

NTN Report 2022

For the fiscal year ended March 31, 2022



NTN®

Make the world **NAMERAKA**

Make the World “NAMERAKA”

NAMERAKA is a Japanese word meaning smooth and harmonious.

Bearing technology is used to smoothen the rotating parts of any type of machine.

With more precise bearing technology, shafts can rotate more smoothly,
minimizing energy loss as much as possible.

By exhibiting ultra-low friction, bearings enable greater energy efficiency,
helping to make electric vehicles, robots and
even a natural energy-based society function more smoothly.



NTN BEARING CORP. OF CANADA LTD.

The first thing that comes to mind when I hear “NAMERAKA” is a strong commitment to support each other with respect and acceptance.

As the Marketing Manager - Aftermarket, my role is assisting in the development of the NTN Marketing Strategy and executing the delivery of our UBE “The Ultimate Bearing Experience” transformation. Acting as a liaison with sales and operations leadership, my role is to ensure harmonization between the Strategic Marketing, Training and Education, Engineering, Customer Operations, and Sales Execution departments.

My favorite part is a most recent project; the implementation and execution of our NTN Campus Virtual Platform, with one of our largest distributor partnerships. 100+ external employees attended our online training platform. It was a tremendous success, and I cannot wait to do it again!



Kelly Lusk
Marketing Manager - Aftermarket

NTN-SNR ROULEMENTS

This is the “raison d’être” of our Group (purpose of being). This word refers to the way in which we intend to play a role in society beyond our economic activity alone. Its sense comes from vision and meaning, in this case, that of harmony and the harmonious. Contribute a notion of: “At our level in all humility but with great determination we want to make the world more fluid and more harmonious through the contribution of all and of our products with their high-performance levels and their durability.”

At the concrete level? Producing technologies that will improve the world for present and future generations by preserving our planet and providing technological and innovative solutions, is what making the world NAMERAKA is all about.



Christophe Espine
Communications Director

A “NAMERAKA Society” we aim for

NTN Bearing Corp. of America

NAMERAKA spotlights our contributions on life; both individually and as a group. It is about recognizing our own gifts and using them to contribute and give back to the world; both big and small.

As the Customer Relations Manager for the Industrial Aftermarket Business Unit, I am so pleased to see the team express their genuine concern for our customers when communicating with them. They convey appreciation for their business and showing empathy when there is a problem. This kind of giving requires them to be cognitive, emotional and compassionate. There is no additional monetary value, yet this type of giving is priceless. They are doing their part to spread NAMERAKA throughout the community. This to me is the true spirit of NAMERAKA. We are the face of NTN, ensuring the customer’s experience is a positive one.



Rhonda Katsiamakis
Customer Relations Manager
Industrial Aftermarket Business Unit

NTN (CHINA) Investment Corp. (NCIC)

One of our missions is to increase the value of the NTN brand by having customers and employees share “Make the world NAMERAKA” in China region and linking it to actions.

In China, there is an old saying meaning “How do we sweep the world without cleaning the house?” What this saying suggests is that “If our company is not NAMERAKA, we cannot make the world NAMERAKA as well.”

While continuing to promote awareness and understanding of NAMERAKA among customers and employees, I would like to work with my colleagues smoothly in order to gain empathy. This activity eventually makes their behavior NAMERAKA, and making NCIC even more NAMERAKA. I believe that if NCIC is able to become a NAMERAKA company, NAMERAKA will be also conveyed to customers and create empathy, which in turn will make the whole of society NAMERAKA.



Xiaofei Wang
Deputy Supervisor
Sales Planning Dept.
Enterprise Planning

*NAMERAKA Society: A society where people can easily lead a secure and fulfilling life in harmony with nature.

Overview for realizing a “NAMERAKA Society”

Founders' Spirits

Corporate Philosophy

NTN SPIRIT

Management Policy

Stance to Stakeholders

Our Vision

The Frontier Spirit / The Coexistence and Co-prosperity Spirit

We shall contribute to international society through creating new technologies and developing new products.

	Credos	Guidelines
Challenge	Buds appear when we challenge with frontier spirit	<ul style="list-style-type: none">● We challenge passionately without being satisfied with the current situation.● We respond quickly to any changes, emphasizing on-site verification.● We enrich our lives by thinking, acting with initiative and continuing to grow.
Collaboration	Leaves grow through the spirit of collaboration with coexistence and co-prosperity	<ul style="list-style-type: none">● We accept and respect differences in each other.● We help each other, treating all associates honestly.● We take care of the natural environment and maintain coexistence with local community.
Commitment	Flowers bloom and fruits grow through fulfilling our commitments	<ul style="list-style-type: none">● We maximize the quality of work aiming for first-class quality under safety-first policy.● We intend to be the strongest partner delivering customer delight beyond satisfaction.● We support improving lives of people around the world through our work.

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.

Employees	NTN Group respects diversity, individuality and a safe and healthy workplace environment where employees can work successfully.
Customers	NTN Group seeks to maximize customer satisfaction and trust by providing products and services of superior quality, safety and reliability.
Business partners	NTN Group, in a fair and free environment, builds good partnerships with its business partners and works together for mutual growth and development.
Local communities	NTN Group respects cultures and customs in the local communities and builds long-term trust relationships by meeting their expectations through its business activities.
Shareholders	NTN Group focuses on return for shareholders by sustainable profitable growth and builds long-term trust relationships with shareholders through active communications.
Environment	NTN Group harmonizes its business activities with nature and contributes to preserve the global environment by providing its technologies, products and services.

- 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

Realization of a “NAMERAKA Society”

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Editorial Policy

The NTN Group believes that building trusting relationships with shareholders and investors, customers, business partners, the international society, local communities, and employees and contributing to the global environment will lead to enhancement of corporate value. In order to report our business activities and sustainability activities to our stakeholders, we have published the “NTN Report (Integrated Report)” since the fiscal year ended March 31, 2010. We will use this report as a means of communicating with our stakeholders to deepen their understanding of us, thereby contributing to the realization of a “NAMERAKA Society.”

Production concept of “NTN Report 2022”

We started “DRIVE NTN100” Phase 2, our three-year medium-term management plan in April 2021. In the fiscal year ended March 31, 2022, the first year of the plan, we achieved profitability for the first time in four fiscal years. This is a result that came after we continued to steadily implement various measures amid a challenging business environment although we sustained the impact of a shortage of semiconductors and soaring logistics costs, including steel materials.

In December 2021, we released an initial version of our roadmap for realizing a “NAMERAKA Society.” This is an overview of our management to ensure that our Group continues to grow as a company that contributes to society, and it represents our activities to address ESG issues. The NTN Group will contribute to carbon neutrality through its business and practice ESG management to realize a “NAMERAKA Society.” This report describes these topics.

Reporting Period and Organization Covered

Reporting Period

Fiscal year ended March 31, 2022
(April 1, 2021-March 31, 2022)
Includes some activities for the fiscal year ending March 31, 2023

Organization Covered

NTN Group
Includes some reports about NTN only

Reference Guidelines

We are enhancing disclosures with reference to the following guidelines and others.

International Integrated Reporting Council (IIRC)
“International Integrated Reporting Framework”

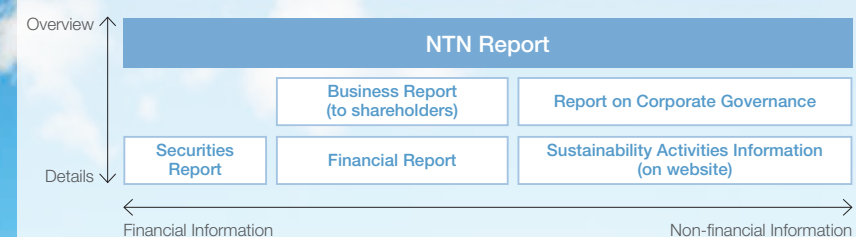
Ministry of Economy, Trade and Industry
“Guidance for Integrated Corporate Disclosure and Company-Investor Dialogues for Collaborative Value Creation”

GRI (Global Reporting Initiative)
“Sustainability Reporting Standards”
SASB (U.S. Sustainability Accounting Standards Board) Standards

Disclaimer

This report contains outlooks and forecasts regarding NTN's future plans, strategies, and business results. Please understand that actual business results may vary from the forecasts made herein by the Company.

Types of Information Provided by NTN



This report presents both financial and non-financial information, focusing on especially important topics. More detailed information is available in the Securities Reports and Financial Reports. Detailed information on the Company's sustainability activities is also available on our website.

<https://www.ntnglobal.com/en/index.html>

About Us | A History of Challenge and Development

Since its founding, NTN has maintained the quality-first approach, and built up reputation and achievements with its high level of technological expertise.

We will continue to contribute to international society through creating new technologies and developing new products.

NTN History

1918

“Frontier Spirit” and “Coexistence and Co-prosperity Spirit” inherited since its foundation

Start of ball bearing research and manufacturing at Nishizono Ironworks

NTN's Founders' Spirit, which has been valued since its founding in 1918, consists of two elements: “Frontier Spirit” that leads us to always take on challenges and “Coexistence and Co-prosperity Spirit” that leads us to develop together with society. The Founders' Spirit has been incorporated into NTN's corporate philosophy as DNA, and it has been inherited over 100 years.

Young engineer Jiro Nishizono started the Nishizono Ironworks in Kuwana, Mie Prefecture in 1918 when he was 21 years old. Noboru Niwa (later the Company's first President) was running a machinery and tool trading company called Tomoe Trading Co. that he had started in Osaka at the age of 22. In 1922, Tomoe Trading Co. successfully bid for cargo of bearings that had been loaded in a Swedish vessel that sank off the coast of Japan. Niwa had transactions with Nishizono Ironworks before, and asked Nishizono Ironworks to refurbish the bearings. Niwa sold the bearings and bought grinders with the proceeds from the sale. Thus, bearing manufacturing got fully underway. The Company's products have carried the NTN logo, which stands for Niwa, Tomoe and Nishizono, since the start of the production.



Noboru Niwa Jiro Nishizono



Bearings at the time of the start of the business

1927

Establishment of NTN Mfg. Co., Ltd. with capital of 50,000 yen

1937

Name changes to the Toyo Bearing Mfg. Co., Ltd.

1954

NTN becomes the first Japanese machinery manufacturer to win the Deming Prize*

The Deming Prize is one of the world's most prestigious awards for TQM (total quality management). NTN is not only the first bearing manufacturer, but also the first Japanese machinery manufacturer to win the award. The Company was one of the first machinery manufacturers to adopt statistical quality control, and the quality control was applied throughout the Company. This effort was recognized, resulting in this honor.



Old head office building



*Deming Prize: A prize created by the Japanese Union of Scientists and Engineers to honor the achievements of W. Edwards Deming, a U.S. engineer, statistician, professor, author, lecturer, and management consultant who popularized statistical quality control in postwar Japan and built the foundation needed to raise the quality of Japanese products to world standards.

1960-1970s

Overseas sales and production strengthening/expansion

Since 1950, we have enjoyed more opportunities to expand exports of bearings. In 1961, NTN established its first overseas sales company in Dusseldorf, Germany, to create a system that can respond flexibly to local demand. In terms of production, NTN established a manufacturing subsidiary in Germany in 1971. It was the first Japanese manufacturer in Europe. In the same year, we established a bearing manufacturing subsidiary in the U.S. Subsequently, we strengthened the local production system by establishing not only plants for finished products, but also plants for the pre-production process.

Through these overseas expansions, we have promoted the local production to manufacture products for customers around the world in places where they need our products.



Germany Mettmann Plant

1989

Name changes to NTN Corporation

In line with the company name change, we also changed the meaning of NTN to represent “For New Technology Network,” and adopted it as a new direction moving into the future.



Current head office building

2008

SNR ROULEMENTS acquisition

Seeking to expand business in the European market, NTN invested in French bearing manufacturer SNR ROULEMENTS in 2007, making it a consolidated subsidiary the following year. The addition of SNR ROULEMENTS to the NTN Group has boosted our European sales, making our business development more geographically balanced, with sales from Japan, the Americas, Europe, and Asia and other regions each accounting for approximately 25% of the total.



Current head office building of NTN-SNR ROULEMENTS

2018

Company's 100th anniversary

On March 1, 2018, NTN celebrated its 100th anniversary and adopted a communication key phrase: “Make the World NAMERAKA, NTN.”

2020

Establishment of brand statement “Make the world NAMERAKA”

We have established the brand statement to communicate globally our goal to realize a sustainable “NAMERAKA Society.”

NTN Make the world NAMERAKA

2014

Provide bearings to the Hayabusa 2 asteroid probe

The H-IIA Launch Vehicle No. 26 with the Asteroid Explorer Hayabusa 2 onboard was launched from the Tanegashima Space Center.

Our spherical plain bearings are used in the hinges that open the solar panels on the Hayabusa 2 in outer space, contributing to the successful completion of its mission in outer space.



Spherical plain bearing adopted for Hayabusa 2

History of Product and Services

1963

Start of driveshaft manufacturing

Technology partnership was formed with UK manufacturer Hardy Spicer to produce driveshafts (constant velocity joints), a promising product expected to enjoy rapid future growth in demand for automotive applications, and production started at the Kuwana Plant.

First driveshaft model produced

1964

NTN supplies journal bearings for the first 0 Series Shinkansen

NTN has helped enable faster and lighter rolling stocks by developing technology tailored to the evolution of high-speed rail and providing high-quality, high-reliability products. NTN's products have been adopted for the first 0 Series Shinkansen as well as the latest model Shinkansen. Our journal bearings for 0 Series Shinkansen were recognized as Tribology Heritage* by the Japanese Society of Tribologists.

*Tribology Heritage: Tribology-related technology and things recognized by the Japanese Society of Tribologists as having a particularly important contribution to the development of science and technology.

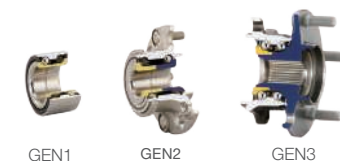


The late 1970s

Evolution of hub bearings

The latter half of the 1970s saw NTN release its axle bearings (GEN1) that were the forerunners of our hub bearings that now have the world's No. 1 market share. In the 1980s, these products evolved into hub bearings (GEN2) by combining the axle bearings with peripheral components such as knuckles in a single unit. The evolution into GEN3 was subsequently accomplished by packaging additional parts such as hub bolts, flanges and knuckles into a single unit to improve ease of assembly on automobile assembly lines. The GEN3 began mass-production in Japan for the first time in the mid-1980s.

The lineup has continued to evolve. Refinements are still being made today, such as by adding sensors and improving ease of assembly.



GEN1

GEN2

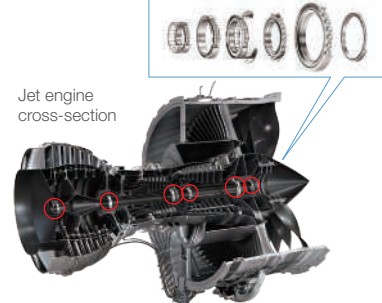
GEN3

1986

Construction of Japan's first aerospace bearing plant

NTN has been producing bearings for aerospace applications with high function and high quality. We are a certified supplier of main shaft bearings to the world's four major jet engine manufacturers, a currently unrivaled achievement among Japanese manufacturers.

Jet engine main shaft bearings



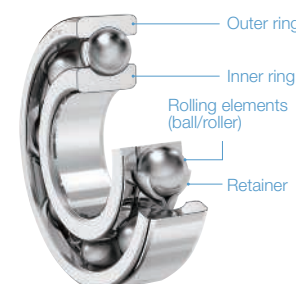
Jet engine cross-section

2000-

Technical service units driving worldwide

At our sales bases around the world, we visit customers by technical service units. Technical service units are completely custom-made multifunctional vans equipped with product samples and maintenance tools. We provide technical diagnostics and technical workshops as well as detailed support for resolving customer issues.

Even after our products are delivered, we use technical service units to support enhancement in productivity and safe operation of our customers' facilities. Through direct dialog with customers, we are working to learn the problems of “customers around the world” to resolve problems in society.



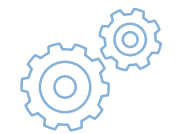
About Bearings

Bearings are eco-products that reduce energy consumption by supporting various rotating mechanical parts and reducing friction. The coefficient of friction of a smoothly rotating bearing is 0.001. This means that you can move a 1,000kg object placed on the ground with a force of pulling an approximately 1kg object. Use of bearings makes it possible to move things with light force, contributing to reduction of energy consumption.

Bearings are mounted inside machinery and are usually hidden from view. But they play a key role in improving the safety and reliability of machinery, helping realize a “NAMERAKA Society.”

General-purpose bearings are composed of four types of components: inner rings, outer rings, rolling elements (balls/rollers) and retainers. While the structure seems simple, any irregularities or cracks in the rings or rolling elements will prevent the bearings from turning smoothly. Every ball used in bearings must be manufactured with a high degree of technological expertise and enough precision to ensure that surface roughness is less than one ten thousandth of a millimeter.

NTN's Strengths
(Competitive Advantages)
→ P.27



Original Technologies

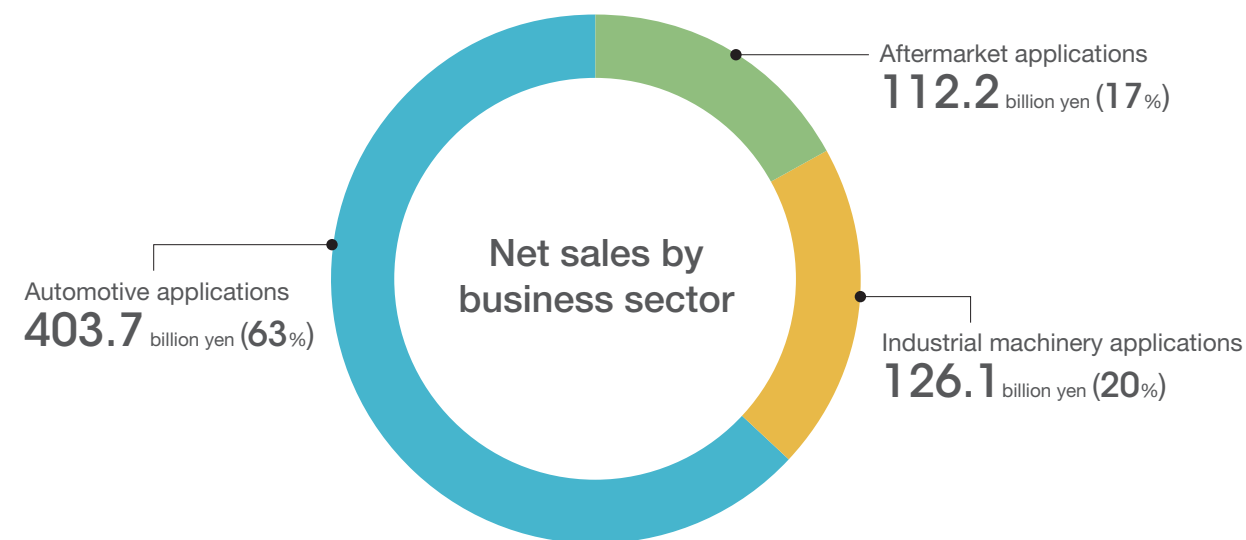


Quality

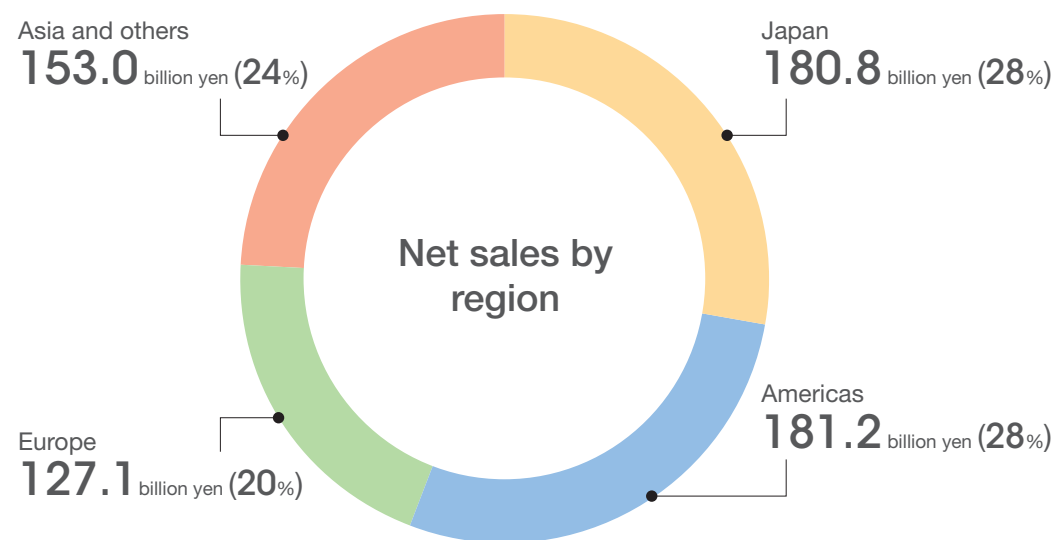


Services

Net sales **642.0** billion yen Operating income **6.9** billion yen
Fiscal year ended March 31, 2022



		(billion yen)		
		Fiscal year ended March 31, 2021 Results	Fiscal year ended March 31, 2022 Results	Fiscal year ending March 31, 2023 Forecast
Net sales	Aftermarket	91.5	112.2	121.0
	Industrial machinery	101.9	126.1	140.0
	Automotive	369.5	403.7	459.0
	Total	562.8	642.0	720.0
Operating income (Operating margin)	Aftermarket	8.9 (9.7%)	14.7 (13.1%)	16.5 (13.6%)
	Industrial machinery	0.4 (0.3%)	4.1 (3.2%)	6.5 (4.6%)
	Automotive	-12.4 (-3.4%)	-11.9 (-2.9%)	0.0 (0.0%)
	Total	-3.1 (-0.6%)	6.9 (1.1%)	23.0 (3.2%)



Aftermarket applications

→ P.39

● Products for MRO

As business for MRO (Maintenance, Repair and Overhaul), NTN sells bearings for repair such as mining, paper manufacturing, steel, and food machinery. We contribute to the stable operation of our customers' facilities around the world through a comprehensive product lineup and a prompt delivery system.

● Automotive aftermarket parts

NTN offers a wide lineup of products ranging from passenger cars to heavy trucks, and handle parts kits with bearings and peripheral components as a set. Through expanding our network of distributors mainly in Europe and the U.S., NTN meets the needs of customers seeking high quality products in the automotive aftermarket.

● Maintenance tools

We sell maintenance tools that support the mounting and dismounting of bearings, and "NTN Portable Vibroscope" that can easily diagnose bearing conditions simply by installing it on equipment. We also provide a reporting service in which NTN's technical experts diagnose and analyze bearings based on the data measured by the "NTN Portable Vibroscope,"





Industrial machinery applications

→ P.41

NTN supplies a wide range of bearings for various industrial machinery such as construction machinery, agricultural machinery, wind turbines, robots, aircrafts, railway rolling stocks, machine tools, and electronic equipment to reduce the environmental impact. NTN contributes to the development of industry and the creation of a sustainable society by providing products and services that meet the needs for automation and labor saving at manufacturing sites including detection of abnormality in bearings through sensing.


Construction machinery






Applications for resource mining and civil engineering


Agricultural machinery






Helping ensure stable food production


Gearboxes






Helping ensure high robot productivity


Aerospace






Used for worldwide jet engine applications


Rolling stock





Helping ensure safety of worldwide high-speed railways


Machine tools






Helping ensure high machining precision


Electronic devices






Used for hard disc drive and thin fan motor applications


Office equipment







Helping ensure precision operation of copier/multifunctional printer


Robots






Realizing high-speed, high-performance visual inspection and space saving






Realizing continuous and stable parts picking


Wind turbine







Support rotation of main shafts, gearboxes, generators, etc.

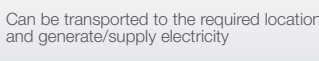
Green energy products







Improve wind turbine utilization rate through condition monitoring





Can be transported to the required location and generate/supply electricity



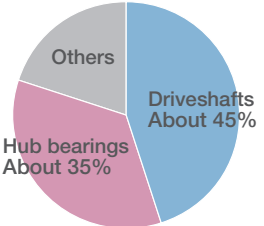


Contribute to disaster prevention and mitigation with the industry's No. 1 quietness

Automotive applications


→ P.43

NTN provides a wide range of products for automobiles as a specialist in the power/drive train system, contributing to fuel efficiency and reducing CO2 emissions. In addition to core products of hub bearings (the world's No.1 market share), driveshafts (the world's No.2 market share), and various bearings, NTN provides module products with high functions by combining our products with peripheral components and fusing our core technologies to contribute to the creation of safe, secure, and comfortable future automobiles.




Composition of automotive sales

Engines




High-density, high-strength sintered gears for starter motors

Accessories




Pulley bearings for high-speed rotation




Auto tensioner with the variable damper mechanism for ISG-equipped engine

Steering components




Mechanical clutch units for next-generation steering systems

Seats



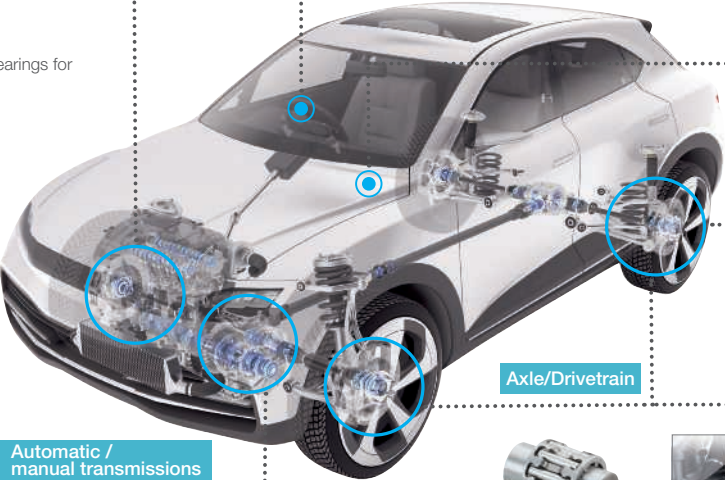
Clutches for seat lifters

Brakes

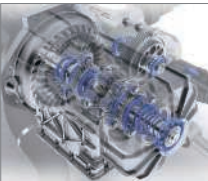


Ball screw drive modules for electric hydraulic brakes


Axle/Drivetrain



Automatic / manual transmissions




Transmissions CVT




Needle roller and cage assembly bearings for planetary gear


Products corresponding to EVs




High Speed Deep Groove Ball Bearings for EVs and HEVs




Hub bearings




Ra-sHUB




sHUB




eHUB



Driveshafts



World's No. 1 market share

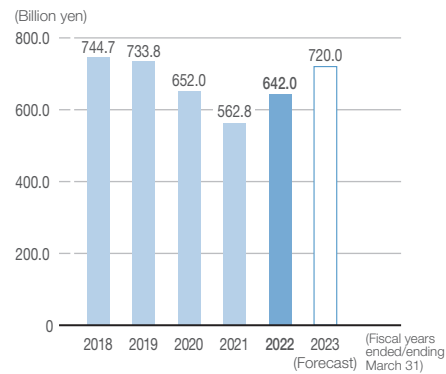


World's No. 2 market share

Financial Data

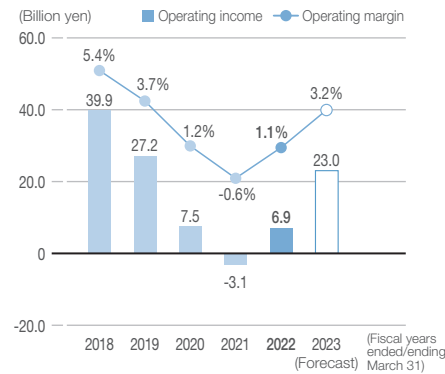
Net Sales

642.0 billion yen



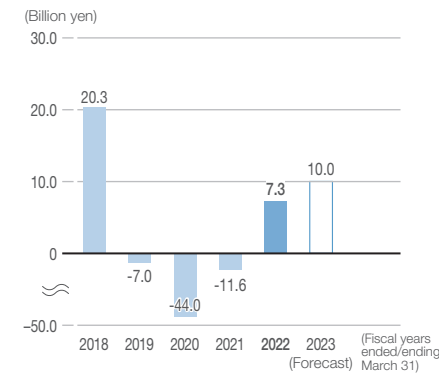
Operating Income/Operating Margin

Operating income **6.9** billion yen
Operating Margin **1.1** %



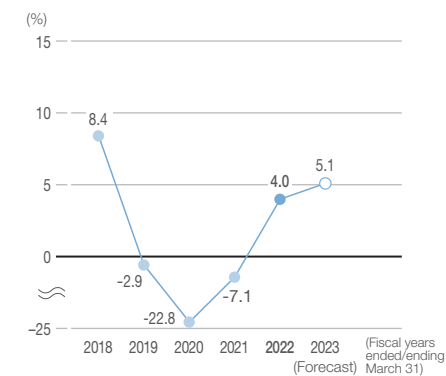
Profit (Loss) Attributed to Owners of Parent

7.3 billion yen



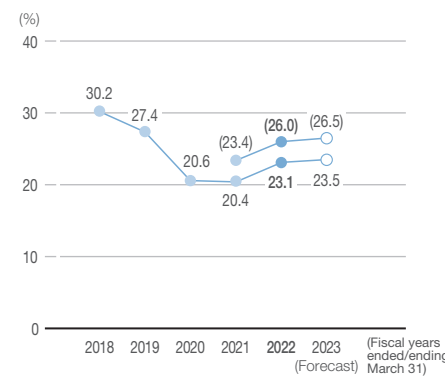
Net Income (Loss)/ Average Shareholders' Equity (ROE)

4.0 %



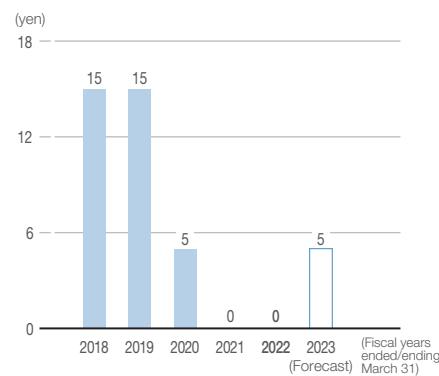
Equity to Capital Ratio^{*1}

23.1 (26.0) %



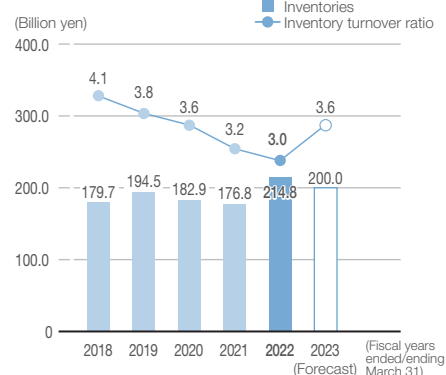
Cash Dividends

0 yen



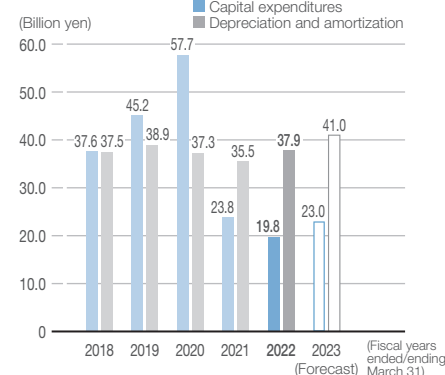
Inventories / Inventory Turnover Ratio

Inventories **214.8** billion yen
Inventory Turnover Ratio **3.0**



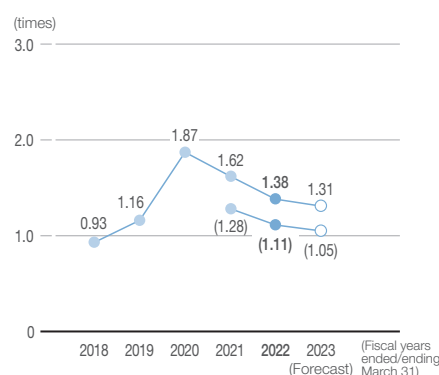
Capital Expenditures / Depreciation and Amortization

Capital Expenditures **19.8** billion yen
Depreciation and Amortization **37.9** billion yen



Net D/E Ratio^{*1}

1.38 (1.11) times

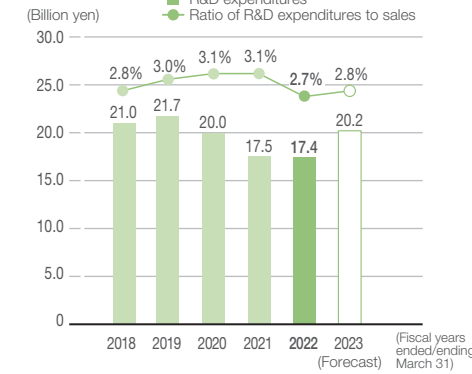


^{*1} The figures in () take into account a part of the subordinated bonds through public offering that is recognized as equity (50%).

