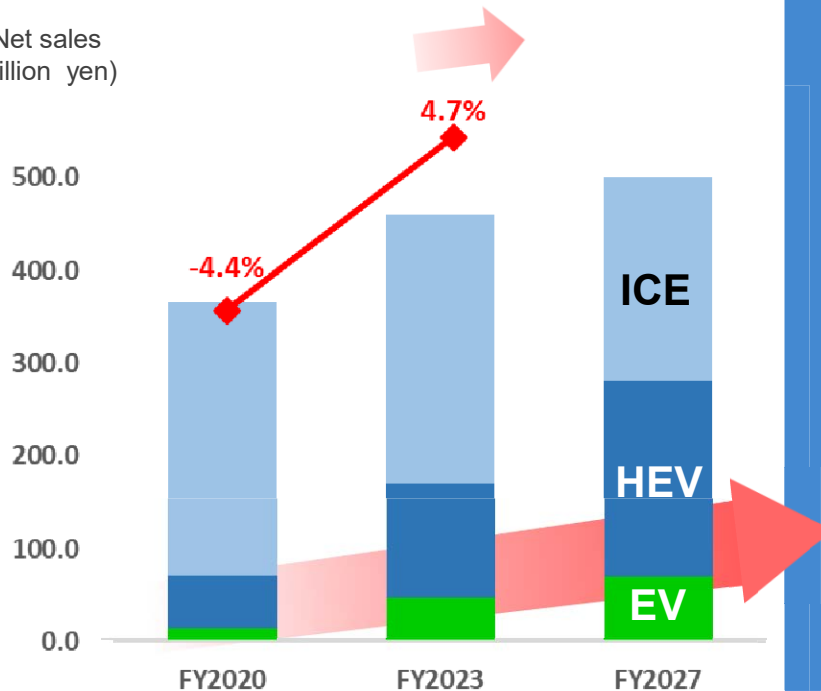
"Top supplier in the Power/Drive Train system "

With an overwhelming speed × solution

No.1 company in proposing to make customers' smile

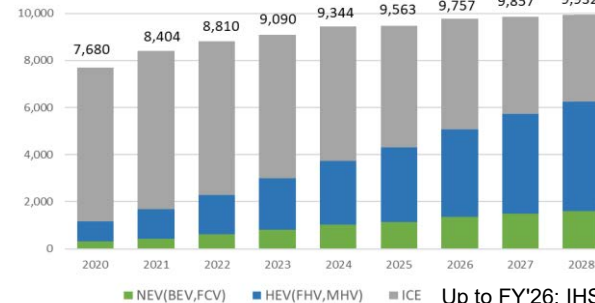
### Net sales and operating margin

Net sales  
(billion yen)



## Marketing environment

### Trends in Global Vehicle Production



Up to FY'26: IHS Markit  
Since FY'27: NTN Forecast



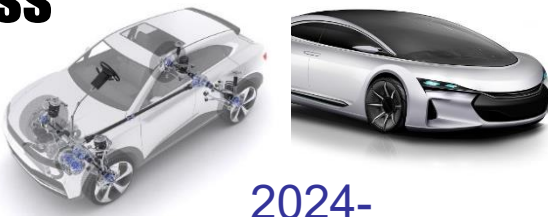
**EV · HEV ·  
Acceleration of  
electrification**

- ✓ Accelerate use of EVs and electrification due to the fuel efficiency and CO2 regulations and government-led targets for electrification in various countries
  - ➔ Supply in optimal area utilizing 's global footprints
  - Support Carbon-Free with higher efficiency products, Contributing to Well-to-Wheel, and Expanding Earnings of Electric module product
- ✓ Increased demand for compact, lightweight, high-speed, low-torque, noise, and vibrations.
  - ➔ Enhance high functional products and technological capabilities.

## Initiatives focusing over 3 Years

- ✓ Shifting to high-growth, high-profit vehicle segments
- ✓ Promoting valuable cost reduction and manufacturing reforms through variable cost reformation
- ✓ Enhance price control and wind-down or withdrawal from unprofitable segments (regions/products)

# [7] Business Segment: Automotive Business



## Initiatives to strengthen by industry (medium-to long-term)

2020

2021-2023

2024-

**Promote earning improvement NOT relying on the merit of scale**

**Strategy for sustainable growth**

Estimated effects by EV · electrification

Core Products

**Driveshafts (CVJ)**



Deepen production reforms (streamlining) under way in Japan  
Horizontal expansion of production reforms to global manufacturing bases  
Concentrated investment in high-performance products and automation