Non-financial Data

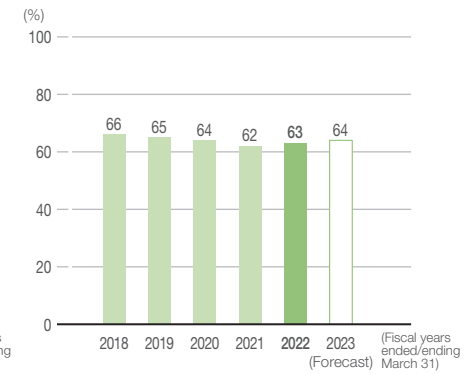
R&D Expenditures Ratio of R&D Expenditures to Sales

R&D expenditures **17.4** billion yen
Ratio of R&D expenditures to sales **2.7** %



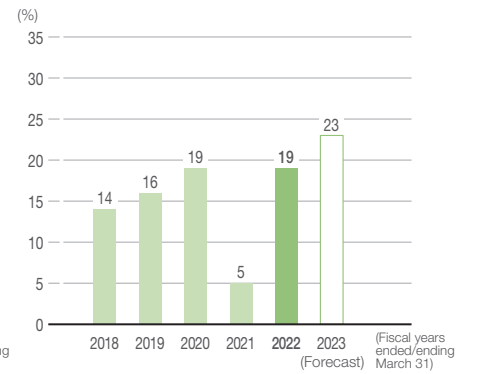
Percentage of Employees Overseas

63 %



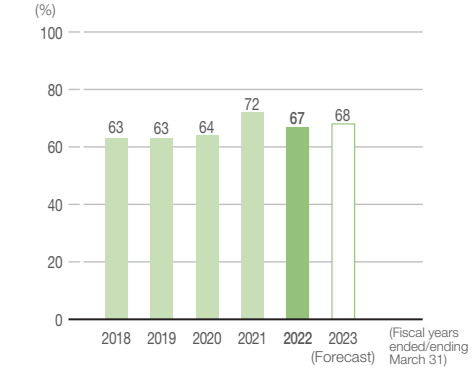
Percentage of Hired Female Graduates^{*2}

19 %



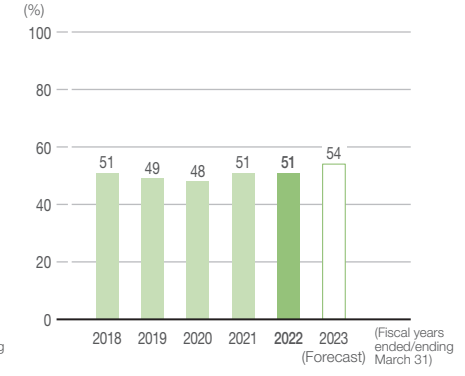
Ratio of Local Procurement^{*3}

67 %



Ratio of Overseas Production

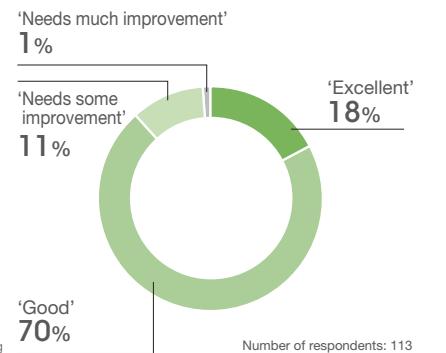
51 %



Customer Satisfaction Survey Responses^{*4}

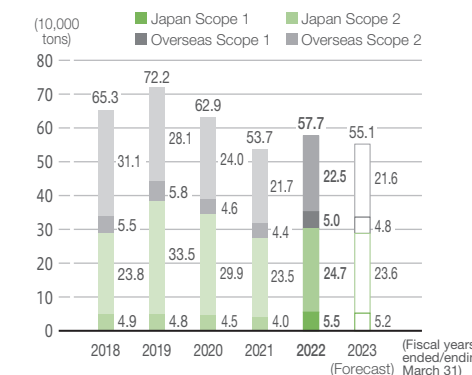
Either 'Excellent' or 'Good'

88 %



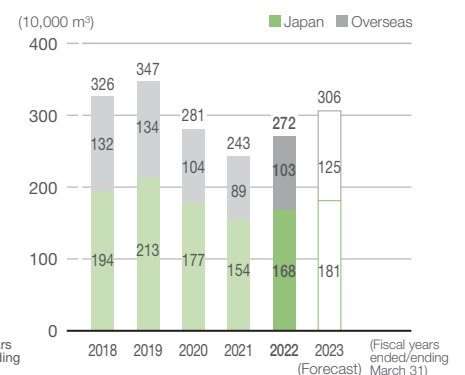
CO₂ Emissions [Scope 1 and 2]

Japan Scope 1 **5.5** ten thousand tons
Japan Scope 2 **24.7** ten thousand tons
Overseas Scope 1 **5.0** ten thousand tons
Overseas Scope 2 **22.5** ten thousand tons



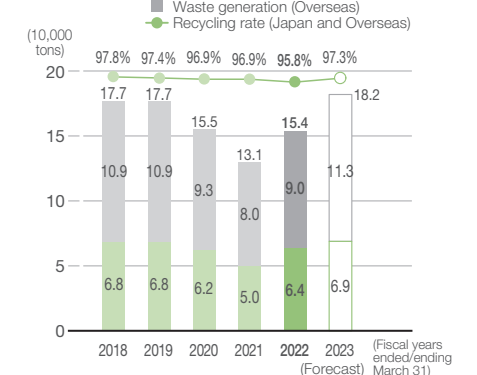
Water Consumption

Japan **168** ten thousand m³
Overseas **103** ten thousand m³



Waste Generation/Recycling Rate

Waste generation **15.4** ten thousand tons
Recycling rate **95.8** %



^{*2} Organization covered: NTN only

^{*3} From NTN Report 2021, the ratio of direct materials procurement in own country (region) is calculated and presented.

^{*4} Survey period: From October 2020 to September 2021

We will accelerate our efforts for revitalization of NTN through transformation of its business structure in the Medium-Term Management Plan.



Director
Representative Executive Officer, President
CEO (Chief Executive Officer)

Eiichi Ukai

Focusing on resolving each business issue

In April of last year, when I took office as President, Executive Officer and CEO, I promised our investors and stakeholders that I would accelerate the transformation of the business structure by steadily implementing the Medium-Term Management Plan “DRIVE NTN100” Phase 2. I then devoted my energy to business management over the past year, while thinking that my mission is to strengthen the financial structure and build a corporate structure that can respond to changes in the business environment, thereby revitalizing the NTN Group as well as to foster an executive team that will lead the future generation.

As the world is constantly evolving, as exemplified by a major transformation in the automotive industry, we have contributed to conservation of the global environment for over 100 years by globally delivering products that reduce friction to minimize energy consumption to the almost limit. Because we have technologies, production capabilities and product quality that enable us to compete at high levels with competitors across the world, we believe that the NTN Group can further exercise its strengths with an eye to the carbon-free era. By steadily and promptly work on each issue we face, we will follow a path toward revitalization of the NTN Group and move forward to further growth.

We regard the second year of the three-year management plan “DRIVE NTN100” Phase 2 as an important turning-point year for continuously focusing on strengthening our financial structure and proceeding with planting seeds for future growth. I am taking the lead for this transformation and employees of all departments including Development, Procurement, Manufacturing and Sales will unite as one to strive to improve our business performance.

Reviewing basic operations to strengthen competitiveness

Over the past year, the environment surrounding the NTN Group was a very challenging one. The automotive industry, which accounts for approximately 70% of our net sales, saw a prolonged shortage of semiconductors and other materials amid the coronavirus pandemic and many of our customers had no choice but to reduce production, which adversely affected the business performance of the NTN Group. In the same year, harsh situations continued as prices of steel and other materials and fuel and logistics costs all surged with a rise in personnel expenses. Furthermore, Russia’s invasion of Ukraine has heightened the uncertainty of the global economy.

In this business environment, the NTN Group has started to thoroughly strengthen its competitiveness with firm resolve by reviewing its basic operations including “buying,” “producing” and “selling” as a manufacturer. Regarding “buying,” we are pushing through Variable Cost Reformation by promoting global procurement and centralized purchasing and by strengthening category management with these measures being the pillars of the reformation. In addition, regarding “producing,” we are moving ahead with production reformation activities through a full implementation of cash flow management, and with the reorganization of production sites in Japan. Meanwhile, regarding “selling,” we are enhancing service initiatives, supply capacity and production systems and organizations by taking measures with the main focus on a shift from just selling bearings (hardware) to expanding the lineup of products that offer added value with sensors (software). These initiatives are being made by employees who engage in technologies and R&D and share the direction of such initiatives. I feel that the initiatives have already been producing good results.

Furthermore, with regard to “selling,” we have made the utmost efforts to reduce costs as a manufacturer and are proceeding with price revisions to respond to increased costs such as rising prices of raw materials while asking customers to understand such revisions. As for projects in which it is difficult to ensure profit, we have changed our general sales policy that focuses on a market share, and have been implementing selection and concentration. Through these initiatives, we have succeeded in producing positive results in the past year.

Promoting transformation with “SQCCD” regarded as the pillar of business management

Operational reforms including a change in the sales policy adds a new dimension to the organization. To cope with such issues, I concluded that principles that should be shared across the NTN Group as a manufacturer (in other words, a manufacturer’s chief support) are absolutely necessary. For this reason, I internally announced a specific mindset (way of thinking, starting point for all ideas) that serves as the pillar of business management. The mindset is called “SQCCD.” “SQCCD” is an acronym of Safety, Quality, Compliance, Cost and Delivery. Safety indicates business management with the highest priority given to the safety of employees, customers and business partners. QCD is commonly used but based on my extensive experience in the quality department and overseas businesses, I think ensuring safety is the top priority in business management.

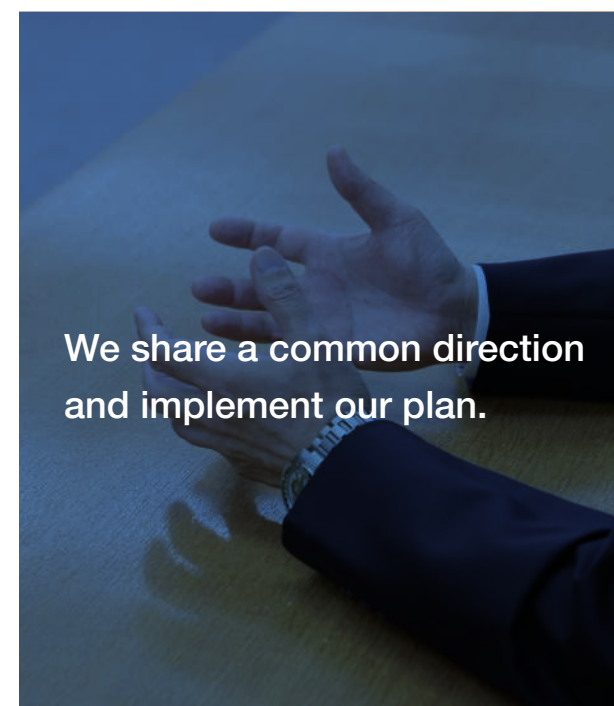
Quality represents our idea that we aim to further improve not only product quality but also quality of work

and personnel based on the belief that “a company is its people”. Compliance means, needless to say, compliance with laws and regulations. In addition, we will thoroughly promote management through ESG activities. We regard Cost as the source of corporate competitiveness and have taken measures to ensure cost awareness. As for the final element, Delivery, we will work more diligently than ever to ensure that work deadlines and due dates for delivery of products to customers are met based on the idea that time is a resource.

In the last year, as part of the Bad News First measure, I have requested each site to make a prompt report on SQCCD. Additionally, at the beginning of a weekly Executive Officers’ meeting held at the head office, information on SQCCD is shared and responsive measures are discussed there and then so that the measures can be implemented promptly. Moreover, since last year, the President’s policy including SQCCD has been communicated to managers and other employees in order to ensure the entire Group is aware of it. Approximately 24,000 people in the Group share ideas and a common direction, and I hope that it will serve as the driving force for the steady implementation of “DRIVE NTN100” Phase 2.

Accelerating transformation into a business with a structure that can secure profit

With regard to earnings results for FY2021, although the automotive business, which accounts for approximately



We share a common direction and implement our plan.

70% of our net sales, had a hard time with market confusion, the industry machinery business and the aftermarket business were on a recovery trend. As a result, net sales, operating income and profit attributed to owners of parent for the full fiscal year under review amounted to 642.0 billion yen, 6.9 billion yen and 7.3 billion yen, respectively. We will expand the aftermarket business as well as further strengthen to reduce variable costs through Variable Cost Reformation and reduce fixed costs through production reforms as a manufacturer and leads to our revitalization. After advancing above measures, we will continue to steadily implement passing on costs arising from a surge in resource prices to selling price, reducing or withdrawing from unprofitable businesses, and others in order to improve the operating margin. Holding the view that these reforms of the business structure will make it possible to lower the break-even point, we will transform into a business with a structure that generates profit even if the sales volume declines due to negative market factors.

We develop business globally with strengths on original technologies, quality and services, but some of our global competitors enjoy more than 10% operating margin. The NTN Group has an objective to create corporate value, and we will improve that point during “DRIVE NTN100” Phase 2 and thereby ensure revitalization of the NTN Group and establish a new growth platform.

■ P.49 CFO Message

The shift to EVs is a great business opportunity for the NTN Group

Needless to say, the transition to electric vehicles (EV) is a major issue in the automotive industry. As a result of the shift to EVs, less parts are used to assemble vehicles and some people have informed us about their concern regarding the negative impact of the use of less parts on the NTN Group’s businesses. Conversely, however, we regard the shift to EVs as a great business opportunity for us.

Approximately 80% of sales in the automotive business come from products for drive trains including driveshafts (CVJ) and hub bearings. Driveshafts are important parts that transmit motor power to tires. In the case of EVs, power comes from a motor, not from an engine, and as the initial input torque increases, the size of driveshafts also increases. In proportion to the increase, the base price is expected to rise. In addition, as a result of changing the power to motors, more advanced technologies such as low vibration performance are required. In this regard as well, we think the Company, which has the second largest share in the global market for driveshafts and has worked on technical development, can draw on a competitive

advantage. Actually, we have received many inquiries from customers in Europe and the Americas and our driveshafts are used in many EVs. Thus, the driveshafts have major potential from the medium-term perspective.

On the other hand, regarding hub bearings, low price campaigns by our competitors in China, South Korea, etc. are a threat to us and it has become difficult to secure profit by offering products with the existing performance and quality. However, the Company is capable of supplying high value-added hub bearings by taking advantage of technologies cultivated in development of in-wheel motors. Currently, we are proceeding with collaboration with Japanese automotive manufacturers in order to launch our new products such as eHUB and sHUB into the market.

In regard to bearings for engines and transmissions, our supply volume is not large, so the impact of the shift to EVs on our business for such bearings is considered to be limited. We actually believe the change from engines to motors will be a business opportunity and we have already started to focus on marketing activities in-house. Especially in terms of development of technologies to support higher speeds of motors, the Company is ahead of other companies and we are confident that we can meet new needs associated with the shift to EVs. Through the above-mentioned activities, we will establish a robust competitive advantage with an eye to the next generation and aim to drive growth in the automotive business.

■ P.56 Contribute to Carbon-Free Society:
Save energy for EVs and electrification

Strengthening the framework for expanding the aftermarket business

Regarding the aftermarket business, which is a priority issue in “DRIVE NTN100” Phase 2, we are channeling energy into expansion of such business. As for global standard inventories, which are necessary for repair, we have already secured a top-selling product lineup. This enables us to get closer to finishing up development of a system that globally supplies products in response to sudden demand from customers. Going forward, we will further accumulate inventories and, at the same time, work to strengthen the management of inventory assets in an initiative to reduce work-in-process inventories through production reforms, which are concurrently moving forward. In doing so, we will enhance our competitiveness.

In addition, regarding the aftermarket business, we will fuse an idea of DX (digital transformation) with bearings, which serve as the foundation of businesses of the NTN Group.

When looking out at the world, it is no exaggeration to say that all moving machines contain bearings.



Furthermore, although there are various data concerning the surroundings of rotating bearings, such data have not been utilized so far. I believe these data are resources.

For example, attaching a sensor to bearings makes it possible to accurately monitor the status of a machine. Industrial machinery is not allowed to stop even for a moment and therefore machinery deterioration status needs to be accurately ascertained according to its operating time. In this regard, we believe “talking bearings”, which are under development by us, can meet customer needs for things such as planned maintenance. Regarding condition monitoring for which efforts have started to be made in the fields of wind turbines, etc., in addition to our condition monitoring systems (CMS) that have already been commercialized and launched into the market, other interesting products (such as bearings that have a built-in sensor and do not need an external power source) have been created in-house one after another. Since these products constitute a promising field, we will broaden their application areas in the future.

Going forward, collecting big data from a wide range of industrial machinery will make it possible to predict when equipment used in a specific line of a specific factory of a specific customer at a specific frequency will need to be repaired. Customers will be able to perform planned maintenance accurately and the Company can estimate an appropriate level of inventories, which will lead to a pull manufacturing system. We believe this will give us a major advantage in the aftermarket business.

■ P.57 Contribute to Carbon-Free Society:
Increase efficiency of manufacturing equipment

Promoting the ESG management with a road map to realize a “NAMERAKA Society”

The NTN Group has been promoting the ESG management with the aim of achieving medium- to long-term sustainable growth. Last year, we created a road map for realizing a “NAMERAKA Society.” To

resolve various issues related to ESGs, backcasting from a desirable future needs to be performed to determine in a detailed manner what target must be achieved and when. To identify a specific future that is expected as an extension of the current business activities of the NTN Group, perspectives of forecasting and backcasting have been forged. In doing so, we determined initiatives that we should work on.

■ P.53 Roadmap for realizing a “NAMERAKA Society”

Furthermore, starting this fiscal year, ESG-related items must be set in relation to business execution by Executive Officers, and a new corporate award system “NTN PROUD AWARD” that commends employees who conducted ESG activities has been introduced. Through these activities, we will accelerate the ESG management across the NTN Group.

■ P.75 Strengthen governance
■ P.72 Message from the Executive Officer in Charge of Human Resources

With regard to the environment segment in particular, considering that the fact that products offered by us make a significant contribution to carbon neutrality needs to be shared once again across the Group, last year, I took measures to make it known by our personnel that our products and further improvement of related technologies will lead to enhancing corporate values through realization of a carbon-free society.

In terms of business, not only continuous creation of products that enable the minimization of energy loss but also reduction of CO₂ emissions generated during the manufacture of products is an important issue. As a specific target, we will endeavor for zero emissions by 2035 in relation to Scope 1 and 2. Regarding heating for forging, heat treatment and other processes that consume a large amount of energy, we have already started to convert from fossil fuel to electricity as well as examine the possibilities of utilization of hydrogen and ammonia. In addition to this, efforts will be made to adopt the highest level of thermal insulation materials for heating furnaces. Moreover, as for Scope 3, our goal as of now is to implement such measures by 2050 in cooperation with suppliers.

In addition, economic value is expected to be created by introducing a new process in the course of aiming for carbon neutrality. For example, in the process of heat treatment, improvement of processing stability and quality can be expected for vacuum furnaces that do not use atmospheric gas and consume less energy, and expansion of the induction heating method based on use of electricity is expected to improve economic performance through high heat efficiency. With such economic value in mind, we will explore the possibilities of new technology.

■ P.59 Realize Carbon Neutrality

We promote the ESG management based on a road map.

Not only efforts related to the environment but also strengthening the human resource base is essential for sustainable growth.

As mentioned at the beginning of this document, revitalization of NTN and fostering an executive team that will lead the future generation are listed as missions under the President's policy. The Company made a transition to a Company with a Nominating Committee, etc. in 2019 and I became the first President nominated by the committee. What is important here is to build a system that fosters my successor and then a successor to that successor. Last year, we held a group training session for Operating Officers in which Outside Directors also participated. In addition, regarding managers, “NTN Next Leader Program (NNLP),” a program for fostering candidates for directors and executives has been started.

I think it is important for promising personnel to take charge of a demanding workplace, thereby gaining experience. I often say as a joke, “Don't just gather chestnuts from a fire, use them to make candied chestnuts!” What I mean by this is that experiencing various workplaces and sometimes getting into the thick of it will improve the qualities of individual employees and this will eventually lead to development of future directors and executives. Based on this viewpoint, going forward, we will strengthen on-site education and training, which is more than just words on paper.

■ P.75 Strengthen governance
■ P.70 Prosperous Human Development: Human resource development

What I am painfully aware of after experiencing work globally is that we need to work together as a team. Even with an excellent leader, if the team doesn't function, results cannot be produced. A path to success can be seen only when the leader of a team wins the confidence of all the other team members and all the members share ideas, advancing toward a challenging goal. We will take measures to cultivate such corporate culture.

Also, in terms of management, I would like to place a focus on the concept of public interest capitalism, also known as human capital management. Corporate activities are promoted by the power of each and every employee and “a company is its people.” In recent years, DX has accelerated and AI and other technologies have gained popularity. Under these circumstances, mobility of personnel has increased, making it increasingly necessary to invest in human resources. To make the Company appealing to its employees, we will strengthen cost competitiveness by taking measures such as consistent cost reduction and earn an appropriate level of profit, thereby investing in human resources. The Company will generate additional profits in the future by remunerating daily efforts of employees and continue to grow with its stakeholders.

Our efforts to realize a “NAMERAKA Society” contribute to attainment of sustainable development goals (SDGs) adopted by the United Nations. Of SDGs, 17 development goals share many common interests with efforts made by the Company in its history. Based

on those past results, we will accelerate our efforts by clarifying points that need to be strengthened. Furthermore, in 2015 the Company signed the United Nations Global Compact which aims to build a framework for the international community to realize sustainable growth. The Company advocates ten principles in four areas including human rights, labour, environment and anti-corruption. Going forward, we will continue to promote activities to put the ten principles of the United Nations Global Compact into practice and achieve SDGs.

By first implementing the Medium-Term Management Plan steadily and thereby increasing the operating margin, we need to pave the way for improvement of corporate value and resumption of dividends as soon as possible.

Currently, the Company is earnestly working on the creation of new businesses in parallel with revitalization of its core businesses. Such new businesses include buds of businesses utilizing our fundamental technologies to enable us to contribute to the resolution of social issues. The NTN Group will press onward with pride with its 100 years of contribution to the global environment through energy consumption reduction technologies. We are determined to achieve the challenging goal of revitalizing NTN and we kindly ask for your continued support.



NTN Group has identified materiality responding to SDGs in order to contribute to solving social issues. Taking advantage of management capital developed over more than 100 years and the unique features of NTN, we conduct business activities based on our corporate philosophy through the value chain.

By providing products such as bearings and driveshafts as well as technical services, and creating environmental and social value, we aim to realize a “NAMERAKA Society” where people can easily lead a secure and fulfilling life in harmony with nature. We will continue to promote ESG management to achieve sustainable growth and contribute to solving social issues.

NTN's Business Model

Materiality → P.21

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

- Reduce energy loss
- Realize a sustainable society using natural energy
- Provide safety and comfort

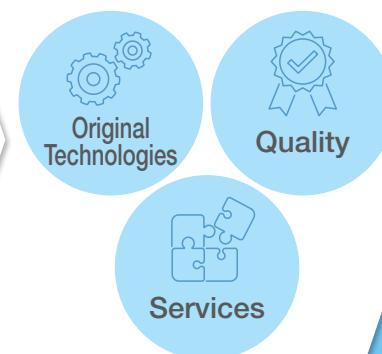
Form management systems /corporate organization which are essential for NTN, as a global company
(Reduce negative impacts)

- Respond to climate change
- Resource recycling and pollution prevention
- Improve the reliability of products and services (Quality assurance, stable supply)
- Procurement activities with an emphasis on the environment and society
- Respect for human rights
- Promote safety and health
- Human resource development
- Promote diversity
- Thorough compliance
- Strengthen governance

Management Capital

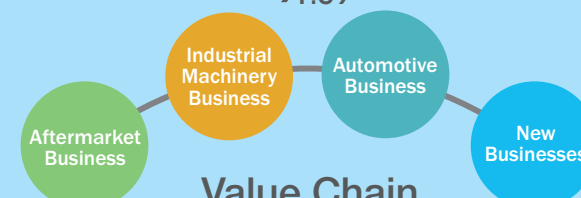
Financial Capital	Shareholders' equity	197.9 billion yen
	Interest-bearing debt	394.0 billion yen
	Cash and cash equivalents	121.5 billion yen
Human Capital	Number of employees (consolidated)	23,383
	Percentage of overseas employees	63%
Manufacturing Capital	Manufacturing bases	70 bases in 14 countries
	Ratio of overseas production	51%
Intellectual Capital	Number of patents for which reward was paid	129
	R&D bases	9 bases in 4 countries
Social and Relationship Capital	Customer satisfaction survey	113 companies
	Excellent + Good	88%
Natural Capital	Energy consumption	6,623 T.J/year
	Water consumption	2,715 thousand m ³

NTN's Strengths → P.27

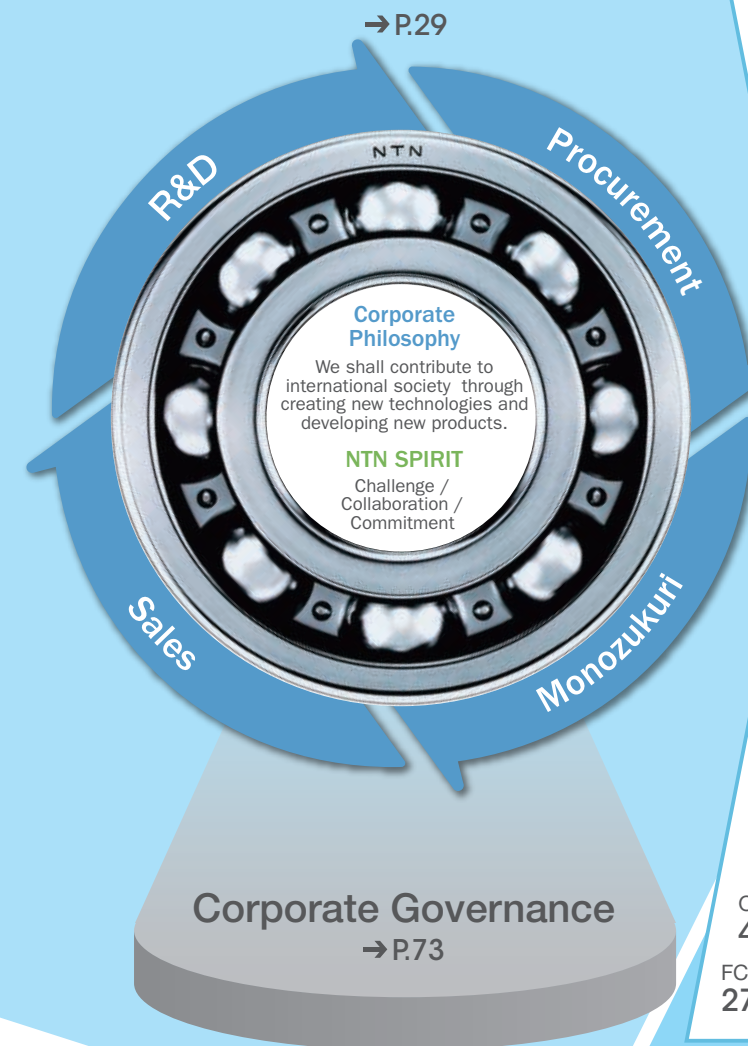


Contribute to solving social issues

Business Activities → P.39



Value Chain → P.29



Output

Environment-contributing products
S to B-eco **55.9%**



High performance products for EV/electrification

No.1 in Japan in terms of the number of wind turbines monitored

New products utilizing original technologies (i-WRIST™, microscopic coating device, green energy products)



Performance Target
(Target for Fiscal Year Ending March 31, 2024)

Net sales **700.0** billion yen or more
Operating income **42.0** billion yen or more (6% or more)
FCF **27.0** billion yen or more

Outcome

Make the world NAMERAKA

Contribute to CO₂ reduction from environment-contributing products 1,398 thousand tons/year

Contribute to popularization of the next generation mobility

Contribute to spread of wind turbines

Contribute to disaster prevention/mitigation
Provide safety/security in the event of disaster

Contribute to progress of labor saving and development of regenerative medicine

Realization of a NAMERAKA Society

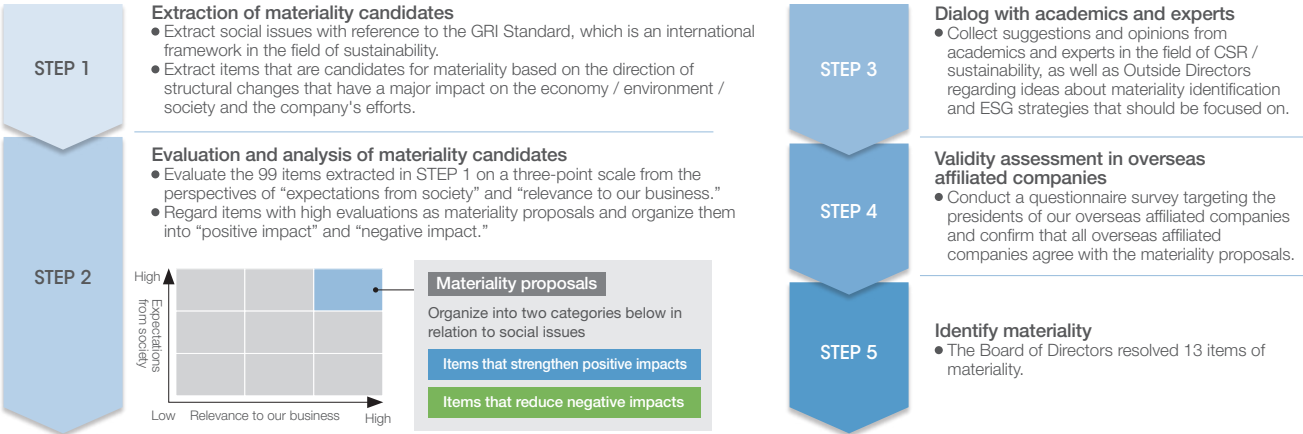
Risks and Opportunities Surrounding NTN → P.23

- Response to paradigm shift
- Response to environmental issues
- Changes in demographics
- Globalization of the business

In March 2015, we signed the United Nations Global Compact, which is a global framework for the international community to achieve sustainable growth, and we are aiming to realize the SDGs. In December 2020, we identified 13 items of materiality that our group should prioritize toward the realization of the SDGs. The materiality is linked to the two perspectives of “Contribute to society through creation of original technologies” and “Form management systems / corporate organization which are essential for NTN, as a global company” set forth in our corporate philosophy. The former is to meet the expectations of society through our products and services, and the latter is the foundation to support ESG management. In the fiscal year ended March 31, 2022, we established measures and KPIs for each materiality and are working to achieve these goals. These initiatives have been reported to the Board of Directors based on consideration by the Sustainability Committee, which is organized across departments.



Identification process







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

Materiality		Related SDGs	KPIs and targets for the fiscal year ending March 31, 2023	Detail page
Environment	Reduce energy loss	7 Sustainable Energy, 9 Industry, Innovation and Infrastructure, 12 Responsible Consumption and Production, 13 Climate Action	● Development related to low friction, miniaturization and weight reduction of products for automobiles and industrial machinery ➡ Completion of development themes ● Development related to module products for EVs and electrification ➡ Completion of development themes	➡ P.56
	Realize a sustainable society using natural energy	7 Sustainable Energy, 13 Climate Action	● Development related to products and services that contribute to the stable operation of wind turbines ➡ Completion of development themes	➡ P.58
Social	Provide safety and comfort	9 Industry, Innovation and Infrastructure, 11 Sustainable Cities and Communities	● Development related to robot-related modules ➡ Completion of development themes ● Raise awareness of independent power supply units and implement proposal activities for disaster mitigation and disaster prevention	➡ P.63





Form management systems / corporate organization which are essential for NTN, as a global company (Reduce negative impacts)

Materiality		Related SDGs	KPIs and targets for the fiscal year ending March 31, 2023	Detail page
Environment	Respond to climate change	13 Climate Action	● Reduce CO2 emissions in business activities (Scope 1 and 2) ➡ 50% reduction by the fiscal year 2030 (compared to the fiscal year 2018) ● Reduce CO2 emissions in business activities (Scope 1 and 2) ➡ Achieve carbon neutrality by the fiscal year 2035 ● Reduce CO2 emissions in business activities (Scope 3) ➡ Achieve carbon neutrality by the fiscal year 2050	➡ P.59
	Resource recycling and pollution prevention	12 Responsible Consumption and Production, 14 Life Below Water	● Water consumption intensity ➡ 4.30 m³/million yen (Japan) 3.14 m³/million yen (Overseas) ● Waste generation intensity ➡ 164 kg/million yen (Japan) 279.4 kg/million yen (Overseas) ● Recycling rate ➡ 97.9% (Japan) 96.9% (Overseas)	➡ P.64
Social	Improve the reliability of products and services (Quality assurance, stable supply)	12 Responsible Consumption and Production	● Maintain high level of customer satisfaction ➡ More than 90% of responses for “Excellent” and “Good” ● Maintain 100% certification for quality management systems (ISO9001/IATF16949) *Applies to domestic and overseas consolidated manufacturing subsidiaries (excluding bases that have not started mass production). ● Number of participants in specialized quality education courses ➡ 100 or more ● Progress in restructuring the domestic core systems [1] Sales and logistics, financial accounting, human resources and salaries, and technology areas ➡ Introduction completed as of the fiscal year ended March 31, 2022 [2] Production area ➡ Introducing by site (completed at all sites in March 2024)	➡ P.65
	Procurement activities with an emphasis on environment and society	10 Reduced Inequalities, 13 Climate Action	● Conduct CSR questionnaires for suppliers continuously and maintain and improve achievement level of results	➡ P.66
	Respect for human rights	10 Reduced Inequalities	● Analyze and evaluate the results of questionnaires of overseas affiliates ● Survey on the situation of foreign workers working in Japan (Monitoring)	➡ P.67
	Promote safety and health	8 Decent Work and Economic Growth	● Operate occupational safety and health management system continuously ➡ 6 domestic manufacturing affiliates have acquired GSC certification (as of March 2022, 2 companies have acquired certification) ● Maintain “White 500” certification for Health and Productivity Management Organization (Large enterprise category) ● Achievement of the annual plan of the Risk Survey targeting manufacturing sites ➡ 100%	➡ P.69
	Human resource development	8 Decent Work and Economic Growth	● Number of participants in “NTN Next Leader Program” ➡ 50 ● Holding of “NTN PROUD AWARD,” as ESG Corporate Award	➡ P.70、72
	Promote diversity	5 Gender Equality	● Ratio of female managers ➡ 9% for NTN (target for the fiscal year ending March 31, 2024) ● Ratio of male childcare leave acquisition ➡ 30% (target for December 2024)	➡ P.71
	Thorough compliance		● Annual number of Compliance Committee meetings held ➡ 2 ● Helpline recognition level in survey of compliance awareness ➡ 85% or more	➡ P.81
Governance	Strengthen governance		● Assessment of effectiveness of the Board of Directors and improvement	➡ P.75

NTN Group views the global trend of carbon neutrality (environmental impact reduction and decarbonization), the accelerating electrification to achieve the carbon neutral goal, and a business environment facing labor shortages and human rights issues from the perspectives of “Response to paradigm shift,” “Response to environmental issues,” “Changes in demographics,” and “Globalization of the business.” We will contribute to solving social issues while continually growing through our business activities by implementing countermeasures in line with the materiality of anticipated risks and opportunities.


NTN's Business Environment		Risks for the Company		Opportunities for the Company	
<div>Response to paradigm shift</div> 	Spread of next-generation mobility	<ul style="list-style-type: none">● Decrease in the total number of bearings used per unit● Demand for higher performance products such as lighter weight products● Reorganization of the automotive industry		<ul style="list-style-type: none">● Expansion of sales channels due to entry of new EV manufacturers● Expanding sales opportunities for driveshafts and hub bearings that support not only gasoline-powered vehicles and HEVs but also axle/drivetrain of EVs● Increase in ASP (average sales price) due to size-up of driveshafts corresponding to the motor's output characteristics● Using driveshafts' patented technologies to propose products that are smaller and lighter● Growing demand for high performance products for EVs● A possibility of growth in demand for parts replacement as car sharing increases the operating rate of vehicles	
	Electrification of industrial machinery	<ul style="list-style-type: none">● Reduced use of bearings due to electrification of internal combustion and hydraulic equipment		<ul style="list-style-type: none">● Demand for high performance products such as higher efficiency products● Increasing demand for high value-added products such as bearings with built-in sensors	
	Spread of AI and IoT	<ul style="list-style-type: none">● Difficulty in securing digital talent, for which demand is increasing● Rationalization of distributor network● Securing of aftermarket demand using industrial IoT Platforms (PFs) (missed demand opportunities outside PFs)		<ul style="list-style-type: none">● Advances in equipment-related manpower saving● Rising demand for bearings with sensors● Growing demand for analysis and analytical technologies● Development of new fields● Introduction of smart factories in the company	
	Spread of infectious diseases (COVID-19)	<ul style="list-style-type: none">● Decrease in scale of sales due to economic stagnation● Crisis of business continuity● Damage to employees' health and safety	<ul style="list-style-type: none">● Shutdown of business activities due to the spread of infectious diseases within the workplace● Disconnection of supply chain	<ul style="list-style-type: none">● Growing demand for manpower-saving technologies● Utilizing microscopic coating technologies for drug discovery	
<div>Response to environmental issues</div> 	Reduction in CO2 emissions	<ul style="list-style-type: none">● Rising procurement and energy costs● Decline in product needs due to the declining usage of general-purpose machinery● Requirements for carbon neutrality in business activities	<ul style="list-style-type: none">● Suspension of dealing with customers and deterioration of corporate image in the event of failure to respond to the demands of society	<ul style="list-style-type: none">● Increasing demand for wind turbines, including offshore ones● Increasing demand for railways● Increasing demand for green energy products● Increasing needs for improvement of fuel efficiency (electricity consumption efficiency)● Expansion of next-generation mobility (EVs, hydrogen-related)	
	Requests for energy-saving machinery	<ul style="list-style-type: none">● Decrease in the number of parts where bearings are used due to changes in the energy transmission type and structure of machines● Establishment of a new mechanical structure that does not require bearings		<ul style="list-style-type: none">● Increasing demand for energy-saving products● Responding to new needs	
	Reduction in environmental impact	<ul style="list-style-type: none">● Decrease in corporate image/ESG rating when environmental impact cannot be reduced● Cost increase due to incurrence of costs by suppliers and limitation on suppliers that can meet environmental standards		<ul style="list-style-type: none">● Development of new customers through compliance with advanced environmental and customers' standards● Increasing demand for high-quality, long operating life products● Promotion of environment-friendly business activities● Pursuit of circular economy	
	Response to natural disasters	<ul style="list-style-type: none">● Shutdown due to a disaster● Spillage of oil, chemical substances, etc. caused by natural disasters● Disconnection of supply chain		<ul style="list-style-type: none">● Increasing demand for emergency power source● Expansion of partnerships	
<div>Changes in demographics</div> 	Medium- to long-term labor shortage	<ul style="list-style-type: none">● Impact of a human-dependent production system on stability of operations		<ul style="list-style-type: none">● Accelerating labor saving and automation of production lines	
	Growth of emerging countries	<ul style="list-style-type: none">● Entry of emerging manufacturers● Soaring procurement prices due to the entry of competitors● Shortage of limited materials and resources		<ul style="list-style-type: none">● Expansion of sales opportunities due to increasing demand● Increasing demand for new driveshafts due to transition to front-wheel drive (FF) vehicles● Increasing demand for high performance products that meet environmental regulations	
	Issue of business succession	<ul style="list-style-type: none">● Suppliers and sales distributor going out of business		<ul style="list-style-type: none">● Start of business with new suppliers	
<div>Globalization of the business</div> 	Trade friction and tariffs	<ul style="list-style-type: none">● Sluggish global demand● Disconnection of supply chain caused by dependence on one country (China risk, etc.)	<ul style="list-style-type: none">● Downward pressure on profits due to higher tariff costs● Rapid exchange-rate fluctuations	<ul style="list-style-type: none">● Expanding opportunities to supply products and services utilizing global networks	
	Prevention of child labor (human rights)	<ul style="list-style-type: none">● Stopping the supply of parts● Suspension of dealing with customers and deterioration of corporate image in the event of failure to respond to human rights issues		<ul style="list-style-type: none">● Improvement of corporate image through active response to human rights issues	
	Response to conflict minerals	<ul style="list-style-type: none">● Deterioration of quality● Suspension of dealing with customers and deterioration of corporate image in the event of failure to respond to conflict minerals issues		<ul style="list-style-type: none">● Improvement of corporate image through active response	
	Rise of low-cost products	<ul style="list-style-type: none">● Intensified price competition due to aggressive sales by emerging manufacturers	<ul style="list-style-type: none">● Loss of sales opportunities● Loss of brand value due to lower prices	<ul style="list-style-type: none">● Growing demand for high performance, highly functional products due to lower quality of products on the market● Demonstrating competitive advantage through differentiation of products and services	


Materiality			
Contribute to society through creation of original technologies (Strengthen positive impacts)		Form management systems /corporate organization which are essential for NTN, as a global company (Reduce negative impacts)	
1 Reduce energy loss	4 Respond to climate change	7 Procurement activities with an emphasis on the environment and society	10 Human resource development
2 Realize a sustainable society using natural energy	5 Resource recycling and pollution prevention	8 Respect for human rights	11 Promote diversity
3 Provide safety and comfort	6 Improve the reliability of products and services (Quality assurance, stable supply)	9 Promote safety and health	12 Thorough compliance
			13 Strengthen governance


NTN's Business Environment		Main Measures			Related Materiality
<div>Response to paradigm shift</div> 	Spread of next-generation mobility	<ul style="list-style-type: none">● Provide lighter-weight, higher efficiency driveshafts and low friction hub bearings● Provide next-generation mobility modules for EVs● Concentrate production of high performance products for EVs (a new plant in Wakayama) <ul style="list-style-type: none">● Develop hydrogen-related products● Promote production reform and reorganization aimed at improving productivity● Strengthen the automotive aftermarket business			1 2 3 6
	Electrification of industrial machinery	<ul style="list-style-type: none">● Strengthen development of products for electrification and high value-added products● Provide next-generation mobility modules for industrial machinery			1
	Spread of AI and IoT	<ul style="list-style-type: none">● Provide service solutions through CMS technology, etc.● Develop service-oriented businesses that lead to product sales and transform into new business formats● Strengthen CAE analysis technology● Develop "talking bearings" (= use of sensors for bearings)● Provide robot-related modules such as i-WRIST™ in response to labor-saving issues <ul style="list-style-type: none">● E-commerce based on the new IT core system● Realization of smart factories, including a new plant in Wakayama● Strengthen external collaboration			2 3
	Spread of infectious diseases (COVID-19)	<ul style="list-style-type: none">● Life science-related R&D centered on microscopic coating technology● Provide robot-related modules such as i-WRIST™ in response to labor-saving issues● Promote the work style reform			3 9 10
<div>Response to environmental issues</div> 	Reduction in CO2 emissions	<ul style="list-style-type: none">● Increase sales of large bearings and CMSs for wind turbines● Increase sales for rolling stock● Expand sales of green energy products● Promote development of environment-contributing products● Promote use of energy-saving production equipment● Use renewable energy <ul style="list-style-type: none">● Develop lighter-weight, higher efficiency driveshafts and low friction hub bearings● Provide next-generation mobility modules● Develop hydrogen-related products			1 2 4
	Requests for energy-saving machinery	<ul style="list-style-type: none">● Provide compact, lightweight and low-torque products● Product development utilizing original technologies			1
	Reduction in environmental impact	<ul style="list-style-type: none">● Selection of business partners that can comply with green procurement and CSR procurement standards● Reduce environmental impact in manufacturing processes (conserve water, increase the recycling rate, reduce the use of hazardous materials, etc.)● Develop and provide long operating life products● Strict control of environmentally hazardous substances contained in products● Expand bearing refurbish business and MRO business			5 6 7
	Response to natural disasters	<ul style="list-style-type: none">● Formulation of BCPs and BCP drills at the NTN Group● Provide independent power supply utilizing renewable energy-based power generation and storage technologies			2 3 9
<div>Changes in demographics</div> 	Medium- to long-term labor shortage	<ul style="list-style-type: none">● Provide robot-related modules such as i-WRIST™ in response to labor-saving issues● Realize smart factories, including a new plant in Wakayama● Promote and maximize the diversity of employees● Promoting production reform and reorganization● Promote the work style reform			3 6 9 10 11
	Growth of emerging countries	<ul style="list-style-type: none">● Stable supply of basic products● Global production supporting optimal supply● Realize the best mix of global and local procurement			6
	Issue of business succession	<ul style="list-style-type: none">● Support business continuity through dialog with suppliers● Develop new business partners● Reorganize suppliers and shorten supply chain			6 7
<div>Globalization of the business</div> 	Trade friction and tariffs	<ul style="list-style-type: none">● Realize the best mix of global and local procurement through variable cost reformation			6
	Prevention of child labor (human rights)	<ul style="list-style-type: none">● Promote human rights due diligence● Globalization of compliance● Implement various training programs in compliance with laws and regulations in each region● Start business with new suppliers● Acquire new human resources			6 7 8 12
	Response to conflict minerals	<ul style="list-style-type: none">● Promote human rights due diligence● Implement CSR questionnaire surveys of suppliers● Respond to conflict minerals surveys conducted by customers● Stable supply of adapted products			6 7 8
	Rise of low-cost products	<ul style="list-style-type: none">● Expand product lineup and inventory● Develop markets for the aftermarket business● Promote development of service-oriented businesses● Active outsourcing of general-purpose products● Integrated sales strategy in aftermarket and industrial machinery businesses● Differentiation by services			6


By investing management capital developed over more than 100 years, NTN has strengthened original technologies, quality and services that lead to future growth. NTN develops the strengths to each business and conducts business activities that meet the needs globally.


Invested Capital


- 


Number of patents for which reward was paid: 129
Enhancing correspondence education and training systems for technological human resource development
- 


R&D bases: 9 bases in 4 countries
Global structure supporting high technological capabilities
- 


R&D expenditures: 17.4 billion yen
Ratio of R&D expenditures to sales: 2.9%
(Average for the last five years)
Investment in R&D for sustainable growth
- 


Number of employees (consolidated): 23,383
- 

Manufacturing bases: 70 in 14 countries
•The Global QC Circle Convention held for the first time on web in the fiscal year ended March 31, 2022
•The TQM Convention held by connecting to each site remotely in the fiscal year ended March 31, 2022
- 

Energy consumption: 6,623TJ/year
Promotion of CO₂ emissions reduction and renewable energy introduction
- 


Capital expenditures: 19.8 billion yen
Manufacturing process to maintain and improve quality
- 

Customer satisfaction survey: 113 companies, Excellent + Good: 88%
Number of visits with technical service units: 143 (+16 from the previous year)
Number of aftermarket web seminars: 239 in the fiscal year ended March 31, 2022
- 

Production bases: 70 in 14 countries
In addition to manufacturing globally, FIRST, a system for immediate delivery of general-purpose products, is in operation
- 

SG&A expenses: 99.1 billion yen
SG&A expenses to support highly satisfactory services


Three Strengths of NTN



Original technologies

Tribology technologies

- Our strengths in manufacturing technologies include heat treatment, precision machining, and precision measurement, which are indispensable for the manufacture of bearings, and we pursue tribology technologies through R&D of bearings
- Not only rolling bearings, but also a wide range of materials such as resins, sintered metals, and magnetic materials, as well as advanced technologies such as fluidic dynamic pressure type technology for the development of units and module products consisting of sliding bearings, and electrical and machine parts, and we market them as composite material products




Quality

Sensing technology

- Develop and provide products and the Multi Track Magnetic Ring equipped with a high resolution rotational sensor developed based on NTN-SNR's ASB® (Active Sensor Bearing), a global standard technology
- Develop monitoring services for large wind turbines by CMSs (Condition Monitoring System). Capture the top market share in Japan by providing enhanced support, as the number of installed units exceeds 200

Product quality


- High reliability demonstrated by the long-standing track record of developing the first quality control system that won the Deming Prize in the Japanese machinery industry and supplying it for life-supporting applications such as the Shinkansen and aerospace
- Acquired world-class market share for axle/drivetrain products that support safe driving of automobiles



Quality

Quality of human resources and work

- Human resource development programs to pass on know-how, such as the Global QC Circle Convention, NTN Technical Skills Competition, and TQM Convention
- Encourage employee to engage in ESG activities through the "NTN PROUD AWARD"



Services

Global network

- Provide products and services to customers from approximately 200 bases in 34 countries around the world
- Respond to market needs in various locations with R&D system in four regions

Problem-solving customer responsiveness

- No.1 domestic aftermarket share with the largest domestic distributor network
- Provide remote technical support services globally
- Contribute to solving all customer issues through detailed responses (From products to service-oriented (solutions))

Future Direction

- Differentiation through advances of cultivated technology, including low friction and diversification of functions of hub bearings, which have the No.1 global market share
 - Develop hydrogen-related and other products to achieve carbon neutrality
- Respond to new market needs of CASE such as autonomous driving and sharing
 - Develop and upgrade AI algorithm to predict residual life
 - Develop "talking bearings" with built-in sensors in the bearing to issue an alert for abnormalities
- Stable supply of high-performance products
 - Spread sophisticated quality control practices using IoT/AI to manufacturing divisions, including suppliers
- Strengthen the development of human resources who "think and act by themselves" to achieve workplace goals
 - The corporate philosophy is understood by all employees around the world
- Expand sales in the Middle East and Africa
- Provide advanced preventive maintenance services by using big data
 - Expand remote technical support services and on-line technical workshops for end-users

Development of Strengths in Each Business

Aftermarket business → P.39

Expanding services through hardware and software

In the aftermarket for all types of machinery, the need for maintenance services and solution businesses not for a single bearing but for the entire facility is expanding, thanks to the popularization of AI and IoT.

NTN has achieved the top aftermarket share in Japan through its leading distributor network and services, and has expanded its overseas network. In the future, we will expand our services by utilizing our expertise in sensing technology, etc. as well as digital technologies, thereby further capturing demand.

Industrial machinery business → P.41

Response to climate change

Introduction of renewable energy is expanding to achieve carbon neutrality and realize a decarbonized society.

NTN has a strong position in large bearings for main shafts of wind turbines, and has the largest market share for wind turbine's condition monitoring systems (CMS) in Japan. We also sell green energy products that utilize our proprietary blade technologies. We expect these products to grow along with the future growth of the market.

Responding to Robotization

At manufacturing sites, there is a growing demand for manpower savings and further efficiency improvements due to labor shortages.

NTN is contributing to labor saving and automation through the use of high value-added products such as bearings with built-in sensors and Multi Track Magnetic Ring in addition to Wrist Joint Module "i-WRIST™" that applies CVJ-technology. We expect sales of related products to expand in line with the growing demand for robotization.

Automotive business → P.43

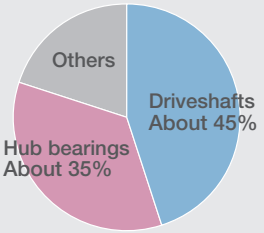
Responding to the shift to EVs

In the automotive market, as response to the environment is required, fuel efficiency and CO₂ emission regulations have been strengthened in various countries, and the government-driven adoption of EVs and electrification has been accelerating.

NTN boasts the world's No.1 market share for hub bearings, which support tire rotations, and the world's No.2 market share for driveshafts, which pass the rotations of engines and motors to tires. NTN has its strength in strong technological capabilities and overwhelming market share for axle/drivetrain products.

Driveshafts and hub bearings are our mainstay products, which account for approximately 80% of our net sales for automotive applications, and are essential not only for ICEV (internal combustion vehicles), but also for HEVs and EVs. Demand is expected to continue expanding in the future. We will ensure superiority in the marketplace by pursuing even lighter weight, higher efficiency, and lower friction, and by providing high performance products.

Composition of automotive sales

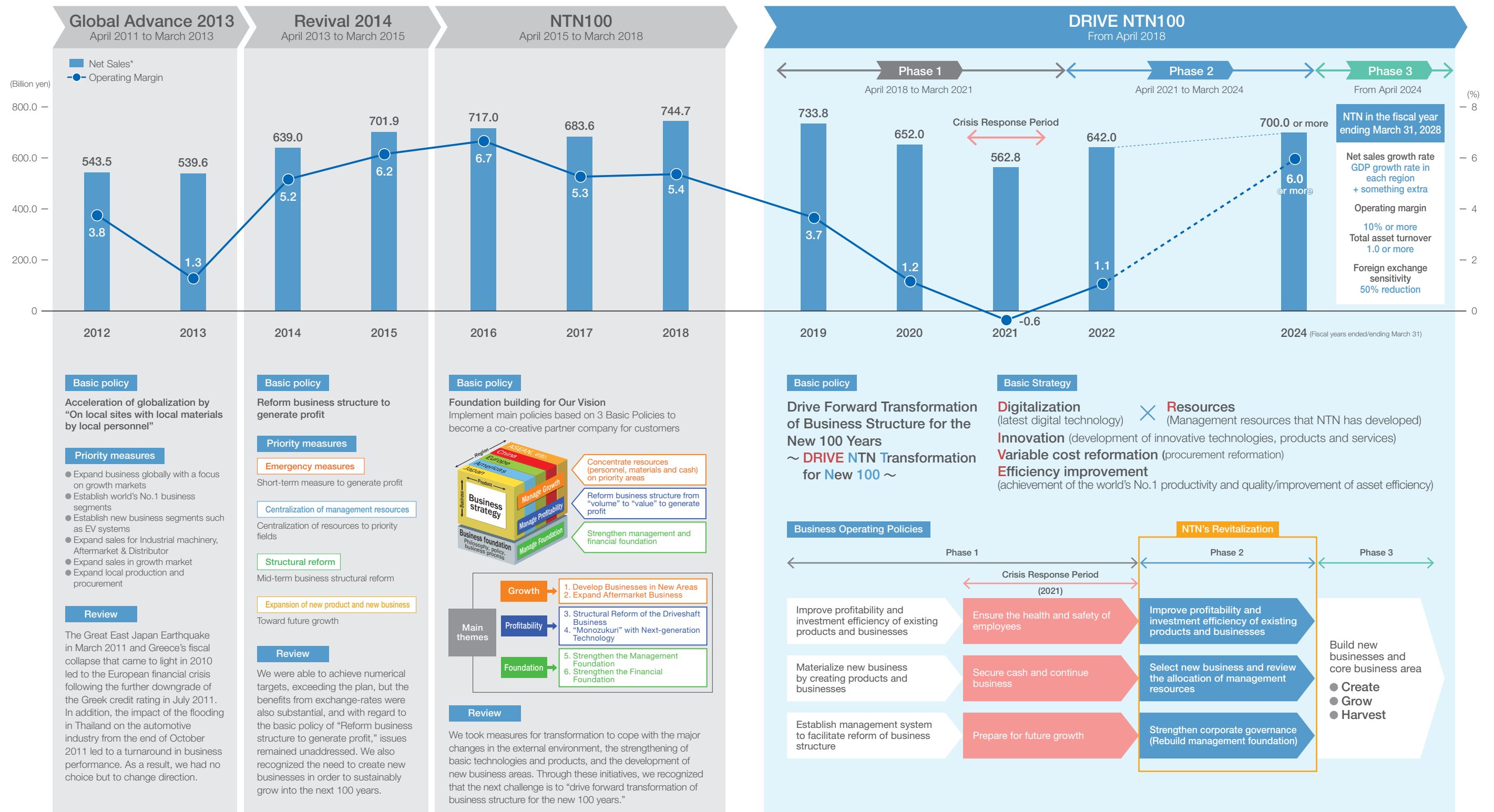


Category	Share
Driveshafts	About 45%
Hub bearings	About 35%
Others	

NTN Group is promoting initiatives in line with materiality for responding to SDGs by leveraging our strengths in each process of R&D, procurement, Monozukuri and sales. As we carry out our business activities based on our corporate philosophy of “We shall contribute to international society by creating new technologies and developing new products,” we create value in the value chain, leading to sustainable growth.



In 2018, when we celebrated our 100th anniversary, we launched the Medium-term Management Plan “DRIVE NTN100” to drive forward transformation of the business structure for the new 100 years. For the three years from the fiscal year ending March 2022 to the fiscal year ending March 2024, we are working on various measures as initiatives for the Medium-term Management Plan “DRIVE NTN100” Phase 2.



* “Loyalty,” which was previously included in “non-operating income,” has been changed to be included in “net sales” from the fiscal year ended March 31, 2021. The period for retroactive adjustment is after the fiscal year ended March 31, 2017, which is subjected to audit by an audit firm.

Net Sales and Operating Income Targets

Fiscal year ending March 31, 2024 (final year of Phase 2)

Net sales **700.0** billion yen or more

Target annual sales growth of 3% (over 3 years) based on net sales of 652.0 billion yen in the year ended March 31, 2020

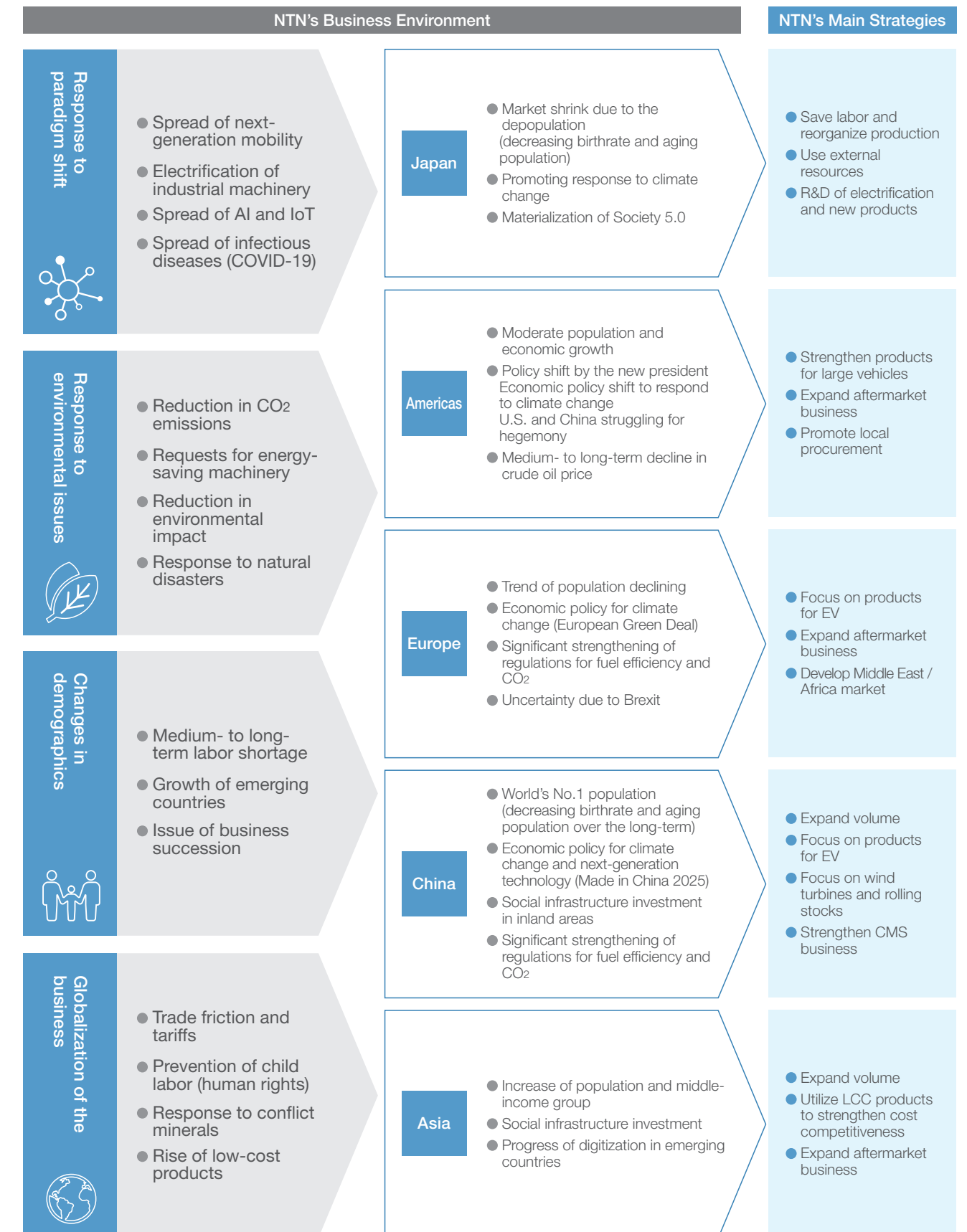
Operating income **42.0** billion yen or more
(operating margin of **6.0%** or more)

Other Management Indexes (Fiscal years ended /ending March 31)

DRIVE NTN100	Phase 1			Phase 2	
	2019	2020	2021	2022	2024 (Target)
Capital Expenditures (billion yen)	45.2	57.7	23.8	19.8	60.0 or less (3 years total)
Ner cashu flow (billion yen)	-22.4	-18.1	18.5	11.5	27.0 or more
Inventory Turnover Ratio (Times)	3.8	3.6	3.2	3.0	4.1
Equity to Capital Ratio	27.4%	20.6%	20.4% (23.4%)	23.1% (26.0%)	20% or more (23% or more)
Net D/E Ratio (Times)	1.2	1.9	1.6 (1.3)	1.4 (1.1)	1.5 or less (1.2 or less)
Return on Invested Capital (ROIC)	3.3%	1.0%	-0.4%	0.8%	5.0%
Exchange Rate Data	USD	¥110.9	¥108.7	¥106.0	¥112.3
	Euro	¥128.4	¥120.8	¥123.7	¥130.5

*1 Dividend: We aim to resume dividends from the interim dividend in the second year of Phase 2 (FY2022).

*2 The figures in () take into account a part of the subordinated bonds through public offering that is recognized as equity (50%).



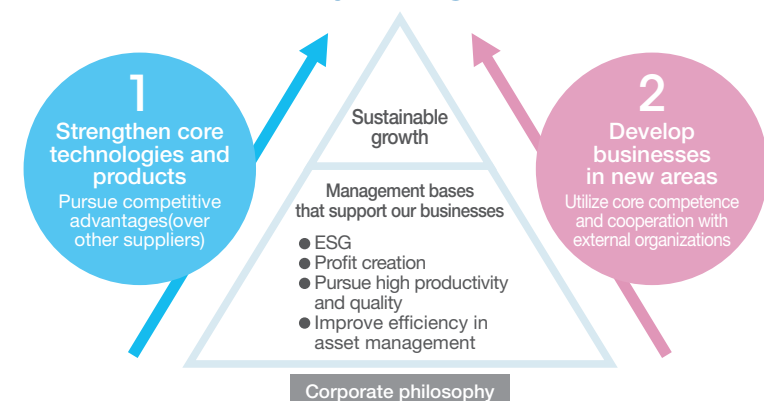
Target Areas to Invest R&D Resources

With the goal of contributing to the realization of a carbon neutral society, the Group is promoting R&D based on the two pillars: pursuing (evolving) the performance and functions of its rolling bearings, hub bearings, driveshafts, and other basic products as well as developing (exploring) core technologies that have been cultivated into new areas.

While actively utilizing external collaboration with NTN Next Generation Research Alliance Laboratory in Osaka University and other organizations, we will accelerate our contribution to the international society by developing new products and services for the following six fields in which we can leverage our core technologies, as outlined in our medium-term management plan “DRIVE NTN100” Phase 2.

Executive Officer CTO (Chief Technology Officer)

Masaki Egami

Our vision toward a new 100 years
10 year targets

We shall contribute to international society through creating new technologies and developing new products

“DRIVE NTN100” Phase 2

Input of R&D resources
into 6 target areas

Strategic direction for R&D

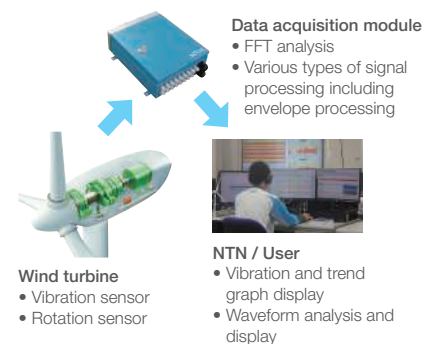
Carbon neutrality
(Environmental impact
reduction and
decarbonization)

Pursuit of safety and comfort

1 Service/solution

In the wind power generation field, we will leverage the technology of a maintenance company specializing in wind power generation to extend from condition monitoring services around bearings using Wind Doctor™ to maintenance services. We contribute to the stable operation of wind power generation equipment by providing a one-stop service from facility condition monitoring to maintenance. In addition, we have developed a bearing diagnostic application compatible with Edgexcross™, an industrial IoT platform. This software collects data from sensors installed near the bearing to diagnose bearing abnormalities, and is expected to be used for predictive maintenance in all industries.

In the future, we will make further progress in AI analysis technology to enable prediction of the operating life of bearings.



4 Renewable energy-related

Regarding core products, main shaft bearings for wind turbines are becoming larger as wind turbines become larger. To meet the needs for stable operation of these wind turbines, we are developing asymmetrical spherical roller bearings for large wind turbines, aiming to improve their operating life under actual load distribution. In addition, as a countermeasure against wear caused by differential sliding unique to spherical roller bearings, DLC (diamond like carbon) coating with excellent wear resistance is formed on the roller surface to enhance bearing reliability.

We have developed and are selling N³ N-CUBE, which provides mobile power in the event of a natural disaster. In addition, we have developed and are selling N³ N-CUBE, which is equipped with a flush toilet and treatment tank, to be installed in parks and facilities short of a commercial power supply. We will contribute to the realization of a low-carbon society by marketing these green energy products.



5 Hydrogen-related

Hydrogen is drawing attention as a next-generation energy source, and many peripheral devices are being studied and developed. In addition to fuel cell vehicles (FCVs), we are promoting development of products used in infrastructure facilities such as hydrogen compression pumps. Mechanical parts used in hydrogen-related equipment are often used under special environments such as hydrogen exposure and high pressure, and higher reliability and durability are required.

We have developed a hydrogen embrittlement resistant bearing that has three times longer operating life than our standard bearings against the failure of bearings at an early stage caused by hydrogen by adopting a new steel material in which a large number of hard and fine metal compounds are dispersed on the surface of the bearing raceway and a newly developed special heat treatment technology.

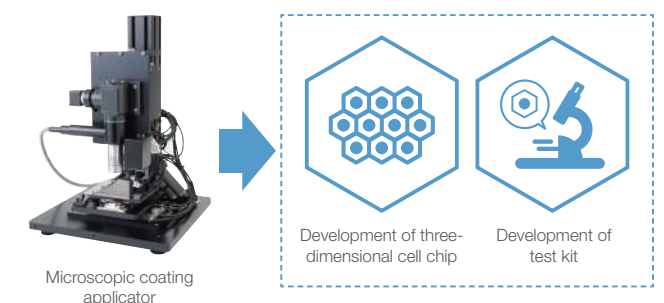
In addition, we aim to apply this technology to various infrastructure facilities required for the social implementation of hydrogen.



6 Life science-related

We are applying the technology of repair equipment to repair minute defects in liquid crystal panels and color filters to develop microscopic coating application equipment that can laminate high-viscosity fluids. As a part of these activities, we are developing the drug discovery support cell chip which features three-dimensional coating of human iPS-derived cells on the plate.

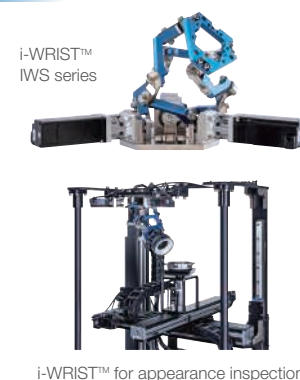
There is a possibility that it will be a substitute for animal experimentation using mice, etc., and the next-generation drug discovery is expected to become highly efficient.



2 Robot-related module

We market the i-WRIST™, a wrist joint module for robots that applies the joint of driveshafts, one of our core products. The i-WRIST™ is small, space-saving, and works the same way as a human wrist, also allowing high-speed movements. Until now, i-WRIST™ has been installed with cameras and dispensers and used in automated appearance inspection devices as well as automated coating devices for grease and adhesives. The ability of robots to perform tasks done by humans has resulted in stabilized appearance quality and shortened cycle time, which has been well received.

In the future, in addition to the introduction of i-WRIST™ series, we will propose small modular products compatible with next-generation robots and contribute to the further promotion of automation at production sites.



3 Next-generation mobility module

Responding to the automation of automobiles and realizing carbon neutrality are urgent tasks, and further energy saving and high functionality are required.

We have developed “High Speed Deep Groove Ball Bearings for EVs and HEVs” that are compatible with high-speed rotation of motors for downsized electric drive units. We have achieved a dmn value of 1.8 million, an indicator that expresses the rotational performance of bearings, and the products have already been used in the market. We have also developed Ra-sHUB, which controls the steering angles of the left and right rear wheels separately. By controlling the steering angle of the left and right rear wheels separately according to the steering angle of the front wheel and running information, the cornering performance and high-speed straight driving stability of the vehicle can be improved. At low speeds, the vehicle is able to have a small turning circle since the minimum turning radius can be reduced and the running resistance of the tires is restrained, contributing to energy savings in future automatic driving.

Going forward, we will leverage our core competencies to incorporate next-generation technologies and further collaborate with market technologies to develop products that are adapted to a carbon neutral society.



Rebuild Business Portfolio and Product Portfolio

We categorize NTN's main businesses into a "Creation sector," "Growth sector," and "Harvest sector" and concentrate management resources on these sectors. As to business portfolio, we focus on expansion of aftermarket business.