**Shift to large-sized SUV/PUP, EVs**  
**Secure volume in growth markets**  
**Advantage : Small/lightweight, high efficiency, low vibration**

No effects, stable growth

**Axle bearings**

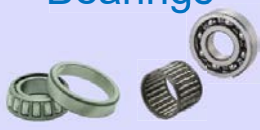


Carefully select capital investments that are directly linked to differentiation and competitiveness  
Focus on enhancing cost-competitiveness with a focus on variable cost  
Develop differentiated products complying with EVs, fuel efficiency and CO2 regulations

**Develop differentiated high value-added products**  
**Realign portfolio by customers and vehicle segments**  
**Advantage : Super low friction**

No effects, stable growth

**Bearings**



Strengthen sales activities especially for high-performance applications  
Enhance production capacity and cost competitiveness especially in Japan and China  
Promote use of external partners on production of standard type product

**Invest resource in high performance bearings through the selection**  
**Advantage : Super high speed, Ultra low friction**

Flat sales, toward high performance

**New areas (Electrification)**



Increase production of gearboxes for electric hydraulic brakes  
Promote cost reduction (Shorten assembly CT/ Promote production in China / Use of Chinese materials)  
Develop new products for integrated electrical modules

**Expand sales of electric oil pumps**  
**Commercialize eHUB/ sHUB**  
**Commercialize electric brakes**

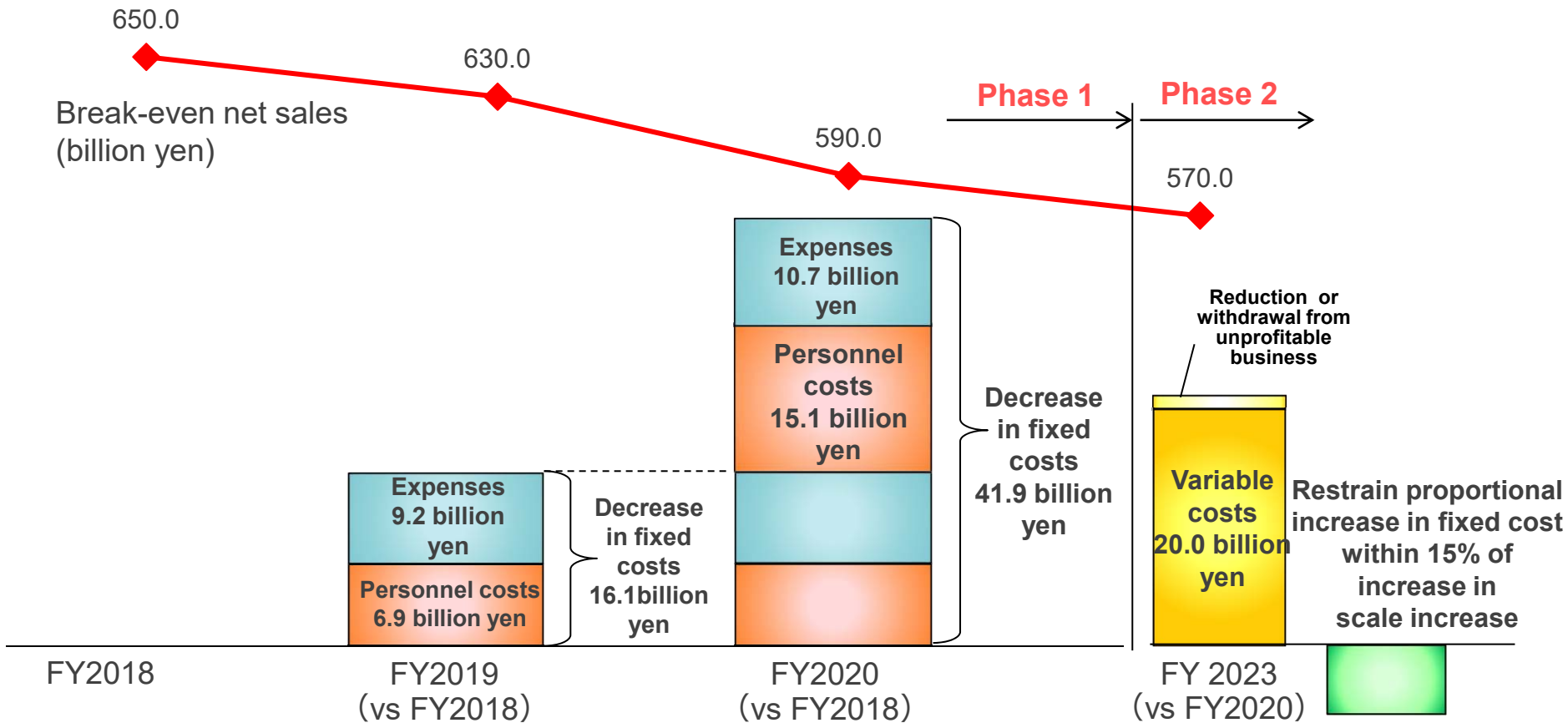
Increase sales, grow accordingly



# [8] Lower Break-even Point

## Towards NTN Revitalization

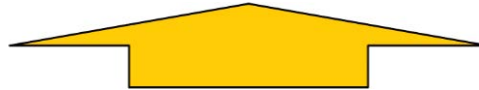
- 1) Phase 1 : Implement reduction of fixed cost after the 2<sup>nd</sup> year, FY2019
- 2) Phase 2 : Further lower the breakeven point focusing on reducing variable costs  
 Restrain a proportional increase in fixed costs to 15% or less and maximize scale effect  
 Downsize or withdraw from unprofitable business and aim to increase added value



# (9) Reduce Variable Cost / Procurement Reformation

## Accelerate Procurement Reformation

Achievements of reform **20.0 billion yen / 3<sup>rd</sup> year**



Achievements of “DRIVE NTN100” and steady implementation of new measures

DRIVE NTN100 Phase 2	Realize the best mix of global and local procurement (optimal procurement)
	Strengthen category management (by function / specialization) and implement strategies by category
	Expand and accelerate unification of contract operations (centralized purchasing)
	Reorganize partner manufactures and shorten supply chain
DRIVE NTN100 Phase 1	Develop information on global purchasing and analyze categories (characteristics of parts / areas)
	Start unification of contract operations (centralized purchasing)