	Industrial machinery business	Aftermarket business	Automotive business
Creation sector Establish new areas for future growth	<ul style="list-style-type: none">Life sciences (drug discovery and regenerative medicine)Hydrogen energy marketExpand market for wrist joint robotsCondition Monitoring (CMS)	<ul style="list-style-type: none">Expand sales in the Middle East and AfricaDevelop "Talking bearing" and "Thinking bearing"	<ul style="list-style-type: none">Products adapting to electrification eHUB, sHUBElectric brake
Growth sector Expand businesses Concentrate resources	<ul style="list-style-type: none">Green energy productsRobot / gearboxWind turbines (ultra-large size bearing)Machine tools (European market)Rolling stock (Chinese market)	<ul style="list-style-type: none">From product sales business to service-oriented businessStrengthen MROBearing refurbishment businessFailure detection	<ul style="list-style-type: none">Products adapting to electrificationElectric module productsExisting products fitting EVBearing refurbishment businessLow friction, higher efficiency
Harvest sector Secure stable profit	<ul style="list-style-type: none">Improve profitability by enhancing cost competitivenessConstruction machinery (electrification and high-performance products)Agricultural machinery (sales expansion of CVJ for industrial machinery)Aerospace	<ul style="list-style-type: none">Secure saleable inventoryHighly competitive products (BU, etc.)Use of overseas production and external procurement	<ul style="list-style-type: none">Focus on the vehicle segment where NTN's strengths can be utilizedOptimize customers portfolioSecure volume in growth markets
	Reduce fixed cost and expand supply capacity by outsourcing manufacturing (breaking away from self-sufficiency) of standard products such as ball bearings		

Business composition ratio	Fiscal year ended March 31, 2022	Aftermarket business Industrial machinery business Automotive business	17% 20% 63%	Fiscal year ending March 31, 2031	Aftermarket business Industrial machinery business Automotive business	40% 60%
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"DRIVE NTN100" Phase 2 strategy

Aftermarket

→ P.39

Initiatives to be focused on during the three-year period (From the fiscal year ended March 31, 2022 to the fiscal year ending March 31, 2024)

- By sharing sales strategies across different types of businesses, concentrate resources on important industries
 - Strengthen organizational structure to improve supply capacity, service response, and profitability
- Strengthen e-commerce
 - Promote business development in the service-oriented business

One of the issues we face in expanding our aftermarket business is our low brand awareness abroad. To improve brand value, we need to enhance our competitiveness in aftermarket business from a variety of perspectives, including the promotion of business development in the service-oriented business, such as bearing refurbish services, remote technical support services, reinforcement of technical support such as on-line seminars, reinforcement of supplying capabilities by securing available stock for aftermarket, and reinforcement of our system and organization to focus on priority industries through integrated actions from OEM to aftermarket. Over the next three years, we will focus on these measures.

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 NTN Portable Vibroscope (In addition to sales of devices, 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 the ability to supply	Maintain available stock for aftermarket Prioritize production capacity for aftermarket (use of 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 distributors 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 Market










→ P.41

Initiatives to be focused on during the three-year period (From the fiscal year ended March 31, 2022 to the fiscal year ending March 31, 2024)

- Select target areas
 - 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

We will reorganize our business into the following 3 fields and restructure our business and product portfolios by throwing management resources in a concentrated manner.

- "Create sector": Establish new business areas for Wrist Joint Module "i-WRIST™", servicing solutions (CMSs) and hydrogen-energy
- "Grow sector": Focus on wind turbines and rolling stock in response to decarbonization trend to expand business and throw management resources in a concentrated manner
- "Harvest sector": Secure stable earnings from sales of products for construction machinery and agricultural machinery by adding more value and strengthen cost-competitiveness

2020	2021-2023			2024-	
Rebuild the revenue base				VS FY2020	Growth strategy to respond to market change
Creation sector	Robot-related business (i-WRIST™)		Gain large customers Promote acquisition of overseas certified standard	↑↑↑	Expand overseas business Develop new applications and derivatives
	Service / solution business (CMS)		Establish maintenance service for wind turbine bearings and overseas expansion	↑↑↑	Gain bearing demand by leveraging CMS technology
	Gearbox		Develop RV gearbox bearing Expand sales of elastic bearings for wave motion gears	↑↑↑	Expand sales in China (Follow changes in the industry)
Growth sector	Wind turbine		Focus on capturing demand in China Drive sales and profit increase	↑↑↑	Improve profitability by capturing aftermarket demand Expand production capacity
	Machine tools		Expand sales of machine tools in China and India Utilize products manufactured in a plant in Germany to sell them on the European market	↑↑	Expand CMS needs due to spread of IoT Expand sales of bearings with sensors
	Rolling stock		Promote drastic cost reduction measures including local production in China	↑↑	Capture demand for railway network expansion and subway in China
Harvest sector	Construction machinery		Utilize competitive materials and components Adapt to electrification, shift to high function products	↑	Follow changes in social structure and infrastructure
	Agricultural machinery		Expand sales of high value-added products Expand sales of CVJ for industrial machinery	↑	Make sure to capture demand for electrification
	Aerospace		Withdraw from or reduce unprofitable projects Improve profitability by concentrating production in NTN-SNR (France)	➡	Earn profits in MRO market Expand sales for space industry

Automotive Market

→ P.43

Initiatives to be focused on during the three-year period (From the fiscal year ended March 31, 2022 to the fiscal year ending March 31, 2024)

1 Strengthen the profit structure

- Promote variable cost reduction through procurement reformation
- Reduce manufacturing fixed cost by reforming Monozukuri and improving productivity
- Reduce fixed cost by utilizing RPAs and improving the organizational structure and systems
- Thorough selling price management, reduction and withdrawal from unprofitable areas (regions and products)

2 Optimize portfolio to support sustainable growth

- Develop high performance and high value-added products responding to the environment, EVs, and electrification
- Expand sales of electrification products
- Order winning activities aimed at portfolio optimization and concentrated investment in focus segments

2020	2021-2023	2024-
	Promote earning improvement NOT relying on the merit of scale	Strategy for sustainable growth
Basic products	Driveshafts (CVJ) Axle / hub bearings Bearings	Shift to large-sized SUV/PUP and EVs Secure volume in growth markets Develop differentiated high value-added products Realign portfolio based on customers and vehicle segments Invest resources in high performance bearings through the selection Expand sales of electric oil pumps Commercialize eHUB/ sHUB Commercialize electric brakes
New areas (Electrification)	Increase production of gearboxes for electric hydraulic brakes Promote cost reduction (Shorten assembly CT / Promote production in China / Use Chinese materials) Develop new products for integrated electrical modules	Flat sales, Toward high performance products Increase volume Grow together

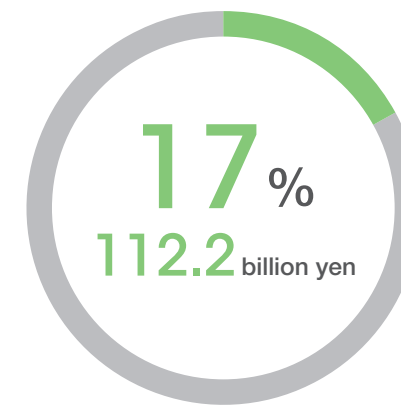
Aftermarket

We provide our customers with products and services that meet the maintenance needs of industrial machinery and automobiles. In industrial aftermarket applications, we supply bearings for repair used in equipment such as mining, paper making, steel, cement, and food, in addition to bearings for general machinery. In automotive aftermarket applications, we offer a product lineup of repair parts and auto parts kits composed of bearings and peripheral components to meet customer demands. We also provide services such as “Remote Technical Support Services” to provide quick technical support even in the event of disasters such as heavy rain and earthquakes, and in the situation of travel restrictions during the coronavirus pandemic, and “NTN Aftermarket Academy” online to enable customers to acquire bearing knowledge. We also aim to realize a “NAMERAKA Society” by providing products and services that meet the needs of our customers through various proposals, such as condition monitoring of equipment using NTN Portable Vibroscope, and repair and refurbishment of bearings, thereby contributing to the improvement of productivity and stable operation of equipment.

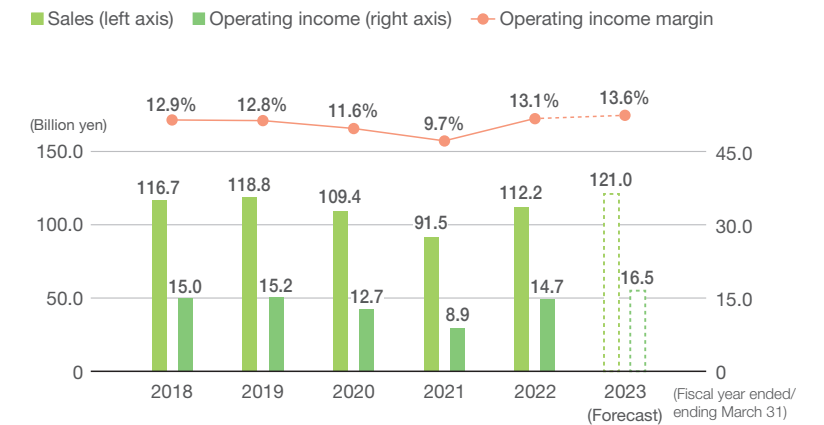
Executive Officer **Etsu Harima**



■ Percentage of total sales



■ Trend in business performance



Business environment

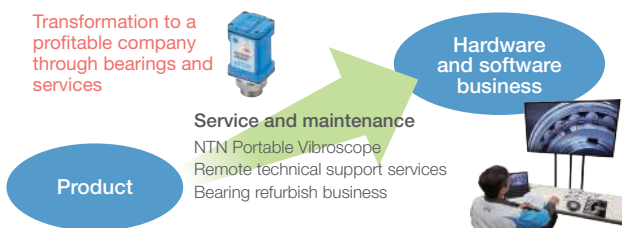
While the spread of the COVID-19 resulted in an increase in stay-at-home consumption, transport volume has increased worldwide with the revitalization of economic activities stemming from the pandemic. In addition to the original lack of containers, ports and harbors are becoming congested, and the delay in sea transport is becoming the norm. As a result, not only are transportation costs soaring significantly, but the prices of various products and raw materials are also soaring, raising concerns about adverse effects on the economy. The future of the Russian invasion of Ukraine is also uncertain.

The business environment is changing daily, but stable supply is important in the aftermarket business, and we are focusing on maintaining standing inventories and strengthening our systems for immediate delivery. In terms of systems, last year we launched FIRST, a system for the immediate delivery of popular products. We are

also utilizing products, parts, and materials manufactured overseas to meet active demand. We will promote price increase activities in response to steep rises in steel prices, logistics costs, and other costs that we cannot absorb in-house.

One of the issues facing our aftermarket business is the low level of brand recognition in overseas markets. Stable supply alone is insufficient to raise brand awareness, and it is necessary to enhance the appeal of the NTN brand and appeal to customers from a variety of perspectives, including the development of a high-quality, competitive product lineup, provision of customer-oriented and fine-tuned technical services, and countermeasures against imitations. As the commoditization of bearings progresses and the market becomes increasingly borderless, competition with other companies is becoming fiercer every year. We aim to leverage our strengths to improve our brand power and expand our market share.

brand power and increase sales and profitability in the aftermarket business by leveraging our accumulated know-how such as measuring the operating data of industrial machinery and facilities using a newly developed “talking bearing™” with built-in sensors and generators to provide services that meet customer needs.



Results for the fiscal year ended March 31, 2022 and forecast for the fiscal year ending March 31, 2023

In the fiscal year ended March 31, 2022, sales increased in each region due to the revitalization of economic activities following the coronavirus pandemic. In addition to the rapid recovery in demand, a combination of global supply chain disruptions made stable supply a challenge. In Europe, sales in the fiscal year ending March 31, 2022 recovered to 112.2 billion yen, which was higher than before the pandemic (the fiscal year ended March 31, 2020). Operating income also increased compared to the previous fiscal year due to an increase in sales volume and the promotion of price increase activities.

In the fiscal year ending March 31, 2023, we plan

to have 121 billion yen in sales, which is 108% over the previous fiscal year. The outlook for the COVID-19 remains uncertain and there are concerns about the negative impact on sales and profits in Europe due to the prolonged situation in Ukraine. However, demand remains firm, particularly for industrial machinery aftermarket applications, and securing supply is a challenge. In addition, costs have soared recently due to the tightening of the global supply chain, and we will continue to promote price increase activities in areas that cannot be absorbed by ourselves, such as steel prices and logistics costs.

Changes in the market environment and NTN's strengths

Changes in the market environment

- Global supply chain tightening and soaring costs due to the COVID-19 and Ukraine situations, etc.
- Strong brand power of European and U.S. competitors in overseas aftermarket
- Commoditization of general-purpose bearings, rise of LCC products, borderless market, sophistication of imitation products
- Increase in the role customers expect of bearing manufacturers (providing services as well as products)

NTN's strengths

- Domestic and overseas distributor networks and strong long-term collaboration with major distributors
- Wide lineup of products
- Technical capabilities and knowledge accumulated through our extensive experience in delivering products to OEMs
- Provision of detailed technical services

Our Vision

Transformation to a profitable company through bearings and services

The market environment is changing day by day, and our ability to respond flexibly to new needs is required for sustainable growth. In the bearing aftermarket business, the role that customers need from suppliers is expanding, and in addition to the needs and services of conventional products, such as high quality and performance, a wide lineup, quick delivery response, and quick delivery

systems, in the repair of equipment such as paper and steel, it is sometimes required for bearing suppliers to provide services and maintenance for all equipment, including peripheral parts. We also provide condition monitoring using NTN Portable Vibroscope, remote technical support services, and repair and refurbishment services for bearings. In addition, we aim to improve

TOPICS

Initiatives to strengthen supply capabilities

In the aftermarket business, which contributes to improving the productivity and stable operation of customer equipment, it is important to provide a stable supply of necessary products. We aim to create a system that is not significantly affected by fluctuations in market demand by maintaining standing inventories of popular products and building an immediate delivery system.

As one to realize a stable supply, as well as focusing on accumulating stock of popular products, last year we launched FIRST, a system for the immediate delivery of popular products. We will continue to increase the product range under the system and minimize lost sales opportunities while expanding the application range of the system.

We are also actively utilizing overseas production bases to supplement our supply capabilities. In the

future, in regards to radial ball bearings, centered on standard products, we will start outsourcing production.

As for parts and materials procured domestically, there are cases in which procurement cannot be carried out as in the past due to supply chain disruptions and supplier labor shortages. However, we will respond to current rising demand and increased costs by utilizing parts and materials on a timely basis, including procurement from overseas.

For products in which demand is expected to increase further in the future, we decided to add a new line of radial ball bearings to our domestic production sites in order to boost supply capacity for the aftermarket business.

Through these measures, we will strive to capture global demand and expand sales and profits.



Industrial Machinery Market

We are responding to customer demand for long operating life, improved loading capacity, and higher speed, all of which are required by all types of industrial machinery, with the world's highest standard new-generation bearings, the ULTAGE Series. Bearings with even lower torque and compact and lighter weight will also reduce the environmental burden in various fields of industrial machinery.

Furthermore, we will promote modularization and advanced intelligence by deepening bearing technology through the integration of sensors and precision equipment technology, and create new products and services by utilizing abnormality detection technology, condition monitoring system (CMS) and IoT. Specifically, we will promote sales expansion of Wind Doctor™ wind turbine condition monitoring system, and i-WRIST™, a wrist joint module that contributes to automation and labor saving at manufacturing sites. By providing these products and services, we will contribute to industry development and the creation of a sustainable society.

Executive Officer **Etsu Harima**

Business environment

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

Against the backdrop of trends toward the realization of a carbon-free society, the demand for social infrastructures for wind turbines and rolling stock will continue to grow, and as the working population declines, the demand for robot related products that realize labor saving will expand, and the need for automated operation of machinery and condition monitoring systems will increase.

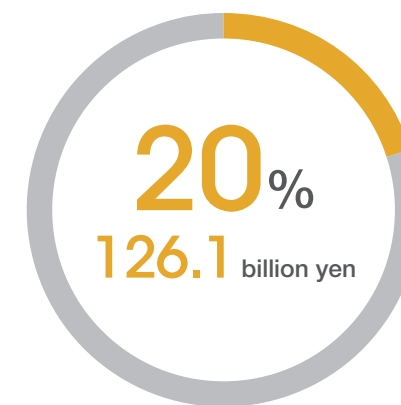
Under this environment, NTN will step away from competition in the field of low-priced products and focus on high-value-added products based on our proprietary technologies such as i-WRIST™, magnetic rings, and sensor bearings, in order to meet customer needs in line with social structure changes.

Market trends	Initiatives that leverage NTN's strengths
Expansion of electrification in various industrial machinery	Electrification compatibility (high-performance products) <ul style="list-style-type: none"> ● Develop and introduce high-performance products that respond to the electrification of construction and agricultural machinery
Realization of a carbon-free society	Further strengthening of business for wind turbines <ul style="list-style-type: none"> ● Participation in Japan's offshore wind turbine project ● Increase production capacity and expand demand in China ● Establishment of CMS (hardware & software) business and commencement of overseas development
Expansion of sustainable transportation	Responding to changes in social infrastructure <ul style="list-style-type: none"> ● Railway: Expansion focused on the Chinese high-speed railway ● Hydrogen: Growth strategy for the next 10 years
Decrease in the workforce	Responding to the expansion of the robot market <ul style="list-style-type: none"> ● Gearboxes for robots ● Wrist Joint Module "i-WRIST™" ● Cultivating needs with robotics and sensing technologies

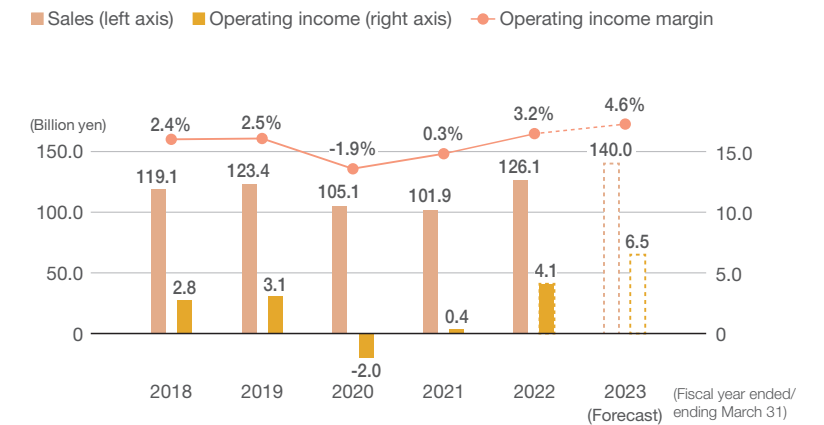
In market trends that transform with changes in social structure, we expect expansion of "electrification," "wind turbines," "sustainable transportation," and the "robot market." Taking advantage of NTN's strengths, in addition to developing and providing high-performance,

high-precision bearing products in these areas, NTN will also respond to customer needs by developing module products that integrate mechanical and electrical components, and adding services and maintenance businesses.

■ Percentage of total sales



■ Trend in business performance



Our Vision

To be a company that customers rely on most for its exceptional technological competence

We supply bearings to the industrial machinery market in a wide range of sizes, from miniature sizes of several millimeters in outer diameter used in electronic machinery to ultra-large sizes of several meters used in wind turbines. Based on this bearing technology, we will continue to be an indispensable company for our customers and support

the development of sustainable industry in the growth fields of rolling stock, which are expanding against the backdrop of changes in social infrastructure, construction machinery and agricultural machinery, which are facing the need for electrification, and wind turbines, which contribute toward carbon neutrality.

Results for the fiscal year ending March 31, 2022 and forecast for the fiscal year ending March 31, 2023

In the fiscal year ended March 31, 2022, demand for mining and the recovery in the construction market increased primarily for construction equipment in Japan and North America. In addition, sales increased for gearboxes in Japan behind expanding demand for industrial robots, and for agricultural machinery in North America and Europe, supported by continued strong demand for grain.

Meanwhile, sales decreased for rolling stock due to reduced passenger demand due to COVID-19 spreading again, and a reduction in wind turbines in China. As a

result, net sales were 126.1 billion yen. Operating income was 4.1 billion yen due to the effects of passing on the steel and raw material costs to selling prices and scaling down or withdrawing from unprofitable businesses.

Although the outlook for the fiscal year ending March 31, 2023 is unclear due to the impact of the Chinese lockdown and the situation in Ukraine, we expect sales growth in major industries such as construction machinery, agricultural machinery, gearboxes, aircrafts, and machine tools. We forecast net sales to be a record 140 billion yen and operating income of 6.5 billion yen.

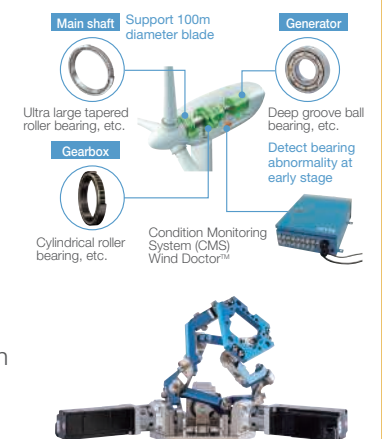
TOPICS

Wind turbine maintenance business

We have formed a business partnership with Hokutaku Co., Ltd. that specializes in maintenance for wind turbines. We will provide quick maintenance by integrating our CMS high-precision anomaly detection technology with Hokutaku's expertise in maintenance services, and expand our wind turbine-related business.

Function extension of Wrist Joint Module "i-WRIST™"

While rolling out Wrist Joint Module "i-WRIST™" in the market, we have received various requests and have developed the new "IWS series" which extended four functions. In recent years, with the decline in the working population, the demand for automation of work processes, including appearance inspection, which has been relying on manpower until now, has been growing. Through the provision of the IWS-series of i-WRIST, NTN will contribute to further improvements in productivity and quality by pushing the robotization and automation of customer production sites.



Automotive Market

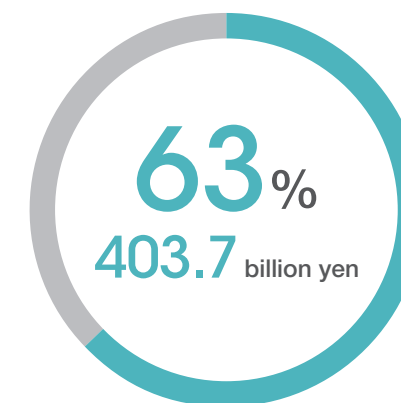
In response to the rapidly expanding trend toward CASE in the automotive market, we are responding to our customer needs as a specialist in the power/drive train system by continuing to enhance the functionality of our basic products, such as hub bearings and driveshafts, including low friction, lighter weight, more compact design, and improved durability, while at the same time, by enhancing our lineup of new products with high-speed rotation, creep-resistance, and electro-corrosion resistant performance required of e-Axle.

In addition to these basic products, we are combining products with peripheral components and integrating our core technologies. Through continuous development and proposals for new products that deliver precise and smooth control, such as electric oil pumps, ball screw modules, and hub bearings with steering functions, we will contribute to the creation of safe, secure, and comfortable cars for our customers.

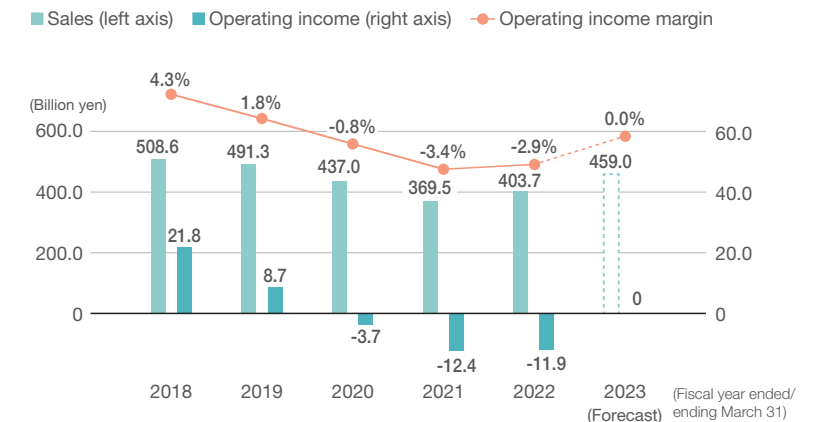
Executive Officer **Hideaki Miyazawa**



■ Percentage of total sales



■ Trend in business performance



Business environment and NTN's strengths

■ Accelerating the shift to EVs and electrification due to fuel efficiency and CO2 regulations and government-led targets for electrification in various countries

Strength High-efficiency products that reduce CO2 and contribute to Well-to-Wheel, electric module products

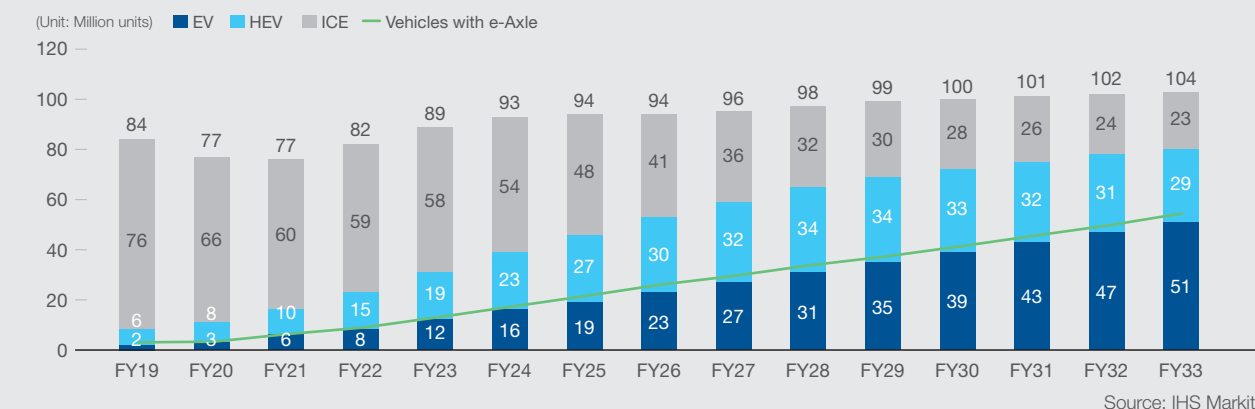
■ Increasing demand for e-Axle (motor reduction gears) associated with BEVshift

Strength Product lineup for e-Axle with high-speed rotation, creep-resistance, and electro-corrosion resistant performance

■ Increasing need for carbon-free products

Strength Supply network in a short supply chain utilizing global manufacturing bases

Trends in Global Vehicle Production



Results for the fiscal year ended March 31, 2022 and forecast for the fiscal year ending March 31, 2023

In the fiscal year ended March 31, 2022, net sales increased from the previous year, which was affected by the spread of the COVID-19, to 403.7 billion yen. However, the reduction in production by car manufacturers due to the shortage of semiconductors was greater than expected, and was only 109.3% higher than in the previous year. Operating loss was 11.9 billion yen, mainly due to an increase in procurement costs, energy costs and logistics costs, despite an increase in the scale of sales.

In the fiscal year ending March 31, 2023, we expect net sales to be 459 billion yen, 113.7% up on the previous

fiscal year fettered by the continued lack of semiconductor supply, the situation in Ukraine, and the lockdown in China. On the other hand, it is expected that the global number of passenger cars produced will return to the level in the fiscal year ended March 31, 2020 in two to three years. We are reforming our business structure to generate profits even when demand does not recover sufficiently. We will steadily reflect cost increases in selling prices and lower the break-even point by reducing fixed costs. We expect operating income to return to profitability in the fiscal year ending March 31, 2023.

Our Vision

“Top supplier in the Power/Drive Train system”

Company with No.1 proposal ability that makes customers happy with an overwhelming speed x solution
No. 1 company with proposal capabilities that satisfies customer with overwhelming speed and solutions

The rise of electrified vehicles throughout the world's automotive markets calls for functional automotive components with different characteristics or more rigorous performance requirements than are required for conventional internal combustion engine vehicles. We will accommodate these needs by offering differentiated technical expertise and lineups of advanced products providing features such as size/weight reduction, higher speed rotation, lower torques and less noise/vibrations in order to secure a competitive advantage over our competitors.

Another major wave, Ride Sharing and MaaS, is based on the absolute reliability of the drive system

responsible for running, turning, and stopping vehicles. Carmakers are shifting the focus and resource of their development work from the tangible (vehicle performance) to the intangible (services), creating an expanding range of areas in which NTN can contribute to vehicle safety, reliability and comfort. By recognizing these dynamic changes in the business environment as an opportunity, we will provide value that exceeds customer expectations through product development and advanced technical services that are ahead of market needs. By doing so, we aim to become the leading manufacturer in the drivetrain component segment essential to the automotive market.

TOPICS

First order received for high efficiency fixed type CVJ

In Europe, where CO2 regulations are becoming stricter, we received our first order for high efficiency fixed type CVJ (CFJ) for mass production, which will help reduce CO2 emissions and improve electricity costs.



Received whole order for in-house manufactured driveshafts from domestic automobile manufacturer

Production is scheduled to commence gradually in fiscal year ending March 31, 2023.



First order received for third-generation tapered roller hub bearings

We received our first mass-production order for the third generation tapered roller hub bearings (GEN3 HUR) that integrate hub shafts and inner rings to achieve both high rigidity and light weight for commercial vehicle front wheels in Europe.

Received orders for CVJ in EVs and hub bearings for EVs in Europe's premium brands

We received orders for EV projects that are being developed globally in multiple locations.



Achieved dmn value of 2.2 million with high speed ball bearing

Our high speed deep groove ball bearings have achieved a high speed dmn value of 2.2 million under oil lubrication for e-Axle, HEV motors and transmissions.

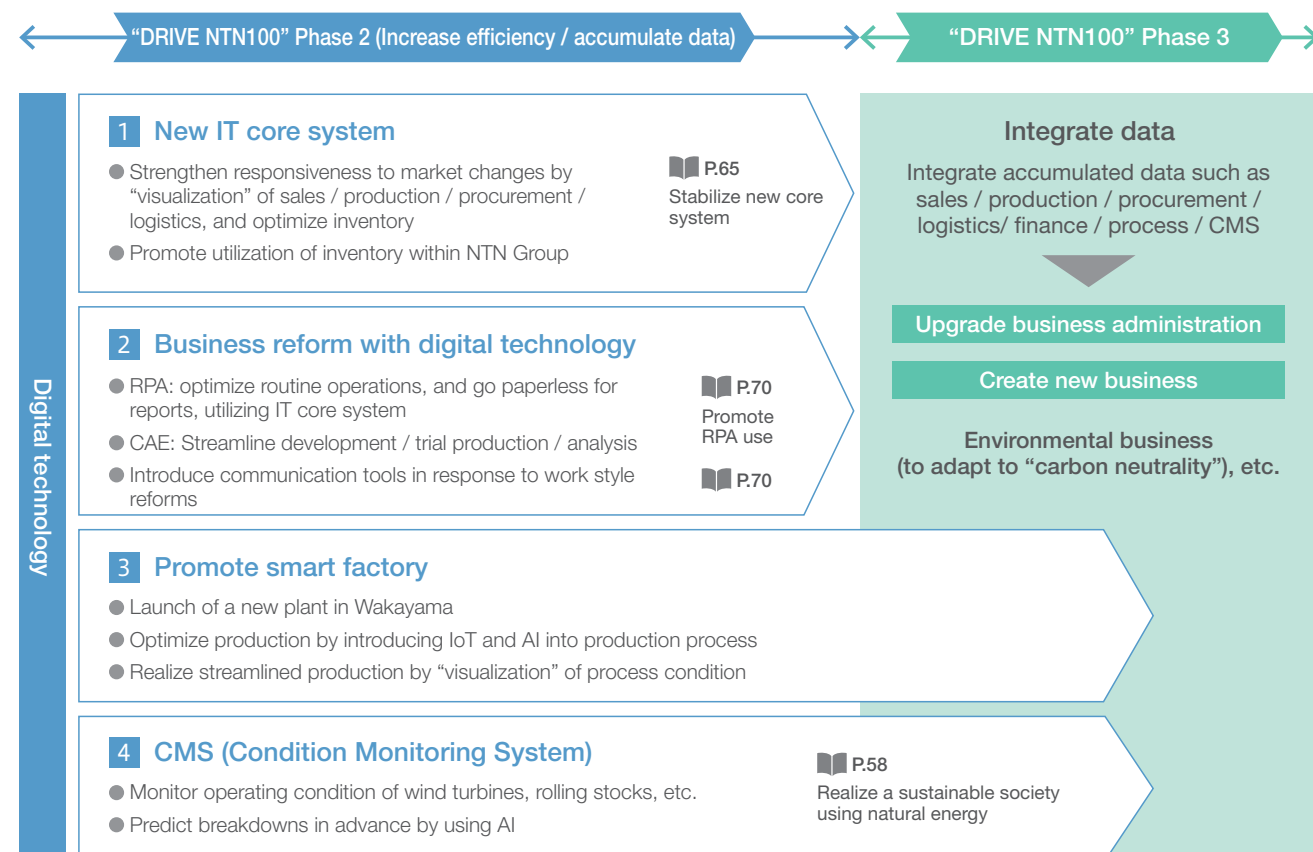


Developed the industry's first Creepless Bearing that stops creeping

For drive motors, transmissions, and e-Axle, which are becoming increasingly compact and lightweight, we have developed Creepless bearing that stops the progressive wave type creep generated by distortion of the outer ring.



The NTN Group's Medium-term Management Plan, "DRIVE NTN100" Phase 2 calls for accelerating the transformation of our business structure by integrating digital technologies with the management resources we have cultivated. Under this basic strategy, we will innovate our core systems to visualize sales, production, procurement, and logistics in an integrated manner, promote optimal inventory that responds quickly to fluctuations in demand, and utilize inventory within the Group. We will also promote the change to smart factories by introducing IoT and AI and optimizing and streamlining the manufacturing process as a whole. In addition, we are working to create and expand new businesses such as monitoring the operating status of wind turbines and rolling stock by introducing and expanding a condition monitoring system (CMS) as well as predicting failures in combination with AI.



Business reform with digital technology

CAE: Streamline development / trial production / analysis

By standardizing and using numerical analysis technologies as tools, we have created a system that enables general design engineers to perform calculations with the same level of quality as numerical analysis experts, with the aim of improving the efficiency of analysis operations in development.

In "DRIVE NTN100" Phase 2, we have developed an integrated calculation system for axle bearings, and have begun full-scale operation in design departments. By analyzing the procedure for numerical analysis, which was previously performed by specialist engineers, and fully automating it, we have greatly reduced the calculation time required for design studies.

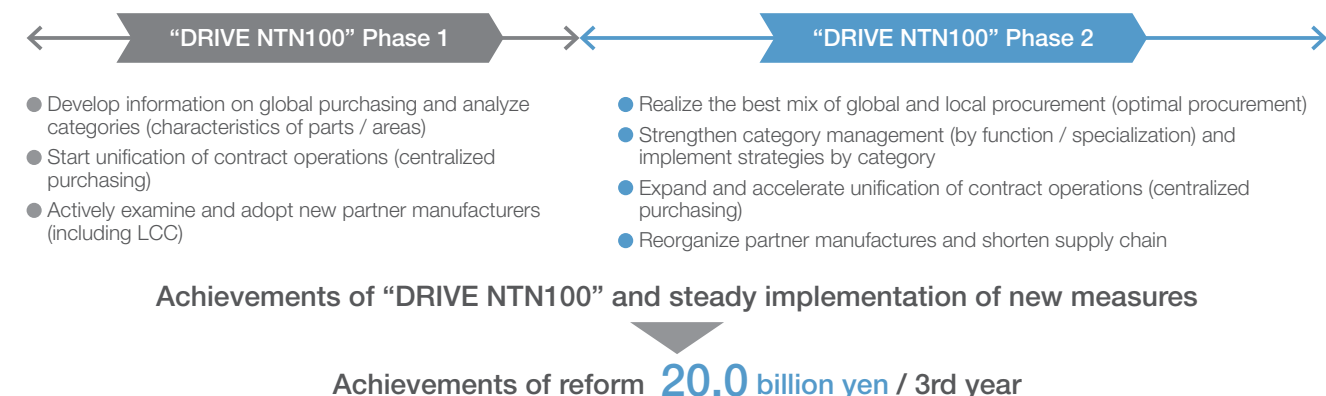
In other internally developed calculation systems, we will work to automate the creation of data input for analysis and output processing, analyze and utilize existing data, and introduce numerical optimization. We will also improve the capacity of our in-house calculation facilities and incorporate cloud computing to make effective use of resources.

Promote the change to smart factories

Launch of a new plant in Wakayama Optimize production by introducing IoT and AI into the production process Realize streamlined production by "visualization" of process conditions

As a "NTN NAMERAKA Factory," we are promoting the use of smart factories with the vision of delivering "satisfaction" to customers "rapidly." Visualization of "things," "facility," and "energy" is completed, and preventive and predictive measures are implemented by analyzing the data obtained. In addition, we aim to maximize throughput while maintaining proper in-process inventory by combining automatic warehousing and automatic transportation. Using this system as a model, we will accelerate the reformation of quality (improved traceability, reduced defect rate), environment (saving energy, reduced CO2 emissions), facilities (failure prediction, preventive maintenance), and manufacturing (shortened lead times, reduced inventory, and visualized cost) at all business sites.

In the basic operations of "buying," "producing," and "selling" as a manufacturing company, we will strengthen cost competitiveness in the process of "buying" materials and parts by promoting global procurement, realizing an optimal combination with local procurement, strengthening category management, and expanding and accelerating centralized purchasing as a means of procurement reform. We will reduce variable costs by 20 billion yen over three years of "DRIVE NTN100" Phase 2, half of which, at 10 billion yen, has been promoted as achievements of procurement reformation. In the fiscal year ended March 31, 2022, we achieved the effect amount as targeted in the first year.



Achievements of "DRIVE NTN100" and steady implementation of new measures

Achievements of reform **20.0 billion yen / 3rd year**

Efforts focused on in fiscal year ended March 31, 2022

Control the upward cost trend and supply chain tension for raw materials, energy and transport

From the start of the 3-year mid-term plan, our intention was to make the most of NTN Group's international status combined with a strong local presence. On increasingly global markets, with economic cycles that have become unpredictable, the "Best mix of local and global" policy gives us the advantage to cooperate with a reliable and responsive regional supplier network as well as a panel of global suppliers capable of addressing international business.

Each NTN partner is offered the opportunity to access more global projects, a guarantee of substantial volumes and a scale effect offering potential for competitiveness. The fiscal year was a real test for our policy and we were able to measure its effectiveness and relevance, allowing us to better control the upward cost trend and supply chain tension for raw materials, energy and transport.

Build a supplier base capable of supporting the NTN Group

Our ambition in the mid-term plan is to build an international network of specialists working together and in permanent interaction to establish global strategies for each of our purchasing categories, effectively implemented locally.

Central to our strategy, the objective of the reform of our category management approach is to build a supplier base capable of supporting the NTN Group in its many future challenges, such as electric vehicles or carbon neutrality, to name but two. By relying on the spirit of partnership, which is truly part of our DNA, we identify our preferred partners, according to criteria

of technological leadership, competitiveness, quality, responsiveness, SDGs, from a global supply chain perspective.

The identification, pre-selection and introduction of new suppliers, was a major activity in 2021. The strong dynamism in all regions has already enabled us to start new supplies, in particular in the competitive Asian countries.

The global economic context has also led us to reconsider and redesign our global raw materials purchasing strategy, the category of primary importance in our performance.

Accelerate centralized purchasing for driveshafts and hub bearings

The centralization of purchasing is an important axe of the reform of variable costs, the keywords of which are globalization, simplification and agility:

- The primary objective is to globalize volumes, allowing us to offer broader opportunities to our partners, a source of development and increased competitiveness.
- Simplification of the supplier relationship by setting up a single contact and improving supplier management

by standardizing and digitalizing our processes.

- Agility: the operational teams of the production sites can concentrate on the operational management of the supply chain for more flexibility.

The process was initiated in 2021 for the CVJ and Axle automotive product lines and overhaul of the NTN category management focused on these two families as a priority.

Control Increase of Fixed Costs / Improve Assets Turnover

In “DRIVE NTN100” Phase 2, we need to urgently improve the cash flow by optimizing production as a whole, and we will reduce logistics costs and inventory assets by consolidating and organizing business sites. We will also use external partners to reduce manufacturing costs. In terms of our capital investment, we will, in principle, freeze investment in expansion of capacity and shift to investment for risk and safety measures such as natural disasters, as well as measures to maintain and upgrade facilities and improve efficiency. Costs will be kept to 60 billion yen or less for the three years. Based on these assumptions, we are promoting production reorganization and production reformation activities in order to control increases in fixed costs and improve asset turnover.

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 overseas 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

Basic policy in production reorganization

The market environment surrounding NTN is changing rapidly, as seen in the electrification and EV of the automobile market. Based on the growth strategies of each business headquarters, we will reorganize our production system in Japan from the perspectives of product axis, base axis, and BCP, thereby strengthening profitability through the overall optimization of production.

Plan and progress of production reorganization

In “DRIVE NTN100” Phase 2, we are reorganizing the production of radial bearings, one of NTN's core products. With the shift to a carbon-free society, the market for radial bearings is expected to expand for high-performance products for electric vehicles specializing in low-vibration, high-speed rotation, and insulation performance. NTN has positioned high-performance products for electric vehicles as one of its key products. We will consolidate these products at the Wakayama Works, which was completed in October 2019, Ball Bearing Plant of Iwata Works, and NTN Mie Corporation, our main manufacturing base for medium-sized radial bearings to strengthen price competitiveness and aggressively enter the market through the introduction of the latest production technologies.



A new plant in Wakayama (Main passage where automatic guided vehicles and people come and go)

In reorganizing production, we will, in principle, freeze investment in capacity expansion and reduce costs by converting the management resources of withdrawal and shrinking products. At the same time, we will shift to invest in maintaining and upgrading facilities as well as natural disaster risks and safety measures.

With regard to standard products, we will expand outsourcing production to NTN's affiliate, TUNG PEI INDUSTRIAL CO., LTD. in September 2022 (approximately 5 million units/month). In this way, we will strengthen our ability to supply products for the aftermarket through high-efficiency production and control investment in maintaining and upgrading facilities to improve profitability. The expansion of outsourcing to TUNG PEI INDUSTRIAL CO., LTD. is planned to be completed in October 2024.

In addition, we will utilize the space and management resources created by the reorganization of radial bearings to establish a high-efficiency production system by consolidating manufacturing bases for tapered roller bearings, needle roller bearings and precision bearings, and strengthen profitability by redefining our product portfolio. At the same time, we will establish a foundation for a future manufacturing system by implementing investment to locate and upgrade bases in light of earthquake resistance and the risks of tsunami disasters.



TUNG PEI INDUSTRIAL CO., LTD.

Production reform

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 resources to promote reforms

Creating a new Monozukuri (manufacturing) system

Since 2019, we have been promoting production reform activities aimed at reducing lead times and improving inventory turnover ratio across the entire supply chain, from materials procurement to sales to customers.

The production reform activities have been promoted mainly in production sites in Japan, and have expanded to 15 domestic sites by the fiscal year ended March 31, 2022. As a result to date, we have already shortened lead times at several domestic sites through streamlining activities, such as the introduction of pull-type production, and have achieved a doubling of inventory turnover ratio and operating margin. In addition, these activities are being expanded to plants manufacturing finished products and sales divisions, and the scope of these activities is expanding to cover the supply chain up to the delivery of products to customers.

In production reform activities, we are working on production leveling (streamlining) by synchronization

Monozukuri is “human resource development”

Production reform is “management reform,” and the three-pronged activities of management, promoters, and practitioners are fundamental. We actively engage in reform education in collaboration with the department in charge of human resources development, including rank-based education on the Lean Production System, which serves as the foundation for production reform activities, as well as practical training on reform methods and plant-wide training sessions.

In particular, we incorporate innovations such as Kanban and Mizu-sumashi (parts supply) into the content of our educational programs while paying attention so that the purpose is not to introduce such innovative methods. We ensure that the mindset of knowing why educational programs are necessary (why innovations are needed) is thoroughly understood. Depending on the business site, we are firmly fostering the ability to think and devise new options ourselves by promoting the change of landscape (eliminating unnecessary goods and visualizing required goods) through sorting and setting-in-order activities on site.

Implementation of three-pronged activities through on-site guidance meetings

Regarding production reform initiatives to realize manufacturing that NTN aims for, on-site guidance meetings are held regularly at each business site with the support of consultants to identify and share issues at local site with local materials and to consider countermeasures related to specific goods and information.

On-site guidance meetings are a forum for nurturing human resources to maximize the abilities of target workplaces and everyone involved in their operations, raise motivation, and bring about a change in behavior. They are also a place to commend challenges and change, and learn together across different job positions. Executive Officers, not just those in charge of production, participate actively to promote and establish activities by

of component parts as well as designing and keeping inventories of finished products and work in process to the extent necessary. Such leveling in plants that began this initiative has been performed progressively from the beginning of the month to the middle of the month to the end of the month, realizing after-hours reductions by improving on-time production capacity. We are also working to cut down on the purchase of parts and materials and promote partial delivery through the introduction of small-lot production, which helps to reduce costs.

Inventory turnover ratio is an important indicator for measuring the results of production reform activities. We are working to strengthen management, including monthly follow-ups by senior management and the posting of the trend of indicators on our website for employees and dashboards for management.

Manufacturing is based on “human resource development.” The development of human resources, the core of activities at not only dedicated units but also at each business site, is an urgent issue. We have started implementing special education for development and initiatives such as the development of in-house education trainers.



Promoting production reform including human resource development

providing opinions from a variety of perspectives, and implement three-pronged activities that reaffirm the roles that stakeholders should play.



On-site guidance meeting

Toward Establishing a Management Base to Realize Sustainable Growth as a Global Company

Even in a very tough management environment, as exemplified by the COVID-19 pandemic, a shortage of semiconductors, the situation in Ukraine and a surge in prices of raw materials, we have been steadily moving forward to revitalize NTN in the fiscal year ending March 31, 2024, while maintaining a course set forth in the NTN Revitalization Scenario.



Executive Officer CFO (Chief Financial Officer) Tetsuya Sogo

1 Actual results for the fiscal year ended March 31, 2022 and forecasts for the fiscal year ending March 31, 2023

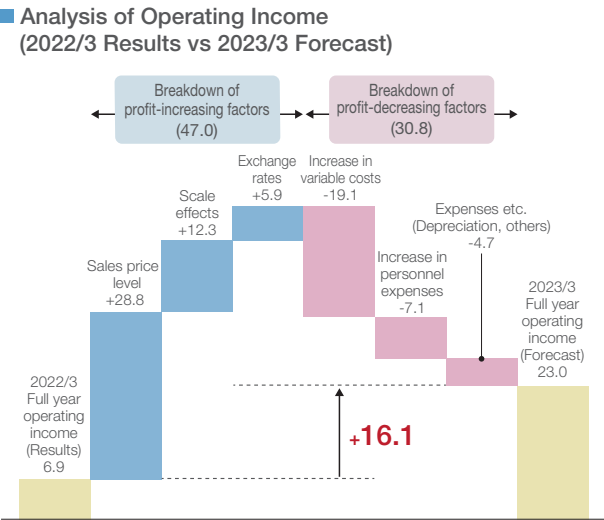
<Key points of financial results for the fiscal year ended March 31, 2022>
For the fiscal year ended March 31, 2022, we announced the initial forecasts of 660.0 billion yen in net sales and 15.0 billion yen in operating income. During the period, however, we revised the forecasts downward to 630.0 billion yen in net sales and 6.0 billion yen in operating income, taking into consideration a much higher-than-expected level of semiconductor shortage and surge in prices of steel and other raw materials in the first half of the year. Despite a higher surge in prices of raw materials and a greater-than-expected rise in personnel expenses in the U.S. due to the COVID-19 pandemic in the revised forecasts, the actual result was that net sales and operating income exceeded what was published in the revised forecasts and came to 642.0 billion yen and 6.9 billion yen, respectively. This was because in a weaker-yen environment, sales slightly exceeded our assumption and we reduced variable costs as planned, thoroughly managed fixed costs and improved selling prices. On the other hand, although there was no choice but to increase inventory assets to a higher level than planned due to a disruption in the supply chains of customers, we attained significant improvement in free cash flows by accelerating sales of cross-held shares and other assets and achieved a substantial increase in net income from

the initially announced forecast. In addition, the net D/E ratio was further lowered as compared to the announced forecast. In a tough external environment with significant fluctuations and instability of top-line revenue, a surge in prices of raw materials, etc., we produced good results by steadily implementing measures that should be taken by the entire NTN Group to reduce variable costs, control fixed costs and address cash flow issues in order to achieve the NTN Revitalization Scenario.

<Key points of forecasts for the fiscal year ending March 31, 2023>
In the fiscal year ending March 31, 2023, as the outlook continues to be uncertain due to a shortage of semiconductors, the COVID-19 pandemic, the situation in Ukraine and other factors, increases in prices of raw materials, sea freight rates, etc. are expected to be at least twice their increases of the fiscal year ended March 31, 2022. Regarding these abnormal cost increases, the important measures for the current fiscal year are to vigorously promote thorough price pass-on measures and reliably implement measures including variable cost reformation to reduce variable costs and control fixed costs according to the plan as we did in the previous fiscal year. Based on this, we forecast 720.0 billion yen in net sales, 23.0 billion yen in operating income and 10.0 billion yen in profit attributable to owners of parent for the fiscal year ending March 31, 2023, taking into consideration the current weaker-yen environment and global sales decrease factors. As top-line instability continues, we will reduce inventory assets, secure 18.0 billion yen of free cash flow and lower the net D/E ratio according to the plan. In addition, we are to resume dividend payments, beginning with the interim dividends for the current fiscal year, as initially planned in the Revitalization Scenario. Whatever changes occur to the external environment including sales, prices of raw materials, etc., thoroughly implementing the above important measures that should be carried out by the entire NTN Group will lead to maintaining the course for achieving the NTN Revitalization Scenario in the fiscal year ending March 31, 2024.

2 Analysis of the forecasted profits for the fiscal year ending March 31, 2023 and key points of measures to achieve the forecasted profits

<Year-on-year analysis of profits for the fiscal year ending March 31, 2023>
- Breakdown of profit-increasing factors (47.0 billion yen) -
◆ The largest profit-increasing factor for the current fiscal year is the price pass-on measure of 28.8 billion yen. An increase in variable costs of 26.0 billion yen including



a rise in prices of steel materials of 22.0 billion yen and other increase of 4.0 billion yen such as a rise in electricity, gas fees, prices of materials and parts have been factored in. Furthermore, we assume an increase in sea freight rates of 6.0 billion yen and an increase of personnel expenses in U.S. manufacturing companies of 1.8 billion yen due to the COVID-19 pandemic. As a result, costs will increase by 33.8 billion yen in total due to a sharp increase in inflation. In this regard, we aim to pass all of those increased costs on to our customers. However, regarding the recovery of such amounts in the current fiscal year, 28.8 billion yen is planned as a target that must be achieved, factoring in a conservative buffer of 5.0 billion yen.
◆ Net sales for the current fiscal year are expected to increase by 78.0 billion yen year on year to 720.0 billion yen. This amount, however, factors in the impacts of exchange rates (21.8 billion yen) and price pass-on measures (28.8 billion yen) and therefore a sales volume increase on a physical quantity basis is 27.4 billion yen. We expect a profit increase of 12.3 billion yen, which is calculated by multiplying the amount of the sales volume increase by the marginal profit ratio.
◆ In addition, a profit increase due to the weaker yen is projected to be 5.9 billion yen.

- Breakdown of profit-decreasing factors (30.8 billion yen) -
◆ Regarding variable costs, an increase of 19.1 billion yen and the corresponding decrease in profits are expected, taking into consideration a rise in prices of steel materials, etc. of 26.0 billion yen and an expected result from our cost reduction activities of 7.0 billion yen including the impact of variable cost reformation. In the previous fiscal year, variable cost-increasing factors, including a rise in prices of steel materials, etc. of 9.6 billion yen and a rise in electricity and gas fees and prices of materials and parts, amounted to 13.5 billion yen. Therefore, in the current fiscal year, we assume an abnormal surge in prices of raw materials that is about twice the increase of the previous fiscal year.
◆ With regard to fixed costs, personnel and other expenses are expected to increase by 11.8 billion yen, resulting in a decline in profits. Of those, a total of 7.8 billion yen resulting from a 6.0 billion yen increase in sea freight rates and a 1.8 billion yen increase in U.S. personnel expenses will be passed on to customers and the remaining amount of 4.0 billion yen is set according to the existing policy to restrain an increase in fixed costs to 15% or less of a sales volume increase of 27.4 billion yen.

<Key points of measures to achieve the forecasted results for the fiscal year ending March 31, 2023>
◆ The biggest issue for the current fiscal year is a sharp

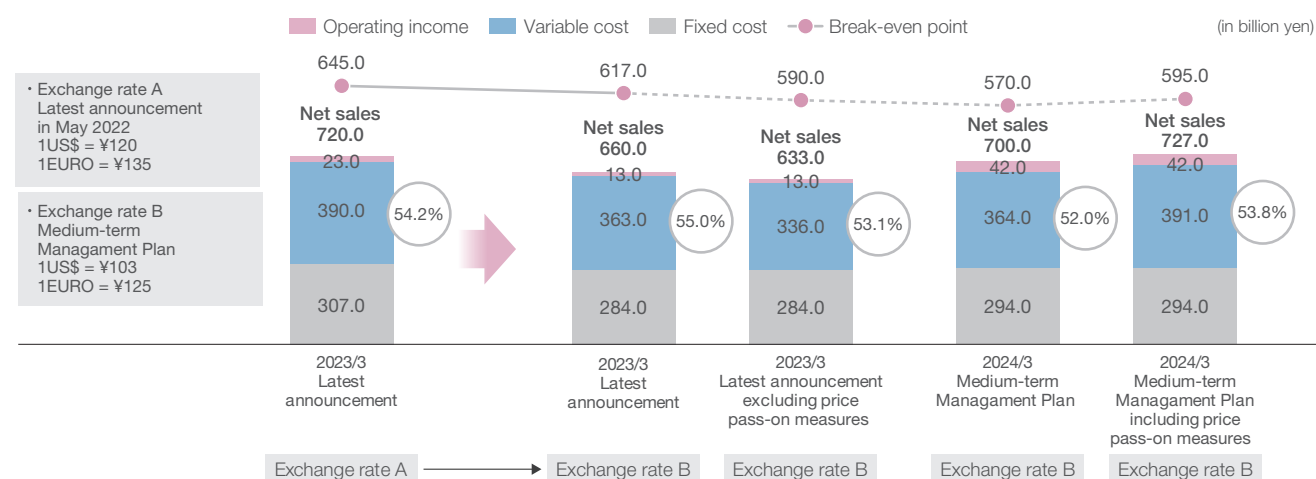
increase in costs of 33.8 billion yen and a measure to address the issue is to reflect at least 28.8 billion yen in prices during the current fiscal year. However, the 28.8 billion yen amount includes 6.0 billion yen in increased costs for the previous fiscal year for which the implementation of a price pass-on measure is delayed to the current fiscal year. As such, with regard to passing increased costs for the current fiscal year on to prices during the current fiscal year, 22.8 billion yen or 67% of such costs is conservatively set as an achievement level, but our target is still 100%.
◆ On the other hand, unstable top-line revenue is expected to fluctuate significantly in the current fiscal year as well but it is important to continue to thoroughly improve productivity and cut down costs and thereby reliably implement variable cost reduction and fixed cost control measures according to the plan, while reducing inventory assets that increased in the previous fiscal year and aiming for 100% price pass-through in order to, among other purposes, achieve profitability in the automotive business.
◆ Furthermore, as the growth rate in the aftermarket business is small in the current fiscal year, we need to take measures to strengthen our ability to respond to aftermarket demand and add as many sales as possible to the forecasted net sales for the aftermarket business by focusing on expanding inventories for aftermarket services while reducing inventories for OEM.
◆ In parallel with the above activities, we will work to, among other activities, improve the profit ratio of the automotive business and expand the aftermarket business and, at the same time, must ensure the achievement of the NTN Revitalization Scenario in the fiscal year ending March 31, 2024 by accelerating three drastic transformation measures (Pricing Power, Cash Conversion Cycle and Strategic Partnership) in order to revitalize NTN and promote product/business portfolio reformation, production/logistics reformation and Variable Cost Reformation with firm resolve.

■ NTN Revitalization Scenario (Fiscal Year Ending March 2023)	
Priority Issues for the Current Fiscal Year	Revitalization Scenario
<ul style="list-style-type: none">● Promotion of sales price increase<ul style="list-style-type: none">▶ Pass increased raw material costs on selling prices▶ Withdraw from unprofitable products and negotiate for price increase● Reduction of variable costs through variable cost reformation<ul style="list-style-type: none">▶ - 1 point in the variable cost ratio● Fixed cost control in the phase of increasing volume<ul style="list-style-type: none">▶ Within 15% of the increase in volume	Definition of Revitalization
	1. Creating Corporate Value <ul style="list-style-type: none">▶ ROIC 5% 2. Strengthen financial position <ul style="list-style-type: none">▶ Net D/E 1.0 3. Realize stable dividends <ul style="list-style-type: none">▶ DOE 4%
	Acceleration of transformation for revitalization
	1. Pricing Power (product/business portfolio reformation) 2. Cash Conversion Cycle (production and logistics reformation) 3. Strategic Partnership (variable cost reformation)

3 Relationship between forecasts for the fiscal year ending March 31, 2023 and those for the fiscal year ending March 31, 2024

Results of examining, by using uniform exchange rates, whether forecasts for the fiscal year ending March 31, 2023 are consistent with the course for achieving the NTN Revitalization Scenario in the fiscal year ending March 31, 2024 are shown in the next page. The targets (700.0 billion

■ Lower Break-even Point towards Revitalization



yen of net sales and 42.0 billion yen of operating income) for the fiscal year ending March 31, 2024 can be attained by, as previously, restraining an increase in fixed costs across the NTN Group to 15% or less of an increase in net sales and reducing variable costs by 7.0 billion yen per year to cut the variable cost ratio by one point as planned.

- ◆ First, if the exchange rates for the forecasts (720.0 billion yen of net sales and 23.0 billion yen of operating income) for the fiscal year ending March 31, 2023 are converted to the exchange rates as of formulating the Medium-term Management Plan for the fiscal year ending March 31, 2024, net sales and operating income are changed to 660.0 billion yen and 13.0 billion yen, respectively.
- ◆ Note that the amount of costs passed on to sales prices and included in such net sales is 28.8 billion yen and if the exchange rates for the Medium-term Management Plan are applied to this amount, the amount is changed to 27.0 billion yen. Then, if the 27.0 billion yen is regarded as a temporary external factor and excluded from the net sales and the variable costs, the net sales and the operating income are changed to 633.0 billion yen and 13.0 billion yen, respectively. These amounts can be compared with the targets (700.0 billion yen of net sales and 42.0 billion yen of operating income) for the fiscal year ending March 31, 2024 based on the same exchange rates and the same conditions.
- ◆ In this case, net sales will increase by 67.0 billion yen from 633.0 billion yen to 700.0 billion yen over a period from the fiscal year ending March 31, 2023 to the fiscal year ending March 31, 2024. Accordingly, fixed costs will increase by 10.0 billion yen, or 15% of 67.0 billion yen, resulting in an increase from 284.0 billion yen to 294.0 billion yen. Meanwhile, if the variable cost ratio is assumed to be further lowered by one point to 52% as planned, the targets of 700.0 billion yen in net sales and 42.0 billion yen in operating income will be achieved in the fiscal year ending March 31, 2024 as initially planned.
- ◆ However, as the excluded 27.0 billion yen of costs are actually to be added, the net sales and the operating income will come to 727.0 billion yen and 42.0 billion yen, respectively. As such, the operating income ratio will be worse than the 6% target and the break-even point will rise. That being said, we recognize that it is absolutely necessary to take price pass-on measures in order to respond to the sharp rise in costs under the current circumstances, and even in the case of a further rise in prices of steel materials, etc., we will

- carry out 100% price pass-through with firm resolve.
- ◆ If this trend continues, profits do not increase and only net sales grow and therefore, the profit ratio declines. However, even if net sales increase due to the price pass-on measures, this does not affect invested capital. Therefore, NTN will take measures to reliably implement stable distribution of dividends with ROIC = 5%, the net D/E ratio = 1.0 and DOE = 4% which is the definition of revitalization of NTN by steadily reducing interest-bearing debt while reliably ensuring operating income.
- ◆ For your information, interest-bearing debt and equity capital are 370.0 billion yen and 200.0 billion yen as set forth in forecasts for the fiscal year ending March 31, 2023 and we plan to further reduce interest-bearing debt in the fiscal year ending March 31, 2024. However, even if the current level of invested capital (570.0 billion yen) remains unchanged, if 42.0 billion yen of operating income is ensured, the ROIC is calculated to be 5.2% in the formula: $(420 \times 0.7) / 5,700$, assuming that the effective tax rate is 30%. Therefore, we can achieve the 5% target in a reliable manner.

4 NTN Revitalization Scenario that must be achieved and our future vision

The overview of the NTN Revitalization Scenario formulated in the fiscal year ended March 31, 2020 was provided in the CFO Message two years ago. Thereafter, in order to respond to significant changes in the external environment, such as the COVID-19 pandemic, a shortage of semiconductors and a surge in prices of raw materials, we took risk hedge measures assuming the worst-case scenario, as exemplified by the securing of 100.0 billion yen of funds including commitment line agreements with our main banks, and the issuance of hybrid bonds worth 50.0 billion yen. In doing so, we focused on thorough fixed cost reduction (42.7 billion yen) in the two-year period until the fiscal year ended March 31, 2021. Since the fiscal year ended March 31, 2022, we have accelerated the three drastic transformation measures described below and have been aiming to reduce interest-bearing debt and resume stable distribution of dividends through free cash flow control while implementing measures to reduce variable costs by approximately 7.0 billion yen per year and control fixed costs according to the sales volume (within 15% of an increase in sales volume).

<Progress of transformation toward Revitalization of NTN>

1) Pricing Power (product/business portfolio reformation): Investment decision criteria (NPV, IRR) and business performance evaluation criteria (EVA, ROIC) that were set by globally introducing the concept of capital costs in the fiscal year ended March 31, 2020 have taken root, strengthening the investment selection and follow-up systems. Also, the systems for monitoring the status of creation of corporate value, clarifying issues and taking measures are being strengthened with regard to each group company in each region of each business. Regarding the OEM business for automobiles and industrial machinery in particular, while thoroughly verifying investment returns and taking into consideration NTN's competitive advantages such as future product technologies and production technologies, we thoroughly implement a policy in which measures to expand investments simply for winning price competitions are eliminated and such available funds are used to invest in the aftermarket business. This will surely lead to improvement in the product portfolio of each OEM business and improvement of the business portfolio through expansion of the aftermarket business in the future. Especially in the automotive business, the trend toward decarbonization and EVs has created a business opportunity for NTN to utilize its technological advantage.

2) Cash Conversion Cycle (production/logistics reformation): We have been promoting production reformation since the fiscal year ending March 31, 2020 and many of our production sites in Japan succeeded in reducing work-in-process and shortening production lead times. We are working to apply such successful practices across more sites, but in the environment with significant changes in top-line revenue, our efforts to reduce inventory assets have currently not produced good results in the NTN Group as a whole and the number of our inventory turnover days is consistently approximately 40 days larger than that of competitors in Japan. We cover this weak point by implementing factoring and other measures and have produced positive results in terms of the Cash Conversion Cycle, as a whole. However, a large volume of inventory assets still remains a heavy drag on us in this competitive environment. Starting from the current fiscal year, we will link the production reformation that produced results in production sites in Japan to

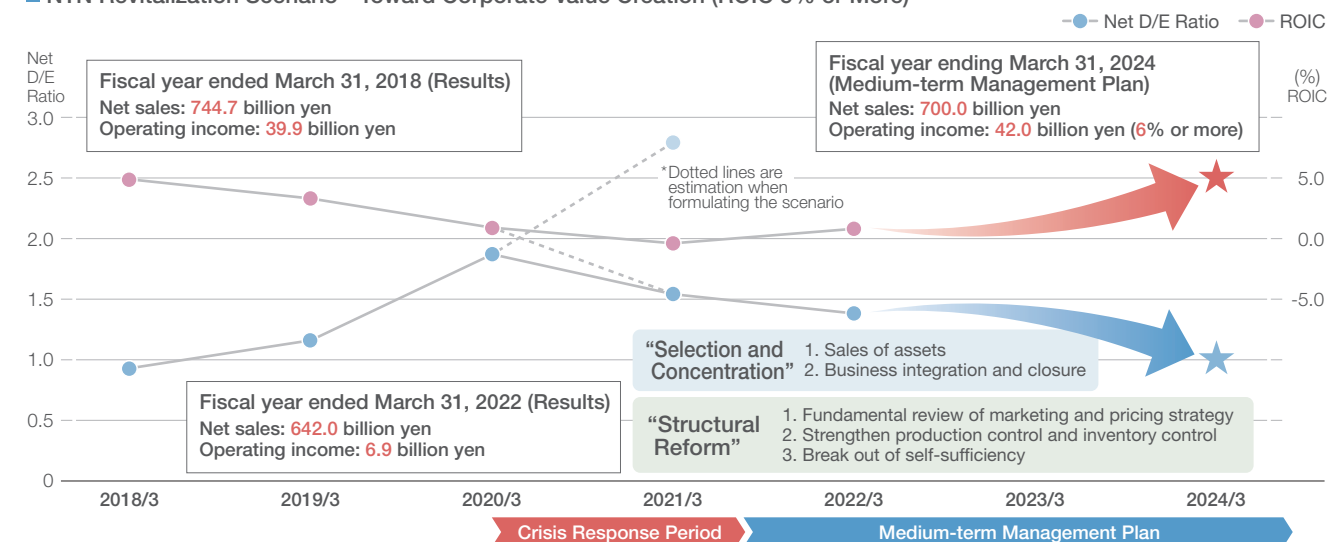
the logistics reformation and introduce the successful practices to overseas sites, thereby steadily minimizing the current gap between our competitors and us.

3) Strategic Partnership (variable cost reformation): The Medium-term Management Plan for the fiscal year ended March 31, 2022 to the fiscal year ending March 31, 2024 aims to reduce variable costs by approximately 7.0 billion yen per year through variable cost reformation etc., and the result for the first fiscal year (ended March 31, 2022) was a decrease of 8.5 billion yen. We are moving forward with reviewing product specifications, exploring new suppliers and breaking away from self-sufficiency through collaborations with partner companies, and in this way, we will aim not only to produce variable cost reduction effects in the short term but also to continue to significantly reduce investments and complement human and technical resources by building strategic partnerships.

<Vision for future sustainable growth>

We are in a situation where it is increasingly difficult to make forecasts, but our future vision is that no matter what changes occur to the external environment, we will accelerate the establishment of organizational culture where all regional business sites and divisions autonomously pursue overall optimization for survival by sharing the perspective of corporate value maximization, in other words, the establishment of a global learning organization. For that purpose, each business site needs to enhance the autonomy of its daily management and administration work to promptly respond to changes in a situation surrounding the business site under close coordination within the entire NTN Group so that the business site can use its relationship with the head office as a stepping stone for making a leap forward. On the other hand, the head office will focus on formulating and promoting a global financial strategy, brand strategy, business portfolio strategy, production/technology strategy, etc. and enhance the cohesion of the entire NTN Group by stepping up functions of the head office as a global strategic headquarters. I myself will maintain a keen awareness of investment in personnel as a non-financial indicator and will have direct dialogs including global web meetings with leaders of all divisions within and outside Japan to explain and discuss strategies and directions to be adopted by us.

■ NTN Revitalization Scenario - Toward Corporate Value Creation (ROIC 5% or More)



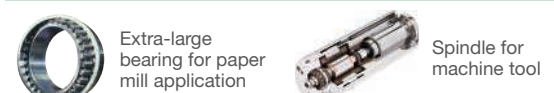
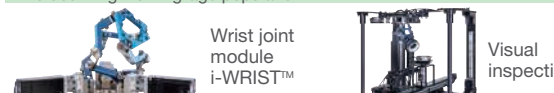



Achieve ROIC 5% or more, maintain ROE 8% or more, return 4% to shareholders, and allocate the remaining 4% to sustainable growth in the future.


Our Management Policy for the Group is to aim to realize a “NAMERAKA Society” through practicing its corporate philosophy, and 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. Based on this policy, in December 2021, we formulated a roadmap for realizing a “NAMERAKA Society” in order to achieve the targets of 13 items of materiality identified in December 2020.