	Actively examine and adopt new partner manufacturers (incl. LCC)

# (10) Control Increase of Fixed costs/ Improve Assets Turnover

## Environment : Decrease in workforce (Japan)

NTN : Declining production efficiency especially in Japan

- Optimize overall production (Improve cash flow)
- Reduce logistics cost / inventory assets by consolidating and streamlining bases
- Reduce manufacturing cost by leveraging external partners and control investments for renewal

## Phase 2: Capital Investment Policy

- 1) Freeze, in principle, investment for capacity increase
- 2) Invest in countermeasures for risks such as natural disasters and safety measures
- 3) Shift to investment for maintenance / renewal / efficiency improvement

Under 60 billion yen  
/3yrs

## Reorganization of Production

Concentrate management resources in products / processes where NTN can leverage its strengths

Reorganize domestic production bases of radial bearings

- Outsource production of standard type products to Taiwanese bearing manufacturer (Break away from “self-sufficiency”)
- For special products, implement reorganization of production with a new plant established in Wakayama playing a central role

## Production Reform Activities

Realize streamlined production and increase throughput

Promote overall optimization (rationalization of overall SCM) and break away from partial optimization (rationalization by process)

- Lead by specialized organization
- Expand lean production method horizontally
- Develop human resource to promote reforms

# (11) Promotion of DX (Digital Transformation)

Until FY2023 (Increase efficiency / Accumulate data)

From FY2024

Digital Technology

## 1. New IT core system

- Strengthen responsiveness to market changes by “visualization” of sales / production / procurement / logistics, and optimize inventory
- Promote utilization of inventory within NTN Group

## 2. Business reform with digital technology

- RPA: optimize routine operations, and go paperless for reports, utilizing IT core system
- CAE: Streamline development / trial production / analysis
- Introduce communication tools compatible with the workstyle reform

## 3. Promote smart factory

- Launch of a new plant in Wakayama
- Optimize production by introducing IoT and AI into production process
- Realize streamlined production by “visualization” of process condition

## 4. CMS (Condition Monitoring System)

- Monitor operating condition of wind turbines, rolling stocks, etc.
- Predict breakdowns in advance by using AI

### Integrate data

Sales / production / procurement / logistics / finance / process / CMS  
Integrate accumulated data

### Upgrade business administration

### Create new business

ex) Environmental business (to adapt to “carbon neutrality”), etc.