■ Roadmap for realizing a “NAMERAKA Society”

Contribution to solving social issues toward the future we aim for

	ESG issues	Materiality	Initiatives	2020s	2030s	2040s	After 2050		
Environment	Realize carbon neutrality 	Respond to climate change	Reduce CO ₂ emissions in business activities	<div>Visualize and improve electric power at production plants</div> <div>Promote introduction of natural energy generation and purchase of renewable electricity</div> <div>Introduce internal carbon pricing</div>	<div>Scope1 and 2</div> <div>★ FY2030 ▲50% (compared to FY2018)</div> <div>★ FY2035 Carbon neutrality</div>	<div>Scope1 and 2</div>	<div>Scope3</div> <div>★ FY2050 Carbon neutrality</div>		
	Contribute to carbon-free society    	Realize a sustainable society using natural energy	Contribute to spread of wind turbine and hydrogen society	<div>Contribute to the spread of wind turbine use with hardware and software</div> <div></div>	<div>Contribute to hydrogen society</div> <div></div> <div>Hydrogen embrittlement resistant bearing</div>				
		Reduce energy loss	Save energy for EVs and electrification (core products)	<div>Propose CO₂ reduction by high efficiency and low friction of core products (CVJ, hub bearing, and bearing)</div> <div></div> <div>Driveshaft that transmits driving force</div> <div>World's No. 2 market share</div>	<div>Product realization of further environment-contributing products</div> <div></div> <div>Hub bearing that supports the wheel</div> <div>CFJ</div> <div>50% reduction in torque loss (compared to EBJ of conventional products)</div> <div></div> <div>62% reduction in friction (compared to 2009)</div> <div>Low friction hub bearing III</div>				
			Save energy for EVs and electrification (new areas)	<div>Propose CO₂ reduction by multi-functional module products utilizing core technology</div> <div></div> <div>eHUB</div> <div>Contribute to fuel efficiency of HV such as drive assist and power regeneration during deceleration</div> <div>sHUB</div> <div>Contribute to stable vehicle driving and improved fuel efficiency</div> <div>Adaptation to avoidance behavior of self-driving cars</div> <div></div> <div>Ra-sHUB</div> <div>Control steering angle at the left and right rear wheels separately</div> <div>Expected to contribute to autonomous driving</div> <div></div> <div>Support electrification of brakes and auxiliary equipment such as pumps</div> <div>Electric motor actuator</div>					
			Increase efficiency of manufacturing equipment	<div>Contribute to reducing wasteful electricity consumption by increasing the operating rate of manufacturing facilities through IoT and sensing</div> <div></div> <div>Talking bearing</div> <div>Wi-Fi</div> <div>NTN Portable Vibroscope</div>	<div>Condition Monitoring System</div> <div></div> <div>EDGE CROSS</div> <div>Edge Application for Bearing Diagnostics</div>				
			Bearing refurbish business	<div>Contribute to reducing CO₂ emissions in the entire supply chain by reusing used bearing</div> <div></div> <div>Extra-large bearing for paper mill application</div> <div>Spindle for machine tool</div>	<div>Recycling</div> <div></div> <div>Production</div> <div>Use</div> <div>Circular economy</div> <div>Establish bearing refurbish business</div>				
	Social	Contribute to prosperous lives  	Provide safety and comfort	Robot-related	<div>Establish robot-related modules to compensate for labor shortage due to the declining working-age population</div> <div></div> <div>Wrist joint module i-WRIST™</div> <div>Visual inspection</div>	<div>Propose solutions for automation, efficiency, and labor saving at production sites</div>			
Disaster mitigation and disaster prevention				<div>Provide independent power supply equipment that contributes to the preparation for natural disasters</div> <div></div> <div>Green Power Station</div> <div>N³ N-CUBE</div>					

Foundation to support ESG management

ESG issues	Environment / Environmental protection	Social / Sustainable supply chain	Social / Prosperous human development	Governance
Materiality	Resource recycling and pollution prevention 	Improve the reliability of products and services (quality assurance and stable supply) 	Promote safety and health  Human resource development 	Thorough compliance 
		Procurement activities with an emphasis on environment and society 	Respect for human rights  Promote diversity 	Strengthen governance 

Approach to ESG management

The roadmap for realizing a “NAMERAKA Society” consists of “contribution to solving social issues toward the future we aim for” and “foundation to support ESG management,” which forms the base for its activities. The roadmap defines related materiality and specific measures based on the seven ESG issues of “realize carbon neutrality,” “contribute to carbon-free society,” “contribute to prosperous lives,” “environmental protection,” “sustainable supply chain,” “prosperous human development” and “governance.” In order to resolve ESG issues, we have defined the measures that must be taken by combining the perspective of forecast, which identifies the anticipated future as an extension of conventional business activities, with the perspective of backcast, which considers what needs to be done and at what point in time by working backwards from the targeted future. The Group promotes ESG management based on this roadmap for sustainable growth over the medium to long term.

Contribution to solving social issues toward the future we aim for

Reduce CO₂ emissions in business activities

In “realize carbon neutrality,” we have set “Achieve carbon neutrality by the fiscal year 2035 (by the fiscal year 2050 for the entire supply chain)” as the target, and are working to reduce CO₂ emissions in our business activities. We are accelerating our efforts toward carbon neutrality by mainly implementing the following measures.

- (1) Confirmation of power usage status and systematic reduction of CO₂ emissions by visualizing power consumption in the product manufacturing process
- (2) Introduction of solar and wind power generation facilities at business sites and the promotion of purchasing renewable energy power
- (3) Utilization of internal carbon pricing

Contribution to society by providing products and services

In “contribute to carbon-free society,” we will contribute to the spread and stable operation of wind power generation equipment by providing bearings that support the increase in size of wind power generation equipment and by providing condition monitoring services that utilize IoT. In addition, as a response to the electrification and EVs shift in the automobile industry, we are promoting higher efficiency, smaller size and lighter weight of core products, and developing multifunctional module products that utilize core technologies.

In “contribute to prosperous lives,” we will propose solutions such as robot-related modules to meet the growing demand for labor saving due to the declining working population. In addition, to prepare for frequent natural disasters, we will contribute to disaster mitigation and disaster prevention by providing independent power supplies and others.

Foundation to support ESG management

Environment

We are striving for “environmental protection” by promoting efforts in resource recycling and pollution prevention as part of our business activities.

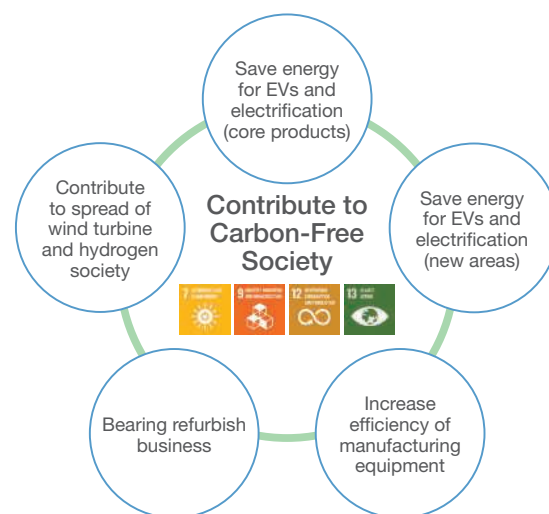
Social

We will strive to improve the reliability of our products and services, promote CSR procurement, and aim to realize a “sustainable supply chain.” In addition, we believe that it is important for business operations to protect the safety of employees who support the business and improve the quality of human resources. Based on this thought, we are working to achieve “prosperous human development” by promoting safety and health, and fostering a culture of learning and development in the workplace.

Governance

As a company that is trusted and needed by society, we engage in business activities with an emphasis on compliance. We also strive to increase corporate value over the medium to long term through management that emphasizes transparency and fairness.

■ Five initiatives that NTN Group focusses on toward a carbon-free society



Sustainability Management | Contribute to Carbon-Free Society

Materiality

Reduce energy loss

KPIs and targets for the fiscal year ending March 31, 2023

- Development related to low friction, miniaturization and weight reduction of products for automobiles and industrial machinery → Completion of development themes
- Development related to module products for EVs and electrification → Completion of development themes

Save energy for EVs and electrification

Amid increasingly stringent fuel efficiency standards and CO₂ emission regulations, the development of electric vehicles driven by electric drive units in place of gasoline engine vehicles is accelerating. We are contributing to energy conservation in electric vehicles by developing deep groove ball bearings for automobiles compatible with high-speed rotation of motors installed in electric vehicles, and module products that add steering functions to hub bearings.

Providing high-performance bearings (core products)

Electric drive units installed in EVs and HEVs are required to conserve energy, and there is a growing demand for further reductions in friction and in size and weight. We have developed deep groove ball bearings for high-speed rotation of motors for the purpose of miniaturizing electric drive units, and have succeeded in high-speed rotation. It is already being marketed as a “High Speed Deep Groove Ball Bearing for EVs and HEVs” with dmn value* 1.8 million. We have optimized the internal specifications of bearings based on our long years of basic research, increased the strength by reviewing cage shapes and materials, and optimized cage and pocket shapes to suppress cage deformation under centrifugal force. These technologies minimize energy loss due to frictional resistance during bearing rotation and realize high-speed rotation. Because it has same dimensions as the conventional product, it can replace existing products and can be used in both grease and oil lubrication environments.

In recent years, the number of oil lubricated motors with excellent cooling effect to suppress heat generation has increased, and we have received many inquiries about our products for oil lubrication.

*dmn value: Index of the bearing rotational performance
Rolling element pitch circle diameter mm × rotational speed min⁻¹



High Speed Deep Groove Ball Bearings for EVs and HEVs

Providing high-performance module products (new areas)

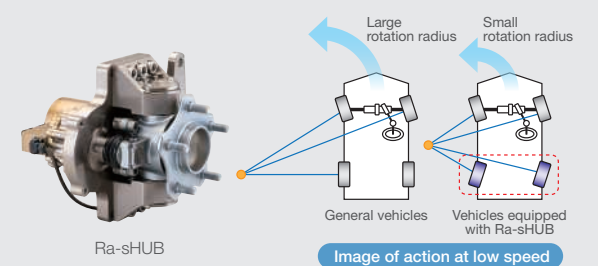
We have developed “Ra-sHUB” hub bearings with a steering function for rear wheels, which individually compensates for the steering angles on the right and left sides, by making full use of the technologies we have accumulated in our hub bearings, for which we boast the world’s No.1 market share.

The rear-wheel steering systems on the market are limited to some suspension systems, such as multi-link system used in luxury vehicles, and it is difficult to achieve a large steering angle with the existing structure.

“Ra-sHUB” is a module product that adds a steering function to our hub bearings with using our proprietary technologies. They are as small as existing hub bearings, and can be mounted on any type of suspension system, to achieve rear wheel steering. By controlling the steering angle of the rear tires from the steering angle and driving information of the front wheels separately from the left and right sides, the cornering performance and high-speed straight driving stability of the vehicle can be improved. At low speeds, the minimum rotation radius can be reduced to improve the vehicle’s small turning performance and tire traveling resistance. This product will also contribute to future energy savings in automatic driving.

Characteristics of “Ra-sHUB”

- Module product with steering function for hub bearings
- Controls the rear wheel angle independently on the left and right sides
- Rotation angle +/-10 degree
- Improved cornering performance and high-speed straight driving stability of vehicles
- Reduce the minimum rotation radius of the vehicle



Development of environment-contributing product

NTN continues unwavering efforts to realize its corporate philosophy by developing and providing higher-grade products that contribute to the environment while quantifying bearings, driveshafts and green energy products, which are our main products.

Trend in achievements and forecasts

Driveshafts and hub bearings, which are our main products and account for about 50% of our net sales, and green energy products contributed 1,398 thousand tons of CO2 reduction in the fiscal year ended March 31, 2022. Sales of S- to B-eco grade* environment-contributing products, which are the result of our recent development efforts, comprised 55.9% of net sales in the fiscal year ended March 31, 2022.

* Products are classified according to environmental factor standards specified for different products in line with technology standards across the world.

Calculation methods for environmental factors and eco-efficiency

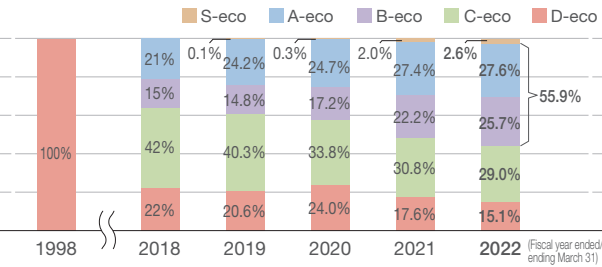
To quantify products' environmental friendliness, NTN adopted environmental factors and eco-efficiency that are defined in formula ① and ② as follows.

Environmental factors = $\frac{\text{Eco-efficiency of developed products}}{\text{Eco-efficiency of benchmark products}^1}$... ①

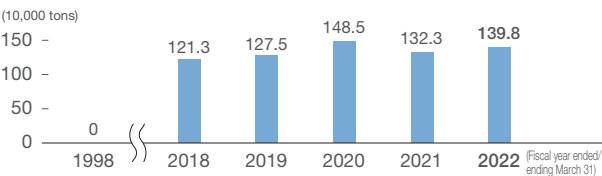
Eco-efficiency = $\frac{\text{Product value}^2}{\text{Environmental impact}^3}$... ②

*1 D-eco product (Products that help to reduce energy loss of finished products at the same performance level as that of around 1997)
*2 Values are quantified by using the QFD method (including CO2 reduction contribution of finished products)
*3 From the perspective of evaluating contribution toward measures against climate change, environmental impact is calculated as CO2 emissions generated throughout the process of raw materials mining to production (using the LCI calculation tool by the Japan Auto Parts Industries Association)

Trend in composition of environment-contributing products by grade (driveshafts and hub bearings)



Contribution to CO2 reduction*



Calculation standard
JAPIA LCI Calculation Guidelines by Japan Auto Parts Industries Association
(Consumer Use-phase LCI calculation tool)
*Applicable to S to C-eco products

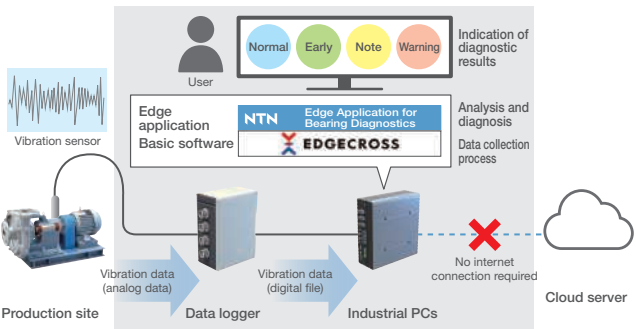
Increase efficiency of manufacturing equipment

The abnormality occurred in a bearing installed in machinery and equipment will cause the deterioration of performance and sometimes the shutdowns of the equipment. However, if the condition of the bearings is properly monitored, problems can be prevented by dealing with them at the appropriate time. Following the condition monitoring service provided by "Wind Doctor™," a condition monitoring system for wind turbines, we have developed a "Sensor Integrated Bearing Unit" for machine tools, as well as a trial version of a "Edge Application for Bearing Diagnostics," and are evaluating them for a variety of applications.



"Sensor Integrated Bearing Unit" for machine tools

Edge Application for Bearing Diagnostics



Bearing refurbish business

We are engaged in the business of refurbishing bearings used in various types of machinery and equipment, such as extra-large sized bearings for paper mill, large sized bearings for steel mill, and bearings for railway application. Bearing life can be extended by performing reconditioning based on our technical know-how before a failure occurs in the bearings in use, which leads to cost reductions for customers and shorter lead times for their purchases. We are contributing to the reduction of environmental burdens and the realization of a recycling-oriented society through this initiative because we can reduce the emissions of resources such as energy and steel material, as well as greenhouse gas emissions, compared to manufacturing new bearings.



Extra-large sized spherical roller bearing for paper mill application

Materiality

Realize a sustainable society using natural energy

KPIs and targets for the fiscal year ending March 31, 2023

● Development related to products and services that contribute to the stable operation of wind turbines → Completion of development themes

Contribute to spread of wind turbine and hydrogen society

In order to realize a carbon-free society, natural energy generated using wind and solar power to generate electricity and hydrogen energy that does not emit CO2 when used, and can be stored and transported to generate electricity at locations where it is required, are attracting attention as next-generation clean energy.

In the field of wind power generation, we have developed bearings for the main shafts of large wind turbines, which are highly durable, and have begun maintenance for wind power generation. In the hydrogen-related field, we have also developed hydrogen resistant bearings that prevents premature failure of bearings caused by hydrogen atoms.

We will contribute to the realization of a sustainable society through product development and business initiatives.

Wind power

Progress in wind power generation is expected toward the realization of carbon neutrality. In order to meet the needs for stable operation of wind turbines, we are marketing "left-right rows asymmetrical spherical roller bearings," which are often used as main shaft bearings in large wind power generation equipment, to improve service life under actual load distributions such as wind loads in spherical roller bearings, which are often used as large wind turbine main shaft. In addition, as a countermeasure against wear caused by differential sliding characteristic of spherical roller bearings, DLC (diamond like carbon) film with excellent wear resistance is formed on the roller surface to enhance bearing reliability. Furthermore, in order to improve the operation rate of wind power generation, we provide wind power generation operators with a service that distributes operational status using "Wind Doctor™," a Condition Monitoring System (CMS) for wind turbines. We have recently entered into a business alliance with Hokutaku Co., Ltd. (hereinafter referred to as "Hokutaku"), which specializes in wind power generation maintenance, and will begin maintenance for wind power generation. Based on our accumulated "Wind Doctor™" technology for high precision detection of bearing abnormalities with and the identification of defective parts, we will provide prompt maintenance services utilizing the extensive experience and know-how of Hokutaku. Through this business alliance, not only will the man-hours required by the

operator to make arrangements be reduced, but also the operation shutdown time will be minimized by promptly performing maintenance after an abnormality is detected.

As wind turbines continue to grow in size and offshore wind turbines become a major source of wind power in the future, improvements in the accuracy of condition monitoring and appropriate maintenance based on accurate data analysis will become even more important to ensure stable operation of equipment. We will contribute to the expansion of the market for wind power generation equipment as a supplier that can provide these series of services on a one-stop basis.



Wind Doctor™



Asymmetrical spherical roller bearing

Hydrogen

For the purpose of saving energy, there is a tendency to reduce the viscosity of lubricating oil used in rolling bearings and to reduce the supply volume due to reducing the agitation resistance of oil and miniaturizing of the oil supply pumps, and bearings are required to cope with more severe lubrication conditions. Under such poor lubrication, lubricant film is likely to run out, and when the rolling elements and raceways come into contact with each other and a new surface on the raceway surface is created, the lubricating oil decomposes, generating hydrogen atoms that can enter the steel material, resulting in premature bearing failure. This is so-called hydrogen embrittlement.

We have developed a hydrogen embrittlement-resistant bearing that has more than three times a longer life compared to our standard bearing against premature failure of bearings caused by hydrogen through the adoption of a new steel material with many hard, fine metal compounds dispersed on the bearing raceway and a newly developed special heat treatment technology.

Furthermore, we aim to apply this technology to various infrastructure facilities required for the social implementation of hydrogen, which is attracting attention as a next-generation energy.



Hydrogen embrittlement resistant bearing

Please refer to our website for details on "Contribute to carbon-free society."
<https://www.ntnglobal.com/en/csr/idea/carbon-free.html>

Materiality

Respond to climate change

KPIs and targets for the fiscal year ending March 31, 2023	
● Reduce CO2 emissions in business activities (Scope 1 and 2)	50% reduction by the fiscal year 2030 (compared to the fiscal year 2018) Achieve carbon neutrality by the fiscal year 2035
● Reduce CO2 emissions in business activities (Scope 3)	Achieve carbon neutrality by the fiscal year 2050

Carbon neutrality promotion project launched

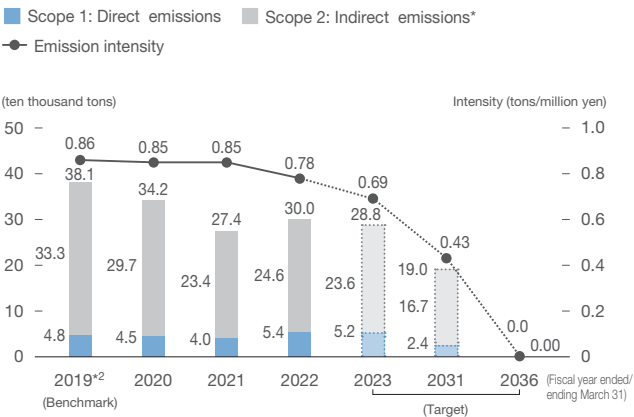
In July 2022, the Group launched the Carbon Neutrality Promotion Project, which is supervised by the President, Executive Officer. With the aim of steadily promoting the action plan to achieve the carbon neutral target, we are working on three priority measures: (1) visualization of power consumption, (2) renewable energy purchase plan, and (3) introduction of an internal carbon pricing system.

CO2 emissions reduction results

The NTN Group is committed to reducing CO2 emissions and emission intensity in all of its business activities. We undergo third-party verification^{*1} to ensure the reliability of the data. In the past, from the perspective of reducing energy consumption, CO2 emissions were calculated using the electricity emission factors of the location-based method for the benchmark year, but from this fiscal year we are switching to calculating CO2 emissions using the electricity emission factors of the market-based method.^{*2} In the fiscal year ending March 31, 2031, we aim to reduce CO2 emissions by 50% of fiscal year ended March 31, 2019 levels. We are working on activities with the goal of achieving carbon neutrality by the fiscal year ending March 31, 2036.

^{*1} Please refer to the website for the CO2 emissions verification opinion form.
<https://www.ntnglobal.com/en/csr/pdf/kensyouikensho2022.pdf>
^{*2} Calculated using emission factors sourced from "Emissions Factors 2021" (IEA) in overseas sites.

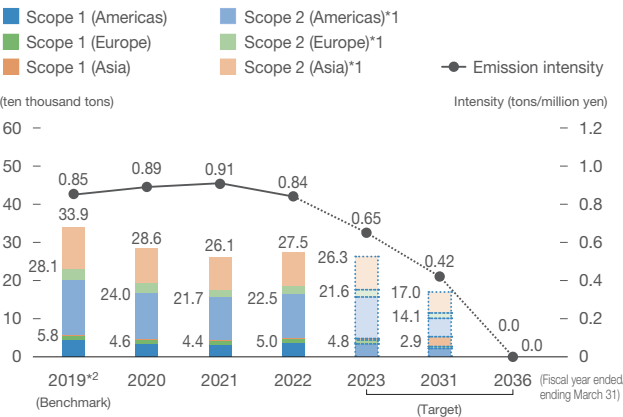
CO2 emissions/emission intensity [Japan]



^{*1} Calculated using emission factors sourced from "Electric Utility Emission Factors" (Ministry of the Environment and the Ministry of Economy, Trade and Industry).
^{*2} Set the carbon neutral benchmark as fiscal year ended March 31, 2019.

Please refer to the website for Environmental data of each site
<https://www.ntnglobal.com/en/csr/environment/sitereport/total.html>

CO2 emissions/emission intensity [Overseas]



^{*1} Calculated using emission factors sourced from "Emissions Factors 2021" (IEA).

Please refer to the website for Environmental data of each site
<https://www.ntnglobal.com/en/csr/environment/sitereport/total.html>

Energy conservation of production facilities

The NTN Group is working to reduce CO2 emissions (Scope 1) generated by processing machines and heat treatment facilities in the manufacturing process. For heat treatment facilities, which are major sources of CO2 emissions, we have completed fuel conversion to LPG^{*} and city gas at major facilities as a first-stage energy-saving measure. In the future, we will not only expand the use of highly efficient high-frequency heating equipment and electric furnaces based on the renewable energy use, but also consider the use of green ammonia and hydrogen, which do not emit CO2 during production and use, to promote carbon neutrality through the use of diverse energy sources.

^{*}Liquefied petroleum gas

Improvement of heat insulation of outer wall of heat treatment furnace

The NTN Group is working to reduce energy loss in the heat treatment process by adding heat insulating materials to the outer walls of heat treatment furnaces and by applying heat insulating coatings. These measures have resulted in reduced use of city gas and electricity and lower heat dissipation from the furnace body, thereby reducing CO2 emissions and improving the working environment.

Construction example (Fiscal year ended March 31, 2022)

Site name	Measures	Facilities	CO2 reduction (tons-CO2)
NTN Mie	Adding insulation	City gas furnace	19
NTN Noto	Heat-insulating coating	Electric furnaces	58

Introduction of renewable energy

As part of our efforts to achieve carbon neutrality, we have installed renewable energy generation equipment for our own consumption at our business sites under various schemes. (PPA^{*1}, leasing, and self-investment) to reduce CO2 emissions (Scope 2). Emissions by 412 tons-CO2 in Japan and 8,210 tons-CO2 overseas were reduced in fiscal year ended March 31, 2022.^{*2}

^{*1} PPA (Power Purchase Agreement): A contract to install solar power generation equipment owned by a third-party power producer on a roof or other location and purchase its electricity.

^{*2} Calculated using emission factors sourced from "Electric Utility Emission Factors" (Ministry of the Environment and the Ministry of Economy, Trade and Industry) in Japanese sites and calculated using emission factors sourced from "Emissions Factors 2021" (IEA) in overseas sites.

Results of renewable energy generation (Fiscal year ended March 31, 2022)

Region	Power generation (kWh)	CO2 reduction (tons-CO2)
Japan	1,021,348	412
France	1,100,990	56
China	13,279,603	8,154
Total	15,401,941	8,621

Self-invested photovoltaic installations on roofs

Hikari Seiki Industry Co., LTD. (Japan) installed a total of 350 solar panels on the roof of its new CVJ plant, which began generating electricity in July 2021 and reduced CO2 emissions by 40 tons in the fiscal year ended March 31, 2022.^{*} The equipment has also disaster/emergency power supply capabilities as an option.

^{*}Calculated using emission factors sourced from "Electric Utility Emission Factors" (Ministry of the Environment and the Ministry of Economy, Trade and Industry) in Japanese sites

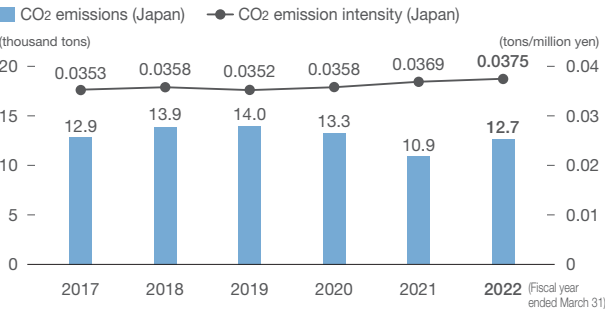


New CVJ plant (Hikari Seiki Industry)

Reducing CO2 emissions in logistics

The NTN Group is reducing CO2 emissions (Scope 3 Category 9) during product transportation by improving logistics efficiency. Main measures include "shortening transportation distances by optimizing distribution routes," "increasing the loading ratio by expanding the use of module outer boxes," "reducing the number of containers by increasing the loading ratio of export containers" "promotion of reuse and recycling (repair) of wooden pallets," and "having carries strictly adhere to non-idling requests", and so on. In the fiscal year ended March 31, 2022, CO2 emissions from Japanese product transportation were 12.7 thousand tons-CO2/year (target: 12.3 thousand tons-CO2/year) and CO2 emission intensity was 0.0375 tons-CO2/ million yen (target: 0.0345 tons-CO2/ million yen) and falling short of both the CO2 emissions and emission intensity targets. The reason for the underachievement was mainly transportation inefficiency (high frequency small lots) due to the COVID-19 pandemic and shortage of semiconductors. To do deal with this, we are promoting improvement of transportation efficiency by optimizing truck loading capacity.

CO2 emissions/emission intensity in logistics



Initiatives for TCFD recommendations

In May 2021, we expressed our support of TCFD (Task Force on Climate-related Financial Disclosures) recommendations. We identify the risks and opportunities posed by climate change in our business and reflect them in our management strategies. We also disclose information based on TCFD recommendations. Through dialog with a wide range of stakeholders, the Group will further strengthen its efforts to address climate change and contribute to the sustainable development of society through its business activities.

Governance

The Group has established the Sustainability Committee as an organization to promote sustainability management, and has established a system to report its efforts to the Board of Directors as appropriate.



Strategy

We link the results of scenario analysis in line with TCFD recommendations to related materiality indicators and targets (Opportunity : reduce energy loss, Risk: respond to climate change), and develop them into business activities. In addition, we concentrate our R&D resources on areas that lead to “carbon neutrality (environmental impact reduction and decarbonization)” and the “pursuit of safety and comfort,” and are accelerating our R&D activities for future growth.

Risk management

Our financial condition, results of operations and cash flows could be impacted by extreme weather conditions (such as operating or shutting down operations due to heavy rain, floods or storms) associated with climate change (temperature increases), and by stricter environmental regulations (such as increased procurement costs for raw materials and energy due to the introduction of carbon taxes) in the countries and regions in which we operate.

Regarding the effects of climate change (temperature increases), the risks and opportunities assumed based on the scenario in which the temperature rise during the 21st century is “4 °C” and “less than 1.5 °C” are as follows.

■ Outline of the future society assumed in scenario analysis

	When the temperature rises by 4 °C (Physical)	When the temperature rises less than 1.5 °C (Transition)
Future image of society	<ul style="list-style-type: none">Environmental policies such as from the government are passive, and the move to low-carbon and decarbonization has not progressed.The scale and intensification of natural disasters due to climate change are progressing.The number of hot days increases even in seasons other than summer, increasing the risk of heat stroke.	<ul style="list-style-type: none">Due to the aggressive environmental policies of the government and other parties, carbon taxes have been introduced, fossil fuel-derived electricity is limited, and the industrial structure is centered on renewable energy (wind power, hydrogen, etc.).The industry as a whole is strengthening efforts such as energy saving to reduce CO2 emissions.In the automobile industry, the electrification and EVs shift is progressing.

■ Risks and opportunities

Classification		Anticipated risks and opportunities	Our countermeasures
Risks	Physical	Downtime at our plants and within the supply chain due to extreme weather conditions (heavy rain, floods, storms)	<ul style="list-style-type: none"><Internal>Regular confirmation using a hazard map of domestic business sites<Business Partners>Encouragement to build BCP and BCM through Procurement Policy briefing sessions and CSR Procurement GuidelinesIntroduction of supplier crisis management system
		Risk of heat stroke among employees at plants and such	<ul style="list-style-type: none">Identification of working environments where air conditioning is not effectiveSystematic implementation of heat measures
	Transition	Increase in procurement and operating costs due to carbon taxes, etc.	<ul style="list-style-type: none">Promotion of decarbonization in our business activitiesConsidering the introduction of internal carbon pricing
Opportunities	Physical	Increase in demand for solutions that are useful in preparing for natural disasters and in the event of disasters	<ul style="list-style-type: none">Securing a lifeline that prevents power shutdown due to natural disasters (providing stationary independent power supply units and transportable independent power supply units to the market)
	Transition	Increase in demand for energy saving in mechanical devices	<ul style="list-style-type: none">Reduction of CO2 emissions by core products
		Spread of wind power generation equipment	<ul style="list-style-type: none">Provision of large bearings and CMS services for wind turbines
		Spread of hydrogen energy	<ul style="list-style-type: none">Development of product technology and market provision of bearings for hydrogen energy-related equipment
		Spread of EVs and electrified vehicles	<ul style="list-style-type: none">Development of product technology and market provision of electric module products

Metrics and targets

Among the materiality of the Group, the target of “respond to climate change” is “Achieve carbon neutrality by the fiscal year 2035 (by the fiscal year 2050 for the entire supply chain).” Also, we have newly set “50% reduction in CO2 emissions in business activities in the fiscal year 2030 compared to the fiscal year 2018” as KPIs (management indicators) for the fiscal year ending March 31, 2023 and beyond.

Materiality

Provide safety and comfort

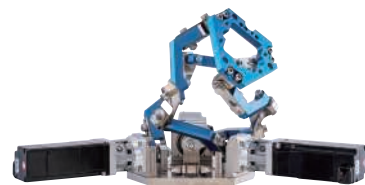
KPIs and targets for the fiscal year ending March 31, 2023

- Development related to robot-related modules → Completion of development themes
- Raise awareness of independent power supply units and implement proposal activities for disaster mitigation and disaster prevention

In order to support people's lives, there is an urgent need to respond to labor-savings in line with the shrinking working population at manufacturing sites. On the other hand, we are also promoting disaster prevention measures to reduce the impact on people's lives in the event of a disaster or similar event. We have developed "i-WRIST™," a wrist joint module that contributes to human substitution at the production site. We have also developed and marketed "N³ N-CUBE," which houses small-sized wind generators, solar panels, and storage batteries in containers from the perspective of disaster prevention and disaster mitigation. Through these products, we provide peace of mind and comfort to customers, and contribute to local communities.

Robot-related

Based on our knowledge of driveshafts, we have developed "i-WRIST™," a wrist joint module for robots that employs our own linking mechanism. "i-WRIST™," is compact, space-saving, and has a wide range of angles. It also allows vertical articulated robots etc. to change difficult and tight positions (angles) at the same speed, and at the shortest distance, as a human wrist. "i-WRIST™," is equipped with cameras and dispensers, and by equipmentalize them, is marketed as an automated visual inspection equipment or automated coating device for grease and adhesives. By replacing operations performed by humans, it has been highly rated in the market for leading to the stability of appearance quality and shortening the cycle time.



i-WRIST™



"N³ N-CUBE," which was installed as an eco toilet at the Tado Saniyo Park in Kuwana City, Mie Prefecture, Japan



"N³ N-CUBE," which was adopted as independent power supply for the flood prevention center in Yoshida Town, Shizuoka Prefecture, Japan

Disaster mitigation and disaster prevention

From the viewpoint of disaster mitigation and disaster prevention in the event of natural disasters, we have developed and marketed "N³ N-CUBE," a transportable independent power source containing small-sized wind generators, solar panels, and storage batteries in containers. Bases for flood protection and rescue activities in the event of disasters along the coast, as well as flood prevention centers for stockpiling and storing supplies, are in place in each region. It has been proposed that they be used to supply electric power for lighting and air conditioners in the centers in normal times, and to be used it an emergency power source in the event of a disaster. We have also developed an "N³ N-CUBE" equipped with a circulation type flush toilet and treatment tank to be installed at parks and facilities in mountainous regions etc. where commercial power has not been introduced. Water used in the toilet is filtered in the treatment tank and circulated as reclaimed water. The power used here is generated by "N³ N-CUBE." Maintenance only requires a few changes of water a year, and no water supply or sewerage construction is required. Because water is recycled as reclaimed water, it is possible to use clean water without draining it outside. The exterior of the toilet is also equipped with digital signage powered by "N³ N-CUBE," which lights up the area around the toilet, even at night, contributing to security.

Materiality

Resource recycling and pollution prevention

KPIs and targets for the fiscal year ending March 31, 2023

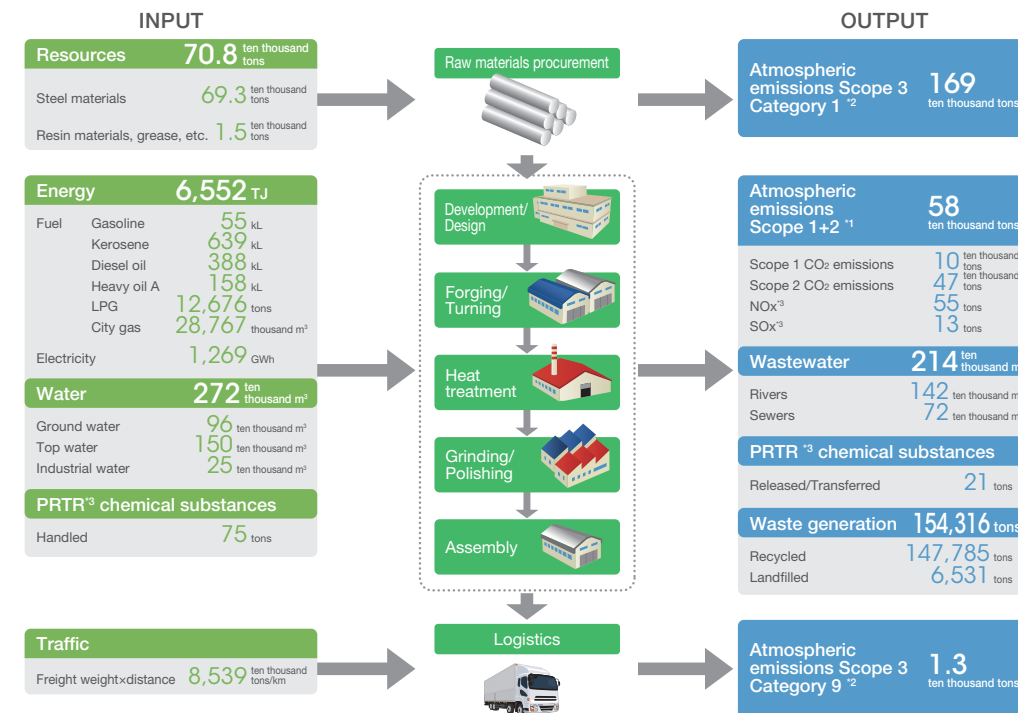
- Water consumption intensity → 4.30 m³/million yen (Japan) 3.14 m³/million yen (Overseas)
- Waste generation intensity → 164 kg/million yen (Japan) 279.4 kg/million yen (Overseas)
- Recycling rate → 97.9% (Japan) 96.9% (Overseas)

The NTN Group has established a framework to comprehensively promote the 3Rs (Reduce, Reuse, and Recycle), which take into consideration the sustainable use of natural resources and the reduction of input resources such as raw materials and water, as well as waste. In addition, we are thoroughly managing chemical substances used in our products and manufacturing processes, and actively promoting the conversion of procured products that contain chemical substances designated to PRTR* law into alternative products. We have set annual targets for the intensity of waste generation and recycling rate, as well as amount of chemical substances designated to PRTR law handled, and are promoting efforts to achieve these targets.

*Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof
Please refer to the website for details on "Resource Recycling and Pollution Prevention."
<https://www.ntnglobal.com/en/csr/environment/chemical.html>

Material balance

Material balance of business activities (Fiscal year ended March 31, 2022)

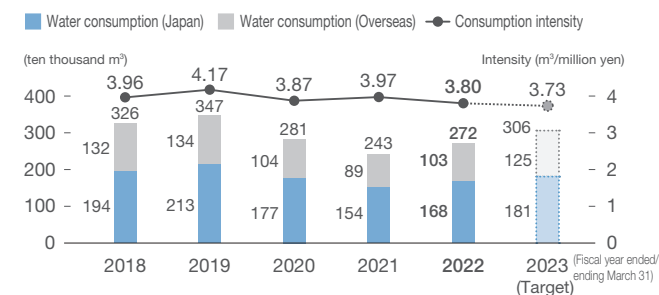


*1 Calculated using emission factors sourced from "Electric Utility Emission Factors" (Ministry of the Environment and the Ministry of Economy, Trade and Industry) in Japanese sites and calculated using emission factors sourced from "Emissions Factors 2021" (IEA) in overseas sites.

*2 Scope 3 CO₂ emissions are results in Japan only.

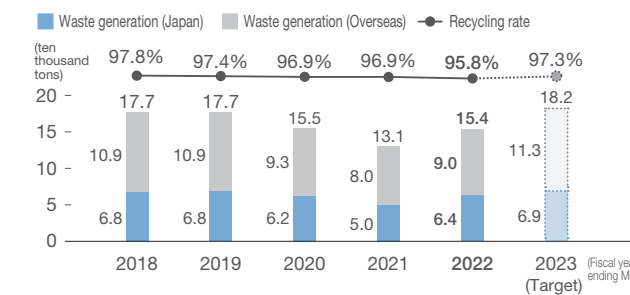
*3 NO_x, SO_x, PRTR chemical substances, and recycled amount are results in Japan only.

Water consumption/consumption intensity [Japan and Overseas]



Please refer to the website for Environmental data of each site
<https://www.ntnglobal.com/en/csr/environment/sitereport/total.html>
*Please refer to the website for the results of water stress analysis by "AQUEDUCT" and water consumption by region.
<https://www.ntnglobal.com/en/csr/environment/chemical.html#anchor01>

Waste generation/recycling rate [Japan and Overseas]



Please refer to the website for Environmental data of each site
<https://www.ntnglobal.com/en/csr/environment/sitereport/total.html>

Materiality

Improve the reliability of products and services
(Quality assurance, stable supply)

Procurement activities with an emphasis on
environment and society

Materiality

Improve the reliability of products and services
(Quality assurance, stable supply)

KPIs and targets for the fiscal year ending March 31, 2023	
● Maintain high level of customer satisfaction	➡ More than 90% of responses for “Excellent” and “Good”
● Maintain 100% certification for quality management systems (ISO9001/IATF16949)	
*Applies to domestic and overseas consolidated manufacturing subsidiaries (excluding bases that have not started mass production).	
● Number of participants in specialized quality education courses	➡ 100 or more
● Progress in restructuring the domestic core systems	
[1] Sales and logistics, financial accounting, human resources and salaries, and technology areas	➡ Introduction completed as of the fiscal year ended March 31, 2022
[2] Production area	➡ Introducing by site (completed at all sites in March 2024)

Build the quality assurance system

Create the quality to improve customer satisfaction

Customer needs for lightweight products, quieter operation, lower torque leading to energy savings, and longer product life are changing over time. In order to ensure that our customers are satisfied with our products, it is important to respond swiftly to their changing demands and to build relationships of trust with them. We strive to maintain and improve product quality globally in accordance with our Basic Quality Policy, which serves as the basic philosophy for all of our manufacturing activities, in order to create quality that satisfies our customers.

We also conduct customer satisfaction surveys as an opportunity to hear directly from our customers about their satisfaction level and requirements. In the survey for the fiscal year 2021 (ended March 31, 2022), a total of 113 customers responded and 88% of the overall evaluations were “Excellent” or “Good.” Going forward, we will continue to provide quality that is responsive to customer needs in order to further improve satisfaction.

Quality management system

In order to improve customer satisfaction and provide products/services in a consistent manner, the Group’s domestic and overseas manufacturing sites have acquired ISO9001 certification, which is an international management system standard. We are steadily working to acquire certification for new businesses and newly launched plants. 100% of our domestic and overseas consolidated subsidiaries related to manufacturing have acquired certification for their quality management systems.

We have also acquired IATF16949 certification, a standard for the automotive industry, and JISQ9100 and Nadcap, standards for the aerospace industry, as well as CRCC (China) certification for the railroad industry.

Stabilize new core system

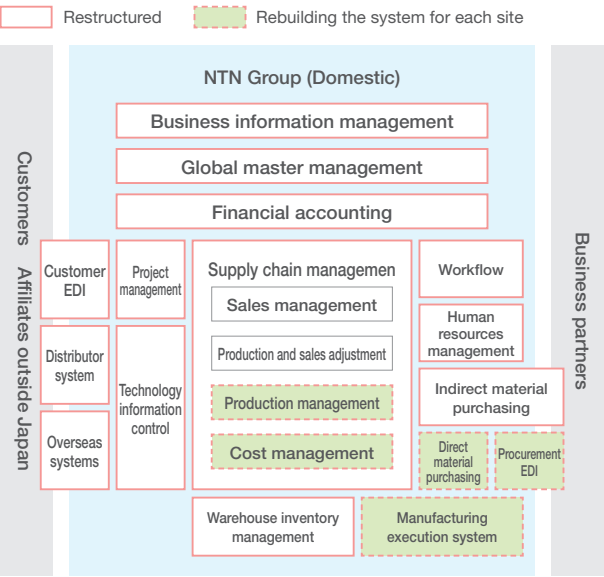
As a company-wide project, we are rebuilding our mission-critical systems by standardizing business processes and systems using ERP* and other new packaged systems. This will serve as an IT foundation to support future DX promotions, and we are promoting business speed and service levels as well as more

efficient operations. Following the start of operations of new systems in the areas of financial accounting, human resources and salaries, and technology, a new system for sales, logistics, supply and demand adjustment, inventory management, etc. of finished products in the SCM field began full-scale operations in August 2020. Thereafter, we are promoting activities to introduce new systems into the production, procurement, process, work-in-process, and cost domains at each plant.

The new systems have enabled us to improve the efficiency of drawing and prototype control through the digitization of sales activities and the introduction of a project management system, to speed up price and delivery deadline response, to strengthen inventory management, and to enhance cost management. In addition, we aim to ensure a stable supply and respond flexibly to fluctuations in demand based on factual data such as fresh demand information, inventory information, and sales results.

*ERP is an abbreviation of Enterprise Resource Planning (enterprise resource planning).
Packaged software that oversees the company’s core operations, including sales, logistics, production, accounting, and human resources.

■ Overview of NTN core systems using ERP and other package systems (as of June 2022)



Please refer to our website for other initiatives related to “Improve the reliability of products and services (Quality assurance, stable supply).”
<https://www.ntnglobal.com/en/csr/sc/customer.html>

Materiality

Procurement activities with an emphasis on environment
and society

KPIs and targets for the fiscal year ending March 31, 2023	
● Conduct CSR questionnaires for suppliers continuously and maintain and improve achievement level of results	

Basic approach to procurement activities

In April 2021, we formulated a Procurement Policy corresponding to each SDGs. Based on the perspectives of “Fairness/impartiality,” “Compliance with Laws and Regulations,” “Green Procurement,” and “Coexistence and Co-prosperity,” purchasing departments at our head office play a central role in building a relationship of trust with business partners and we are conducting purchasing activities. Based on the “NTN Group Green Procurement Standards,” we are promoting green procurement, which prioritizes environmental preservation efforts and procurement from business partners with superior environmental quality. We have also established “NTN CSR Procurement Guidelines” and are requesting active promotion of CSR activities. We are also working to achieve local procurement at all of our manufacturing sites, including those outside Japan, and to procure materials from optimal locations globally.

In May 2022, we announced our “Declaration of Partnerships Building” with the aim of building new partnerships by promoting collaboration, coexistence and co-prosperity with business partners in the supply chain and businesses seeking to create value.

Risk management for suppliers

From the viewpoint of risk management, we begin transactions with our business partners after checking their management structure, quality, and environmental management.

We also conduct annual survey for business partners, which we have already conducted transactions with, to continuously monitor their business conditions. If we determine that a transaction involves a high risk, we strive to minimize our procurement risk and ensure stable procurement by implementing risk reduction measures commensurate with the magnitude of the impact, taking into consideration procurement parts, transaction amounts, etc.

With regard to a natural disaster or an infectious disease, we have established a risk management database, and in the event of an emergency, we immediately confirm the safety of business partners and manage the risk associated with ensuring a stable supply of our products throughout the supply chain.

CSR questionnaires for suppliers

We conduct annual survey of business partners to further raise awareness of “NTN CSR Procurement Guidelines” and to confirm compliance.

By the fiscal year 2021 questionnaire, the achievement ratio of human rights and labor, and quality and safety was more than 90%, indicating that business partners were also highly conscious. However, the ratio of business continuity management (BCM), social contribution, and CSR procurement was less than 80%, and it meant that their awareness was not high at this stage.

In recent years, companies have been required to not only achieve corporate performance (economic value), but also to be an entity that is needed by society (social value). To help business partners understand that social value is important, we will continue to engage in awareness-raising activities.

■ CSR questionnaire for suppliers

Questionnaire items	
1	Compliance
2	Human rights and labor
3	Environment
4	Quality and safety
5	Information security
6	Business Continuity Management (BCM)
7	Social contribution
8	CSR procurement

■ Degree of achievement according to CSR questionnaire results



Please refer to our website for other initiatives related to “Procurement activities with an emphasis on environment and society.”
<https://www.ntnglobal.com/en/csr/sc/client.html>

Respect for human rights	Promote safety and health
Human resource development	Promote diversity

One of the ESG issues facing the Group is the “prosperous human development.” We are advancing specific initiatives based on the following pillars: “securing human resources who will lead the next generation to take on the challenge of transformation,” “creating a rewarding environment that respects the diversity of employees,” “fostering a culture of learning and development in the workplace,” “realizing a workplace where employees can work safely and healthily” and “respect for human rights.”

Materiality

Respect for human rights

KPIs and targets for the fiscal year ending March 31, 2023

- Analyze and evaluate the results of questionnaires of overseas affiliates
- Survey on the situation of foreign workers working in Japan (Monitoring)

Basic approach to human rights

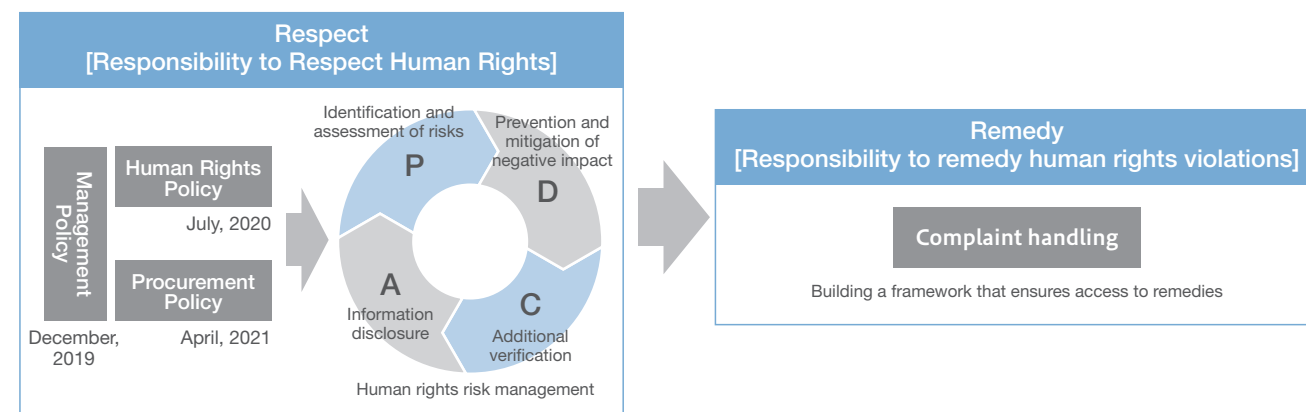
The Group believes that in order to contribute to a sustainable society and continue to be a “company needed by society,” it is essential to fulfill our corporate responsibilities relating to respect for human rights and to earn the trust of society. Accordingly, we have included “respect for human rights” in our Management Policy. In addition, we have established a Human Rights Policy, which stipulates that we will not violate any form of human rights. We also strive to create a work environment in which all employees of the Group can work safely and comfortably.

Human rights due diligence

Based on the two perspectives of “respect” and “remedy” set forth in the United Nations Guiding Principles on Business and Human Rights, our Group prioritizes “responding to human rights risks in employees,” “responding to human rights risks in the supply chain,” and “building a framework that ensures access to remedies.” In the fiscal year ended March 31, 2022, we began identifying negative human rights impacts in our business activities (P: identification and assessment of risks) in order to develop human rights due diligence. We first conducted a human rights questionnaire for our overseas affiliates in order to ascertain the actual situation. We will analyze and evaluate the results of the questionnaire and promote the identification of risks.

■ Overview of human rights due diligence

United Nations Guiding Principles on Business and Human Rights



Human Rights Policy

In order to further promote human rights initiatives, we have formulated a Human Rights Policy in which all Group employees share common sense of values related to human rights and which serves as the basis for their day-to-day activities and business activities. In doing so, we are making efforts to ensure that human rights are respected.

Based on the Human Rights Policy, we will address human rights issues which are gaining more and more global attention, as exemplified by the Sustainable Development Goals (SDGs) and the UK’s Modern Slavery Act, and fulfill our corporate responsibility for respecting human rights.

Outline of Human Rights Policy

- NTN will respect internationally-recognized human rights.
- NTN will not violate the human rights of others.
- NTN will respond appropriately to any negative impacts its business activities may have on human rights.

Responding to human rights risks in employees

Sound labor-management relations based on labor-management consultations

We strive to share the content of each measure between labor and management in a forum where labor and management can exchange information with each other. We hold quarterly “Labor-Management Roundtable Meetings,” in which executive managers provide thorough explanations about the Business Management Policy, management environment, and other topics to the labor union and listen to the views of the labor union. In addition, we hold labor-management committee meetings as appropriate according to each measure that leads to improvement of “motivation to work” and “ease of work,” with the aim of exchanging opinions to deepen mutual understanding and deciding on work styles that lead to improvement of attractiveness of a place to work.

Survey of foreign workers

We will investigate the working condition of employees in our group, grasp the actual condition of foreign workers, and respond to issues identified.

Responding to human rights risks in the supply chain

Correspondence to forced labor and child labor (Conflict mineral surveys)

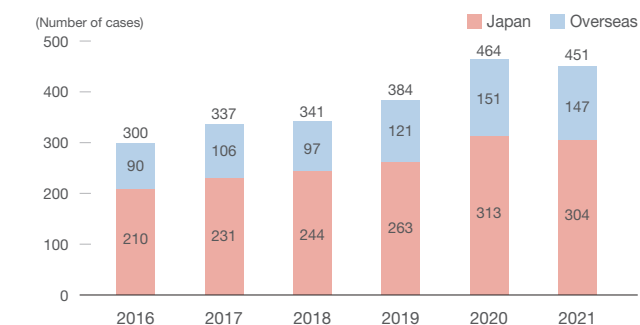
Incomes from the mining of tin, tantalum, tungsten and gold (3TG) in the conflict areas of the Democratic Republic of the Congo (DRC) and neighboring countries could be a source of capital for armed forces, which could lead to human rights infringement, illicit mining and smuggling.

In April 2016, we established our CSR Procurement Guidelines, upholding the policy of “Responsible mineral procurement,” to continuously monitor whether the mineral resources contained in materials and components used in our products are mined from conflict and high-risk areas.

In the fiscal year ended March 2022, we traced back through our supply chain of 256 business partners to identify the material smelters, and more than 93% of such partners reported that they do not use any conflict minerals. We will continue to conduct this survey periodically.

Companies listed on U.S. Stock Exchanges are required to disclose any use of conflict minerals under the U.S. Dodd-Frank Act. Based on the results of the above survey, we respond to inquiries from our customers regarding conflict minerals. As human rights issues are gaining attention globally, corporate awareness of such issues is growing. Regardless of the U.S. Dodd-Frank Act, the number of companies voluntarily eliminating the use of conflict minerals is increasing as shown in the chart below.

■ Number of conflict mineral surveys (responding to requests from customers)



Excerpt from NTN CSR Procurement Guidelines

● Responsible mineral procurement

Mineral resources included in materials and components will be checked for any negative social impacts on human rights, the environment, etc. If a negative impact is suspected or verified to be present, we will substitute a method that does not use those conflict materials.

● Prohibition of child labor

We will not violate the obligation to protect children and will not employ children that do not meet the minimum working age of each country and region.

● Prohibition of forced labor

We will ensure that all labor is voluntary and that employees can leave their job freely. We will not use forced labor.

Materiality Promote safety and health

KPIs and targets for the fiscal year ending March 31, 2023	
● Operate occupational safety and health management system continuously	➡ 6 domestic manufacturing affiliates have acquired GSC certification (as of March 2022, 2 companies have acquired certification)
● Maintain “White 500” certification for Health and Productivity Management Organization (Large enterprise category)	
● Achievement of the annual plan of the Risk Survey targeting manufacturing sites	➡ 100%

Safety and health efforts

Nurturing strong safety consciousness

Through in-house training, we train a number of risk assessment (RA) trainers at each business site, and conduct RA implementation guidance by RA trainers on a workplace-by-workplace basis to promote the improvement of RA capabilities of employees. Similarly, we have trained risk prediction (KY) trainers, implemented KY training on a workplace-by-workplace basis, and improved the KY capabilities of employees to develop people who are well-versed in safety practices and who do not act unsafely.

To prevent human error, we provide training to managers with the aim of improving social skills that cannot be attained only by providing systems or knowledge, such as status awareness, decisionmaking, communications and leadership. In addition, we are using the Safety Assessor qualification system to train engineers who can promote the intrinsic safety of equipment.

Intrinsic safety of equipment

Risk assessment (RA) is conducted for equipment at the time of installation, after a certain period of time elapses after installation, when equipment or content of work is modified, when something is pointed out as a result of safety patrols, or when near misses occur, in order to improve the intrinsic safety of equipment.

To deal with risks that are identified in RAs, we implement safety initiatives using engineering measures, such as safety covers and interlocks, in addition to intrinsic measures for reviewing operations. Furthermore, we consider risk reduction by means of managerial measures (procedures, rules, etc.) and protective equipment. Remaining risks are recorded in the residual risk management sheet in accordance with the unified company-wide residual risk management operation. Based on this, stickers indicating residual risk levels are put on the equipment for visualization. Furthermore, training on the residual risk of the equipment is provided to operators to make sure that they know where the hazardous risk lies.

Creating structures to support safety

We are promoting the introduction of an occupational health and safety management system to create a

system that supports the safety of the Group. By continually implementing our management system, we will strive to comply with laws and regulations and improve the level of safety and health.

All of our manufacturing sites have completed ISO 45001^{*1} certification, an international standard.

In the domestic manufacturing affiliates, two companies have acquired ISO 45001 certification, eight companies have acquired OSHMS^{*2} certification, and two companies have acquired GSC^{*3} evaluations. Currently, four affiliates are in the process of acquiring GSC certification.

Three overseas affiliates have also acquired ISO 45001 certification.

^{*1} ISO45001: International standards for occupational health and safety management systems
^{*2} OSHMS: Japanese standard in compliance with the MHLW's "Guidelines on Occupational Safety and Health Management Systems" (OSHMS Guidelines)
^{*3} GSC: MHLW's project for assessing occupational safety and health of small and medium-sized business sites (Good Safety Company)

Approach to Kenko Keiei* (health management)

Certified as “Health and Productivity Management Organization 2022 Large enterprise category (White 500)” for the second consecutive year

In recognition of our efforts, we were certified by the Ministry of Economy, Trade and Industry and the Japan Health Council as one of the “White 500”, the top 500 corporations in the Health and Productivity Management Organization 2022 (Large enterprise category). This year is the second consecutive year of certification.

In fiscal 2022, 2,869 corporations applied for the Health and Productivity Management Organization (Large enterprise category), and the top 500 corporations, including ours, were certified as “White 500” as corporations practicing particularly excellent health management.



^{*}Health management is a registered trademark of the NPO Health Management Research Association.

Please refer to our website for other initiatives related to “Promote safety and health.”
<https://www.ntnglobal.com/en/csr/sc/employee.html>

Materiality Human resource development

KPIs and targets for the fiscal year ending March 31, 2023	
● Number of participants in “NTN Next Leader Program”	➡ 50
● Holding of “NTN PROUD AWARD,” as ESG Corporate Award	

Basic approach to human resource development

Our human resource development aims to foster a culture of learning and cultivation in the workplace through the development of human resources capable of achieving business objectives and quickly responding to changes in the business environment, based on the basic concept of human resource policy of “enriching human resources” aimed at realizing a “NAMERAKA Society.” To achieve this objective, our basic policy for human resource development is to foster three types of human resources: (1) human resources who are competent in the international community, (2) human resources who are independent as individuals, and (3) human resources with creativity. Our human resource development is based on individual self-development and on-the-job training (OJT). In addition to providing opportunities and various support systems to promote this, we continue to provide various types of training as Off-JT*, if necessary, with a long-term perspective in a systematic, planned and organized manner.

^{*}Education and training outside the workplace

Manager personnel development

In addition to conventional training for managers, we have newly launched a “NTN Next Leader Program” for young managers with the aim of developing the number of candidates for next-generation management, who can make decisions on management issues on long-term perspective.

This training is a curriculum for systematically learning the thinking and knowledge necessary for management through a selective system. Through these and other training programs, we will strive to cultivate management-level candidates systematically and quickly.

Introduce communication tools in response to work style reforms

In order to reform work styles and prevent the spread of the new coronavirus, we are developing an environment that enables flexible telework that is not constrained by location. We have introduced a communication tool with functions such as web conferencing, business chat, and schedule sharing using the cloud, with the aim of revitalizing communication and improving productivity during telework.

We are also working to strengthen information security for communication tools so that employees can conduct their work safely and with peace of mind anytime, anywhere.

Promote RPA use

In a Japanese society where the decreasing labor force is unavoidable due to the declining birthrate and aging population, working style reforms and measures to deal with the shortage of human resources are becoming major issues.

To resolve these issues, we are working to thoroughly automate manual work and streamline and standardize business processes through the use of RPA (Robotic Process Automation) in conjunction with the restructuring of core systems.

In particular, in the “paperless,” “cashless,” and “stamp-less” work style reforms which have rapidly become widespread in Japan after the coronavirus pandemic, we are working to improve operational efficiency and shift to high-value-added operations by incorporating operational reforms using the latest IT technologies.

In the future, we will further expand the scope of application of digitalization in indirect operations, which will lead to improved productivity for the entire organization, and aim to increase corporate value.

Implement employee engagement survey

To achieve sustainable enhancement of corporate competitiveness, we believe that it is important to create an open workplace in which each employee's abilities are utilized and treated fairly, as well as a good relationship of trust and communication between supervisors, subordinates, and employees. We are working to improve employee engagement.

In order to enhance the effectiveness of our initiatives, we conducted an engagement survey in October 2021

to gauge the thoughts and feelings of our employees and their expectations for the company.

Through the development of personnel measures to improve employee engagement, implementation of workplace improvement activities, measures to reform working styles, and initiatives linked to the promotion of health and productivity management, we will realize the “good working environment” and “motivation” of each and every employee.

Please refer to our website for other initiatives related to “Human resource development.”
<https://www.ntnglobal.com/en/csr/sc/employee.html>

Materiality Promote diversity

KPIs and targets for the fiscal year ending March 31, 2023		
● Ratio of female managers	➡	9% for NTN (target for the fiscal year ending March 31, 2024)
● Ratio of male childcare leave acquisition	➡	30% (target for December 2024)

Basic Approach to Diversity and Inclusion

Our group is working to create a workplace environment in which a variety of human resources, regardless of nationality, culture, gender, age, or disability, can create better ideas with free ideas and maximize their abilities.

We will respect and recognize diverse values, and integrate them to create an organization that generates flexible ideas. While continuing to grow in a sustainable manner, we will realize our company's philosophy of “We shall contribute to international society through creating new technologies and developing new products.”

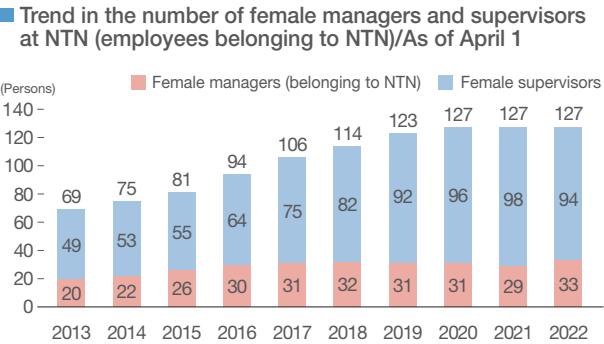
Career advancement of women

One of the biggest challenges in achieving diversity is promoting women achievement in the workplace and closing the gender gap. Currently, the percentage of female managers in our group is 14% globally, and we are working to increase the number of managers in Japan, which is lower than in other regions.

In order for women to participate in important decision-making in positions of responsibility, and to create innovation based on diverse opinions and flexible ideas, we have introduced a leadership development program for female employees and systematically provide education to help them move up, thereby creating an environment in which women can challenge for managerial positions.

In addition to fostering women awareness and developing their abilities, we will work to further promote

women's activities with raising the awareness of the entire workforce.



Promote male employees to take childcare leave

Measures to promote the participation of male employees in childcare leave include awareness-raising activities by posting posters' promoting male employees' childcare leave throughout the company, and holding seminars to promote the development of the next generation (papa seminars), to help male employees learn about the importance of participating in childcare and to deepen their understanding of internal systems for childcare.

As a result of these efforts, the percentage of male employees taking childcare leave in fiscal 2021 was approximately five times higher than that of fiscal 2019.

Please refer to our website for other initiatives related to “Promote diversity.”
<https://www.ntnglobal.com/en/csr/sc/employee.html>

Message from the Executive Officer in Charge of Human Resources

We will steadily promote “prosperous human development” to increase corporate value.

Executive Officer
Human Resources Strategy Department
Personnel Department

Yasuhiro Kawabata



How do we aim for “prosperous human development”, one of the ESG issues? The Executive Officer in charge of human resources will explain our efforts to realize “respect for diversity and individuality,” “enhancement of engagement” and “revitalization of the organization.”

Aiming for steady efforts aimed at “prosperous human development”

Organization and human resource reforms are necessary to resolve various social issues and increase social value, environmental value and economic value while adapting to rapid changes in the environment in recent years. To this end it is necessary to foster an organizational culture that works to increase value and to develop diverse human resources that can work with job satisfaction. With this aim, the Group has set “prosperous human development” as one of its ESG issues. Furthermore, we will make “securing human resources who will lead the next generation to take on the challenge of transformation,” “creating a rewarding environment that respects the diversity of employees,” “fostering a culture of learning and development in the workplace,” “realizing a workplace where employees can work safely and healthily” and “respect for human rights” more specific policies and steadily work on concrete measures one by one. At the same time, we, the Human Resources division, must respond to changes. Based on the five keywords of “Advancement, Visualization, Linkage, Efficiency, and Globalization,” we will promote transformation and strengthen the foundation from a higher and broader perspective.

Fostering the next generation who can take on the challenge of transformation

Management and senior management play an important role in fostering a culture that enhances employee motivation and supports the challenge of transformation. In fiscal 2021, we have significantly renewed and relaunched the training program with the aim of systematically and early developing the next generation of management executive, and expanding the base of candidates. In fiscal 2022, we will further review the content of the training and increase the number of participants.

We will develop human resources who can support our future business foundation and take on the challenge of transformation even in an era of uncertainty, uncertainty and rapid change.

Putting “employees’ desire” in Human Resources Policy

Amid continued harsh business performance, we believe it is more important than ever to enhance employee job satisfaction and invigorate the organization. Accordingly, we conducted an “employee awareness survey” targeting the head office and sales divisions. The survey results were shared with all the Executive Officers, and we have been able to firmly grasp the employees' desire to make NTN an excellent company. In the future, we will consider expanding the scope of the survey.

However, we often tend to seek results in a quick manner after such surveys, but first of all, we believe that it is important to reflect employees' desire in the improvement activities of the workplace and have them take root. In addition, we reaffirmed the importance of listening to the opinions of our employees on a regular basis rather than limiting ourselves to the “employee awareness survey.” We will reflect the results of this survey and various “employees' desire” in our personnel policies.

Importance of recognizing “differences” among countries and regions

The new corporate award system “NTN PROUD AWARD,” which will start in fiscal 2022, was established with the aim of praising employees' ESG activities from a global perspective. We believe this will further deepen their understanding of ESG management and raise their awareness as a member of NTN group, making it easier to disseminate our policies and strategies to employees around the world.

From my experience in overseas assignments, I think it is difficult to implement systems and measures in the same way as in Japan, as laws and regulations, cultures, religions, and customs differ depending on the country or region. In other words, there is a big difference between proceeding with a project with an awareness of the “differences” between Japan and other countries and proceeding without such awareness. We will promote the creation of a workplace environment in which diverse human resources can work with enthusiasm while adding a global perspective so that new discoveries and ideas can be discovered while acknowledging each other's differences.

Materiality
Strengthen governance
Thorough compliance

Basic Approach

Strengthening and enhancing our corporate governance is one of our top management priorities. We take steps to make management more efficient and robust while working to increase management transparency by disclosing information to shareholders and investors in a prompt and accurate manner.

We made a transition from a Company with a Board of Company Auditors to a Company with a Nominating Committee, etc. in June 2019 with the aim of establishing a prompt decision-making structure and operational execution organization, strengthening the supervision of management, and improving management transparency and fairness. Under this structure, we will work on further improvement of corporate value over the medium- and long-term.

Members composing Nominating Committee, Compensation Committee, and Audit Committee			
Fiscal year ending March 31, 2023 (As of June 21, 2022)			
Director	Nominating Committee	Compensation Committee	Audit Committee
Eiichi Ukai	○	○	
Hideaki Miyazawa			
Toshinori Shiratori			
Masaki Egami			
Masaaki Yamamoto		○	
Isao Ozako	○		○
Noboru Tsuda ★ (Non-standing)	◎		
Kouji Kawahara ★	○		◎
Ryo Kawakami ★ (Non-standing)		○	○
Tomonori Nishimura ★ (Non-standing)		◎	○
Yuriya Komatsu ★ (Non-standing)		○	
Akira Murakoshi ★ (Non-standing)	○		

*Please note that persons with ★ are Outside Directors, persons with ◎ are Chairpersons of committees, and persons with ○ are members of committees.

5 Management Meeting

The Management Meeting discusses important matters relating to operational execution, as a supporting body for decisionmaking of President, Executive Officer. The meeting is composed of President, Executive Officer, and Executive Officers who are designated by him, and held twice a month in principle.