# (12) Major Management Indicators of “DRIVE NTN100” Phase2

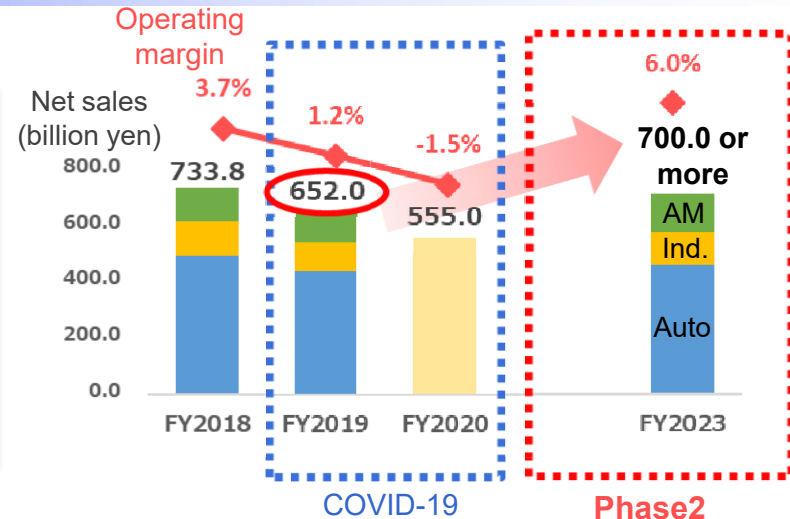
## Target of net sales and operating income

### FY 2023 (last year of Phase 2)

**Net sales: 700.0 billion yen or more**

Based on net sales 652.0 billion yen in FY2019, aim for achieving the growth for 3% of net sales for 3 years

**Operating income: 42.0 billion yen or more  
(Operating profit :6% or more)**

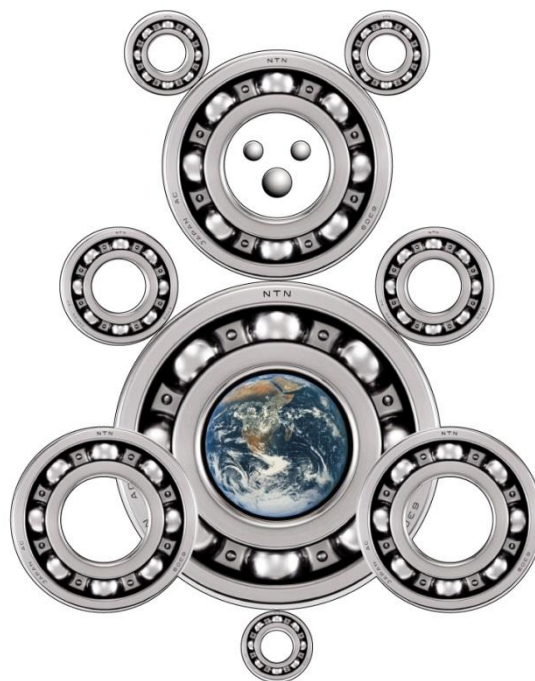


## Other Management Indicators

「DRIVE NTN100」	Phase1			Phase2	
	FY2018 Results	FY2019 Results	FY2020 Forecasts	FY2023 Targets	
Capital Expenditure	¥45.2 billion	¥57.7 billion	¥20.0 billion	¥60.0 billion or less (3 yrs total)	
FCF	-¥22.4 billion	-¥18.1 billion	¥3.0 billion	¥27.0 billion or more	
Inventory turnover ratio	3.8	3.6	3.2	4.1	
Equity to capital ratio	27.4%	20.6%	18.2% (21.4%)	20% or more (23% or more)	
Net D/E ratio	1.2	1.9	2.0 (1.6)	1.5 or less (1.2 or less)	
ROIC	3.3%	1.0%	-1.1%	5% or more	
Exchange rate	USD	¥110.9	¥108.7	¥105.3	¥103.0
	Euro	¥128.4	¥120.8	¥123.0	¥125.0

**Phase2 NTN Revitalization**  
**Phase3 Next growth**

**DRIVE**  
**NTN100**



**NTN**  
Make the world **NAMERAKA**

**D**igitalization, **R**esources, **I**nnovation, **V**ariable cost reformation, **E**fficiency improvement

**NTN T**ransformation for **New 100**years

- This presentation material, our statements made during the presentation, and our comments made during the subsequent Q&A session include forward-looking statements about our future performance and business strategies. These statements and comments are made based on the information currently available and at the discretion of our management.
- These statements and comments based on future forecasts do not guarantee our future performance. Please understand that actual results may differ from our performance forecasts depending on various factors such as changes in demand for our products, exchange rates, interest rates, and contingent liabilities.