6 Executive Officers Meeting

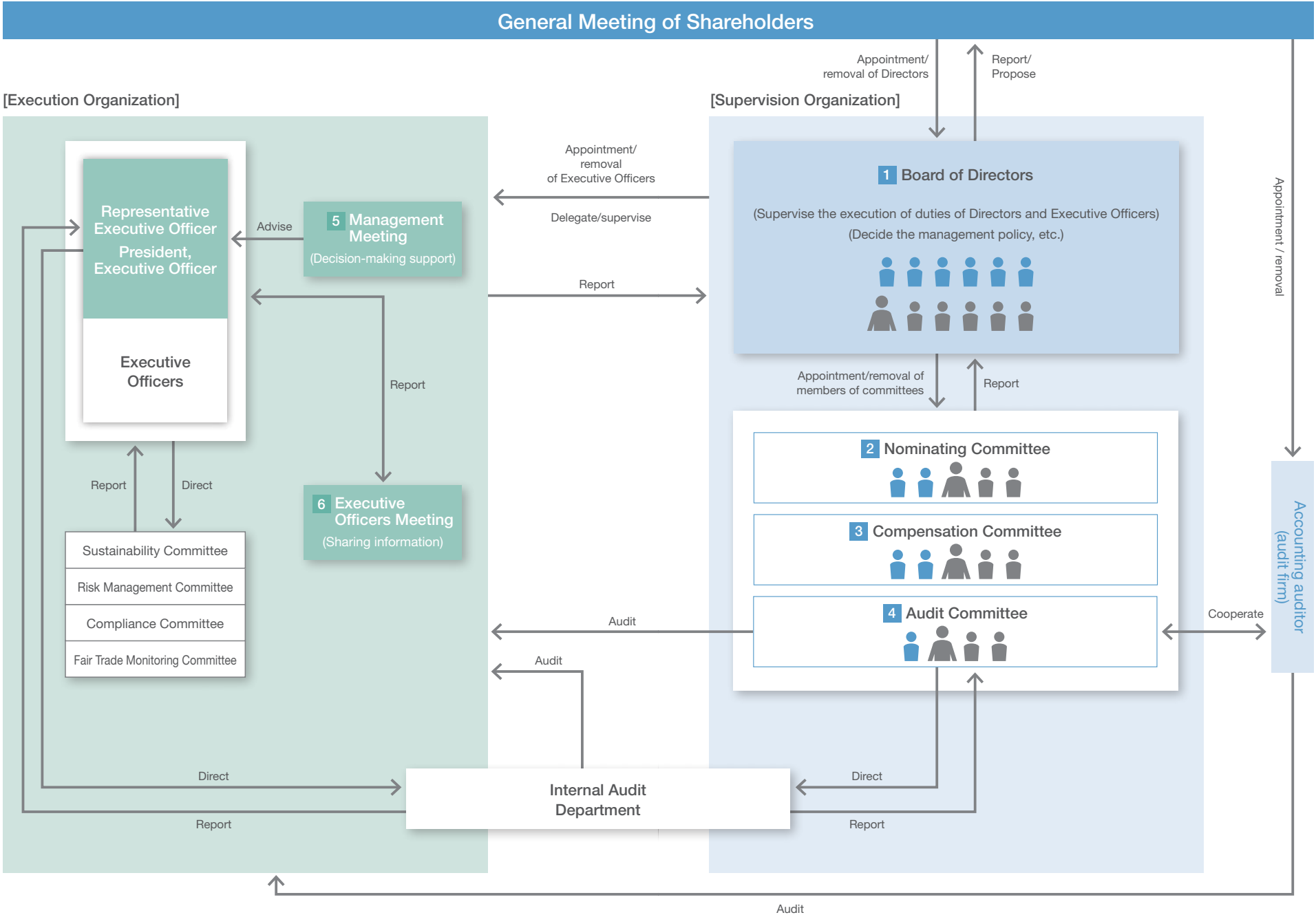
The Executive Officers Meeting is held by President, Executive Officer under the attendance of all Executive Officers. Matters resolved at the Board of Directors are instructed, and each Executive Officer reports about the status of operational execution. This meeting is held once a month in principle, to make operational execution more efficient and effective by sharing information among Executive Officers.

Executive Officers

Executive Officers are elected by the resolution of the Board of Directors, and are in charge of executional decision making and execution of operations delegated by the Board of Directors. Its term of office is specified as a year by the Articles of Incorporation. The number of Executive Officers is 13 as of June 21, 2022.

Basic information	
Organizational design	Company with Nominating Committee, etc.
Directors	12
Of those, independent Outside Directors	6
Term of office of Directors	1 year
Executive Officers	13
Of those, Executive Officers who have the authority of representation	2
Executive Officers concurrently serving as Directors	5
Structure to support duties of Audit Committee	Available (Internal Audit Department)
Accounting auditor	Ernst & Young ShinNihon LLC

Corporate governance structure (as of June 21, 2022)



1 Board of Directors

The Board of Directors decides the basic management policies, and supervises the execution of duties of Directors and Executive Officers. Except matters stipulated by laws and regulations or the Articles of Incorporation to be resolved at the Board of Directors, the Board of Directors delegated substantial authority to Executive Officers with the aim to strengthen the supervision of management, and make decisions more promptly.

The Board of Directors is held once a month in principle, but it is also held flexibly as needed.

The Articles of Incorporation specify that the term of office of Directors shall be one year, and the number of Directors shall be within 15. The number of Directors is 12 as of June 21, 2022, and six of them are Outside Directors. The Board of Directors is chaired by Outside Director.

2 Nominating Committee

The Nominating Committee decides on the content of a proposal regarding appointment/ removal of Directors, which is submitted to the General Meeting of Shareholders. The majority of the members are Outside Directors. Three out of the five members of the committee are Outside Directors, and the committee is chaired by an Outside Director.

3 Compensation Committee

The Compensation Committee decides on the policy for compensation for Directors and Executive Officers, and details of compensation for individual persons. The majority of the committee are Outside Directors. Three out of the five members of the committee are Outside Directors, and the committee is chaired by an Outside Director.

4 Audit Committee

The Audit Committee audits the execution of duties of Directors and Executive Officers, and decides on the content of a proposal regarding appointment/removal of the accounting auditor, which is submitted to the General Meeting of Shareholders. The majority of the members are Outside Directors. Three out of the four members of the committee are Outside Directors, and the committee is chaired by an Outside Director.

Also, assistants, including the Secretariat of Audit Committee, are appointed from the Internal Audit Department to support the duties of the Audit Committee. Regarding matters relating to appointment, personnel relocation, disciplinary punishment, evaluation, etc. of assistants, the approval from the Audit Committee shall be required for decision.

Materiality Strengthen governance

KPIs and targets for the fiscal year ending March 31, 2023
● Assessment of effectiveness of the Board of Directors and improvement

Governance-strengthening transition

2004	● Start of Operating Officer System ● The Board of Managing Directors is reviewed and renamed as the Business Strategy Committee
2006	● CSR Committee is established
2008	● Risk Management Committee is established ● An Outside Director is appointed for the first time
2011	● The number of Outside Directors is increased from 1 to 2
2012	● Fair Trade Monitoring Committee is established
2015	● Compliance Committee is established ● The effectiveness of the Board of Directors is assessed
2016	● Compensation Advisory Committee is established
2018	● New corporate philosophy system is established
2019	● Transition to a Company with Nominating Committee, etc. ● The number of Outside Directors is increased from 2 to 5 ● Sustainability Committee is established
2020	● Woman appointed as an Outside Director
2021	● Flattening Executive Officer System
2022	● ESG items set in the Executive Officer evaluation system

Board of Directors

Approach of Board of Directors

Directors other than Outside Directors are appointed from a wide range of fields, including manufacturing, marketing, technology, and administrative divisions. In addition, Outside Directors are appointed after considering diversity and balance, such as being a person with knowledge of finance, experienced management, and being a lawyer. We believe that the current number of Directors is an appropriate size for strengthening corporate governance and expanding our global businesses.

Diversity of Directors

Upon the approval of the General Meeting of Shareholders in the fiscal year ended March 2020, a female Director (Outside Director) was newly appointed for the first time at the Company. The female Director with experience in a different industry than ours supervises management. This will enable us to integrate diverse values and accelerate transformation aimed at achieving sustainable growth.

Assessment of effectiveness of the Board of Directors

We conducted a self-assessment of the Board of Directors by sending out questionnaires to Directors from the viewpoints such as role/structure/management of the Board of Directors and management of committees. We asked a third-party organization to conduct the survey, received support for making the questionnaire, and obtained third-party opinions on the results of the questionnaire. Although this evaluation was generally positive, there were comments regarding the mechanism and operation of the performance evaluation of Executive Officers and other factors. Consequently, the Board of Directors discussed future measures and other matters based on the third-party opinions. We will continue to analyze and evaluate the effectiveness of the Board of Directors on a regular basis to make improvements.

Executive Officer

The appointment of Executive Officer

The appointment of an Executive Officer shall be determined after careful deliberation by the Board of Directors, comprehensively considering whether they possess personalities, insights, capabilities, experience/performance, etc. that are appropriate for fulfilling their duties. In addition, if it becomes clear that an Executive Officer lacks the required qualifications, he/she will be promptly dismissed by the Board of Directors.

Flattening of the system and compensation

Since June 25, 2021, the Company has removed the Managing Executive Officers and eliminates hierarchical relationships among Executive Officers and makes them one team. It enables all Executive Officers to activate discussions and respond to various issues quickly toward further enhancement of its corporate value.

In line with the flattening of the system, in April 2022 we abolished the conventional system of compensation by position and shifted to a system of compensation for Executive Officers based on the responsibilities of the division to which they are in charge.

Introduction of ESG evaluation

Since April 2022, ESG items have been set as key individual target measures for Executive Officers involved in the calculation of annual incentives (bonuses). The degree of achievement of these ESG items is one of the evaluation indicators. By introducing ESG items into the evaluation system, Executive Officers are promoting active ESG initiatives.

Nominating Committee (From April 1, 2021 to March 31, 2022)

■ Members, the number of meetings, and attendance

Name	Title	Attendance	Number of attendances
Noboru Tsuda	Chairperson Outside Director	100%	4 times/4 times
Kouji Kawahara	Outside Director	100%	4 times/4 times
Tomonori Nishimura	Outside Director	100%	4 times/4 times
Eiichi Ukai	Director	100%	4 times/4 times
Hiroshi Ohkubo	Director	100%	4 times/4 times

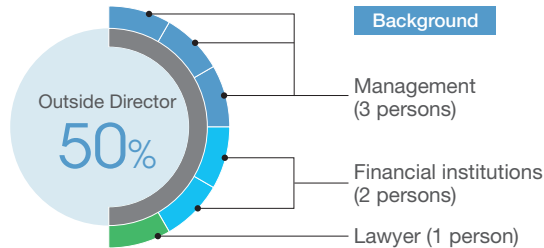
Discussions on Nominating Committee

The Nominating Committee was established in conjunction with the transition to a Company with a Nominating Committee, etc. in 2019. The committee was held four times for the year ended March 31, 2022, with discussions and resolutions mainly on the standards for selection of Directors, skill matrix related to such standards for selection and the standards regarding the independence of Outside Directors.

About Outside Directors

As of June 21, 2022, the Board of Directors consists of 12 members, including six Inside Directors and six Outside Directors, and the ratio of Outside Directors is 50%. In this way, we strengthen the supervision of management and improve management transparency and fairness. In addition, in order to ensure appropriate corporate governance, we have established our own standards regarding the independence of Outside Directors, stipulating qualification and independence standards for them. These standards are used for appointing Outside Directors. Also, all the Outside Directors are designated as Independent Officers as defined by the rules of the Tokyo Stock Exchange, Inc. (TSE), and are reported to TSE as such.

For Outside Directors, we have established an environment where active discussions can be held at the Board of Directors through actions such as explaining the issues as necessary prior to a relevant meeting of the Board of Directors. Moreover, we continuously provide information necessary to effectively fulfill the roles and responsibilities of an Outside Director by creating opportunities to deepen their understanding of our business through on-site inspection of business sites and other means.



Standards for Selection of Directors

Candidates for Directors will be selected from inside and outside the Company based on standards for selection of Directors as described below, considering the diversity and balance of the Board of Directors (including gender and internationality), after careful deliberation by the Nominating Committee.

- Must be in good condition both physically and mentally.
- Must have a high sense of ethics and a law-abiding spirit.
- Must be able to engage in constructive discussion from an objective viewpoint.
- Must be highly motivated to improve their abilities.
- Must have excellent decision-making skills from a company-wide and medium- to long-term perspective.
- Must have excellent insight and foresight concerning changes to the overall environment and to society.
- Must have a sufficient record of performance and expertise in relevant fields. (Corporate manager or expertise)
- Outside Directors must (1) have sufficient time to accomplish their duties, (2) satisfy the standards regarding the independence of Outside Directors, (3) ensure diversity between the Outside Directors, and (4) have the requisite abilities to accomplish duties as a member of any of the three Committees.

Compensation Committee (From April 1, 2021 to March 31, 2022)

Members, the number of meetings, and attendance

Name	Title		Attendance	Number of attendances
Ryo Kawakami	Chairperson	Outside Director	100%	8 times/8 times
Noboru Tsuda		Outside Director	100%	8 times/8 times
Yuriya Komatsu		Outside Director	100%	8 times/8 times
Eiichi Ukai*		Director	100%	7 times/7 times
Toshinori Shiratorii		Director	100%	8 times/8 times

*The number of attendance after becoming as a member of the Committee

Discussions at the Compensation Committee

The Compensation Committee met eight times from April 2021 to March 2022.

The Compensation Committee aims to improve fairness, transparency, and objectivity of procedures regarding the decision making of compensation for Directors and Executive Officers and enhance corporate governance. Also, the committee passed resolutions regarding the details of compensation (such as compensation specified for each individual) of Officers.

Compensation Committee (April 1, 2021 ~March 31, 2022)

1st	<div><div>·Points granted by BIP Trust for compensation of Officers</div><div>·KPI figures for BIP Trust for compensation of Officers in the medium-term management plan (April 2021 to March 2024)</div><div>·Additional contribution of shares to the BIP Trust account for compensation of Officers</div><div>·Revision of basic policy for annual incentives (bonuses)</div><div>·Bonus for Executive Officers in 2021</div><div>·Summer bonus for Operating Officers in 2021</div></div>
2nd	<div><div>·Decision of the order of substitution for the chairperson in the event of an accident</div><div>·Policy for determining the amount of compensation of Officers or the method of calculating such amount</div><div>·Director compensation</div><div>·Executive Officer compensation</div><div>·Compensation Committee's annual activity plans</div></div>
3rd	<div><div>·Point table for BIP Trust for compensation of Officers</div><div>·Additional contribution of shares to the BIP Trust account for compensation of Officers</div><div>·Conclusion of memorandum on revision of share delivery regulations, internal regulations, and changes to trust contracts</div></div>
4th	<div><div>·Punishment of Executive Officer</div></div>
5th	<div><div>·Review of compensation levels and compensation structure of Officers</div><div>·Winter bonus for Executive Officers in 2021</div><div>·Report on activities to review the Executive Officer system</div></div>
6th	<div><div>·Policy for revision of Executive Officer Compensation in accordance with flattening of the Executive Officer system</div></div>
7th	<div><div>·Punishment of Executive Officer</div></div>
8th	<div><div>·Revision of basic policy for determination of compensation, etc.</div><div>·Determination of Executive Officer's compensation</div><div>·Revision of stock issuance regulations and internal regulations</div></div>

Basic policy for determining compensation

The system and level of compensation for Officers, compensation specified for each individual, etc. are determined in the Compensation Committee chaired by an Outside Director using objective information including the level and trends of other companies as reference. Compensation for Executive Officers and compensation for Directors are determined separately, and if a Director also serves as an Executive Officer, those compensations are added up.

Compensation for Directors

Compensation for a Director consists only of fixed compensation. Fixed compensation shall be calculated by increasing basic compensation (which is determined based on his/her concurrent duties as an Executive Officer and whether he/she works full-time or part-time), taking into account a committee to which a Director belongs and his/her role at the committee.

Compensation for Executive Officers

Compensation for Executive Officers consists of fixed compensation and performance-linked compensation, which fluctuates according to performance. The ratio of fixed compensation to performance-linked compensation is approximately 6:4 as a standard.



Fixed compensation

Fixed compensation consist of basic salary, representation and CxO fees.

Performance-linked compensation

Annual incentives

For Executive Officers, the Company determines whether or not to provide payment of monetary compensation that reflects the performance of a single fiscal year, based on consolidated financial results indicators, etc. of the previous fiscal year and, in the case of providing such payment, the total amount. The payment or non-payment to each Executive Officer, and in the case of payment, the amount, is determined within the total amount of provision by considering the Executive Officer's progress on priority target measures. Indicators related to the calculation of bonuses are based on consolidated financial results: net sales, operating income and net income from the perspective of emphasizing the achievement of earnings growth. The provision is made once a year in June after the determination of the Compensation Committee.

Medium-to long-term incentives

The Company's shares shall be issued based on the achievement level of major target figures in the Medium-term Management Plan (money equivalent to the converted amount of shares shall be paid for a certain portion) as incentives to motivate them to achieve the targets in the Medium-term Management Plan and contribute to raising shareholder value, and in order to promote the holding of the Company's shares.

Medium- to long-term performance targets include key performance indicators (consolidated operating margin, consolidated net sales, etc.) that take into account the Company's management policies.

Audit Committee (From April 1, 2021 to March 31, 2022)

Members, the number of meetings, and attendance

Name	Title		Attendance	Number of attendances
Kouji Kawahara	Chairperson	Outside Director	100%	14 times/14 times
Ryo Kawakami		Outside Director	100%	14 times/14 times
Tomonori Nishimura		Outside Director	100%	14 times/14 times
Keiji Ohashi		Director	100%	14 times/14 times

Discussions at the Audit Committee

Major items to be discussed at the Audit Committee include the formulation of the Audit Committee's auditing standards, the formulation of auditing policies and auditing plans, the evaluation of the content of auditing plans of the independent auditors, the assessment of the selection of independent auditors, and the assessment of the status of development and operation of internal control systems.

Audit Status

The Audit Committee members attend meetings of the Board of Directors and other major meetings in

accordance with auditing standards, policies, and plans determined by the Audit Committee. The Audit Committee receives reports or hears from Directors, Executive Officers, employees, etc. on the status of the execution of their duties, and audits the execution of duties by Directors and Executive Officers. In addition to the Board of Directors and Executive Officers Meeting, members of the Audit Committee attend and monitor the Sustainability Committee, the Risk Management Committee, the Compliance Committee, and the Fair Trade Monitoring Committee, which operate internal control systems.

Internal Control/Internal Audit

Internal control system

We regard risk management and compliance as one of the most important management issues, and have established Internal Control Policy. Based on this basic policy, we maintain and operate the Group's internal control system, and are working to improve the soundness and efficiency of our management by constantly reviewing our internal control system in response to changes in the business environment.

We conduct assessment of internal control over financial reporting in accordance with generally accepted assessment standards for internal control over financial reporting. In the fiscal year ended March 31, 2022, we evaluated the effectiveness of internal controls for 50 domestic and overseas companies.

Internal audit activities

The Internal Audit Department reports directly to the President, Executive Officer and is in charge of internal audit operations independently from the divisions to be audited. The Internal Audit Department conducts internal audits of the execution status of execution organizations from the perspectives of compliance with laws and internal regulations, appropriateness, and the

effectiveness and efficiency of business activities. For internal audits, audits are conducted by each organization of the execution organization (operational audits) and cross-organizational audits by risk and business function (thematic audits). Based on the results of these audits, we provide advice and recommendations for improvement to the divisions subject to audits, as well as confirming the implementation status of improvement measures and conducting follow-up audits.

Overseas, we have established the Administration & Internal Control Department within the General Manager's Office of each region. The Internal Audit Department and the Administration & Internal Control Department work together to strengthen internal controls while taking into account the circumstances and characteristics of each region.

The results of internal audits are reported to the President, Executive Officer and to the Audit Committee. The Audit Committee, the Internal Audit Department and the Accounting Auditor work together to improve efficiency and effectiveness of audits by regularly holding meetings and exchanging information and opinions about the policies, plans, and results of audits.

Overview of the Committees

Sustainability Committee

The Sustainability Committee is chaired by the Executive Officer in charge of the ESG Promotion Department (Chief Management Officer of sustainability activities), and consists of the head of department related to ESG. In principle, this committee meets once a year to discuss issues and initiatives related to the Group's sustainability activities, and to report on these activities to the Board of Directors as appropriate. The Committee met three times in the fiscal year ended March 31, 2022. The main activities are as follows.

Spread of ESG management within the company

We have created a roadmap that shows the specific measures that the Group is taking to realize a “NAMERAKA Society.” In the process of preparing the roadmap, we have held numerous meetings with the President, Executive Officer, and we are deploying it in-house as an overview of management to ensure that our Group continues to grow as a company that contributes to society.

Materiality measures and KPI discussions

The committee deliberated on the appropriateness of the measures and goal setting that were studied mainly by the departments that manage each of the 13 items of materiality. In particular, for the materiality related to climate change, the committee confirmed that it will be linked to initiatives in line with TCFD recommendations and deployed in business activities.

Initiatives for TCFD recommendations

A cross-functional scenario analysis team was established under the Sustainability Committee to conduct the scenario analysis. In the scenario analysis, two cases of temperature increase of 4°C and less than 1.5°C during the 21st century were assumed, and the risks and opportunities posed to our business were identified and countermeasures were considered for each.

Risk Management Committee

To respond to various risks surrounding the businesses of the Group, we have established the Risk Management Committee, chaired by the Executive Officer (Chief Management Officer of risk management), who is in charge of the ESG Promotion Department, as an advisory body on risk management to prevent risks from occurring and to minimize damage in the event of a crisis. The committee mainly consists of the general managers of

the promotion departments of the risk management. The committee regularly checks activities including identification, analysis, evaluation, and treatment with regard to risks that have a major impact on the management of the NTN Group. The result of discussion at the Risk Management Committee is reported to the Board of Directors and instructions are fed back to the relevant departments.

Compliance Committee

The Compliance Committee, chaired by the Executive Officer in charge of Legal Department (Overall Control Administrator of Compliance Promotion Activities), handles global compliance risks, excluding violation risks of the Anti-Monopoly Act and the Subcontracting Act. The committee members are comprised primarily of the heads of related risk management divisions. The committee members formulate and implement risk mitigation measures in cooperation with the Compliance Promotion Activity Supervisors appointed at each business site in Japan and the Administration & Internal Control Department established at each Office of General Manager in five overseas regions, and report to the committee on action plans and the status of implementation. The committee deliberates on the contents of such reports and then reports the findings to the Board of Directors.

Fair Trade Monitoring Committee

The Fair Trade Monitoring Committee is chaired by the President and Executive Officer and consists of Executive Officers in charge of sales and procurement divisions, an Outside Director, external lawyer and so on. In principle, this meeting is held twice a year to discuss the implementation plans and the performance reports for compliance with the Antimonopoly Act and the Subcontracting Act, and to provide supervision and guidance on effective control for fair trade practices along with education and awareness-raising activities. In addition, we have established the Fair Trade Promoting Group in Legal Department as an overall supervisory department for compliance with antimonopoly law. Under the direction of the Fair Trade Monitoring Committee, the department conducts various activities (such as education, instruction and audit) for relevant divisions. Furthermore, overseas subsidiaries are monitored for the implementation status of compliance with antimonopoly law in cooperation with the Administration & Internal Control Department in each region.

Risk Management

Basic approach to risk management

We have developed a Risk Management Policy that outlines our basic approach to prevention and handling of risks that may hamper the execution of the Group's business, and the Risk Management Regulations that set forth risk management organizations and their roles. Through these measures, we promote group-wide risk and crisis-management and BCP/BCM (Business Continuity Planning/Business Continuity Management).

We convene the Risk Management Committee as an advisory body for risk management twice a year, in principle. The committee regularly checks risk management process including identification, analysis, evaluation, and treatment with regard to risks that have a major impact on the management of the NTN Group in light of changes in the internal and external environment and other factors. We have classified risks into the following 12 categories from the perspective of ensuring completeness. After that, an administrative manager and a promotion department have been determined for each specific risk that will have a significant impact on the management of the NTN Group. Through these measures, we endeavor to reduce risks. The results of the discussion at the Risk Management Committee are reported to the Board of Directors.

Promotion of BCP/BCM

We have been developing a BCP/BCM structure designed to respond to major earthquakes in Japan and are working to strengthen our disaster response systems, including those of our group companies.

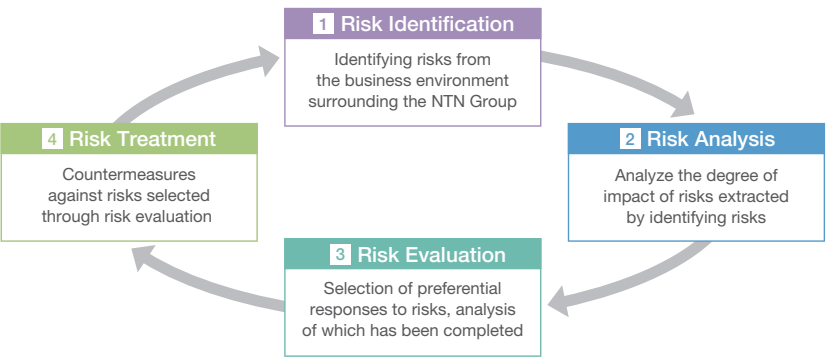
We have completed the formulation of BCP to enable early disaster recovery at all domestic production sites. Now we have also implemented BCP training to assess the effectiveness of the formulated action plans and have taken necessary advance measures. In doing so, we are moving ahead with development of BCM.

Risks related to the global situation

Significant risks that the Group recognizes as having the potential to have a significant impact on the financial position, operating results and cash flow conditions of consolidated companies are listed in the securities report.

In addition, Russia's invasion of Ukraine began in February 2022, and the global situation continues to be unstable. The Group also recognizes it as a risk and will work on risk management and promotion of BCP/BCM for the entire group.

Risk management process



Risk Category

- 1 Risks related to technology and R&D
- 2 Risks related to procurement and logistics
- 3 Risks related to production and inventory
- 4 Risks related to quality
- 5 Risks related to sales and marketing
- 6 Risks related to personnel and labor
- 7 Risks related to the environment and health & safety
- 8 Risks related to information systems
- 9 Risks related to finance and accounting
- 10 Risks related to legal affairs and compliance
- 11 Risks related to fire and disaster prevention, etc.
- 12 Others

Structure



Materiality Thorough compliance

KPIs and targets for the fiscal year ending March 31, 2023	
● Annual number of Compliance Committee meetings held	➡ 2
● Helpline recognition level in survey of compliance awareness	➡ 85% or more

Basic approach to compliance

We believe that earning the trust of society is essential for us to contribute to the realization of a sustainable society and to continue to be a company needed by society. Accordingly, we are placing importance on compliance in our Management Policy. We formulated the Business Code of Conduct to specify the policy of actions which officers and employees should observe so that we can conduct business activities in accordance with laws and regulations and generally accepted standards and practices in each country, and our internal rules. We have also established and have been operating the compliance promotion structure that includes rules related to compliance, a whistle-blower system, the Compliance Committee, and the Fair Trade Monitoring Committee.

Promotion structure

We have established and have been operating the Compliance Committee and the Fair Trade Monitoring Committee to promote compliance through the activities of both committees. (See page 79 for Overview of the Committees.)

Aside from the efforts made by the two committees, the Legal Department conducts the rank-based training and the topic-specific training for officers and employees as part of compliance-related educational and awareness-raising activities. In addition, we hold a group training session for Compliance Promotion Activity Supervisors in Japan once a year. By sharing information and exchanging opinions on important issues, we are enhancing the promotion activities at each business site and providing support for the initiatives at each business site. Furthermore, with regard to activities for global compliance risks such as corruption prevention, we regularly exchange information and opinions with the Administration & Internal Control Department at each Office of General Manager in

five overseas regions and legal/compliance departments of overseas subsidiaries, thereby confirming each other's ongoing activities and setting new agendas.

In addition, we have established the Fair Trade Promoting Group in Legal Department of an overall supervisory department for compliance with antimonopoly law. Under the direction of the Fair Trade Monitoring Committee, the Group conducts various activities (such as education, instruction and audit) for relevant divisions. Additionally, overseas subsidiaries are monitored for the implementation status of compliance with antimonopoly law in cooperation with the Administration & Internal Control Department at the Office of General Manager in each region.

Internal corporate culture survey

As part of its fraud prevention activities, the Group investigates employee evaluations of the attitudes of the presidents of affiliated companies.

It is said that there is a high probability of occurrence of fraudulent acts in a company when motives/pressures, opportunities, and rationalization triangles are formed. While advancing the development of regulations, rules, and penalties, it is important to develop an internal corporate culture and environment. Therefore, we regularly confirm changes in the organizational culture of affiliated companies through employee evaluations.

By disclosing the results of this survey to the presidents of affiliated companies, we are making use of the results to create an internal corporate culture of not being motivated to conduct fraudulent acts, based on the awareness that fraudulent acts are constantly seen within the company and at the head office. Also, such results are used to create better relationships with employees.

In the fiscal year ending March 31, 2022, we conducted a survey of approximately 1000 employees of 10 affiliated companies (6 in Japan and 4 overseas) where a change of the president or other event occurred.

Corruption prevention initiatives

Initiatives in Japan

We have established and have been applying in-house rules and regulations based on domestic and overseas anti-corruption laws and social norms. Our in-house rules and regulations not only prohibit bribery from and to domestic and overseas public officials and business partners, but also specify the rules and procedures regarding provision of property or profit by our officers or employees, and rules and procedures to prevent bribery via our business partners. In addition, under the circumstance that some countries even impose restraints on the transfer of property or profit between private companies, we have established rules and procedures for the receipt of property or profit in order to prevent bribery by our officers and employees, to thoroughly ensure the conduct of fair trade, and to prevent our officers and employees from engaging in conflicts of interest. Furthermore, we have made it a policy to refuse to receive gifts and entertainment from our business partners in principle.

We conduct in-house training and e-learning programs to raise awareness of the contents of our in-house rules and regulations, and conduct self-audits once a year to ensure thorough awareness of the anti-corruption rules and regulations. Domestic subsidiaries have also established and have been applying their own internal regulations that are consistent with the Company's policies.

Overseas Initiatives

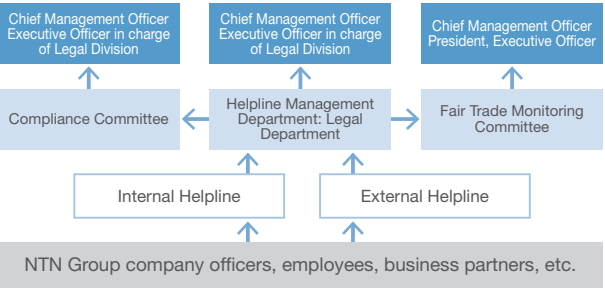
Our overseas subsidiaries have developed and have been operating in-house rules and regulations that are localized to reflect relevant laws, regulations, and generally accepted standards and practices in each country. They also conduct audit activities related to these rules and regulations as needed. The Legal Department is regularly sharing information and exchanging views with the Administration and Internal Control Department at the Office of General Manager in each region on related initiatives, and maintaining and managing a structure in which the Group unites as one to prevent bribery.

Helpline (whistle-blower system) and educational activities

In Japan, the whistle-blower system called Helpline has been established within and outside the Company and has been operated as a contact point for providing consultation regarding violations of laws, Business Code of Conduct, and in-house regulations. Helpline provides consultation for cases such as suspected violations of labor-related laws, including harassment, as well

as violations of in-house regulations, and conducts investigation in accordance with Helpline Management Rules that stipulate ensuring the confidentiality and prohibition of detrimental treatment against the whistle-blower. Through provision of information in various compliance training sessions and in the Code of Conduct Guidebook, we have established a structure where all employees can utilize Helpline, not only as a tool to report misconduct, but also as a means of raising questions and expressing opinions and complaints regarding the Business Code of Conduct, and maintaining satisfactory relationships between the company, officers, employees, and business partners.

Whistle-blower systems are being progressively created and operated also in overseas regions, where they are tailored to local needs and circumstances.



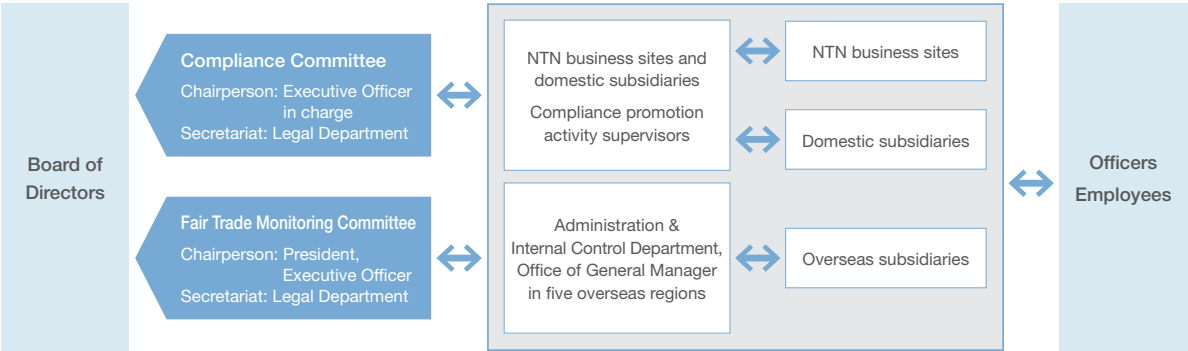
Antimonopoly law compliance initiatives

We regard any antimonopoly violations represent a potential risk for the whole NTN Group. To ensure thorough antimonopoly compliance, the Legal Department and the Administration & Internal Control Department in each region conduct training and awareness-raising activities related to antimonopoly law compliance in accordance with local laws and circumstances in each region.

In addition, we have established a system that requires officers and employees to submit advance applications and follow-up reports when there is a possibility of contact with competitors in any event, such as exhibitions or meetings. Thus, we can ascertain whether and how employees contact competitors. Furthermore, we strengthen the compliance system by conducting annual self-audits and internal audits. Based on those results, each department proactively plans and implements improvement measures. We work to put fair and free competition into practice by continuing to upgrade our educational activities and raising the awareness of officers and employees.

Please refer to our website for other initiatives related to "Thorough compliance."
<https://www.ntnglobal.com/en/csr/governance/compliance.html>

■ Structure



Officers (As of June 21, 2022)

Directors



The main areas of experience of the Directors (Skill matrix)

Name	Main areas of experience required of Directors								
	Corporate management	Manufacturing	Technology and R&D	Sales and Marketing	Corporate and business planning	Finance and administration	Legal affairs, internal controls, compliance	Global experience	Experience of other industries, diversity
Eiichi Ukai	●	●		●				●	
Hideaki Miyazawa	●	●		●	●			●	
Toshinori Shiratori	●			●	●	●	●	●	
Masaki Egami			●						
Masaaki Yamamoto					●	●	●	●	
Isao Ozako	●	●						●	
Noboru Tsuda	●				●	●	●		●
Kouji Kawahara				●		●	●		●
Ryo Kawakami							●		●
Tomonori Nishimura	●		●	●					●
Yuriya Komatsu					●	●	●	●	●
Akira Murakoshi	●			●	●	●	●	●	●

Internal Director

1 Eiichi Ukai

Members of Nominating Committee

Members of Compensation Committee

Number of years as Director5 years

Number of shares of the Company held75,300 shares

2 Hideaki Miyazawa

Members of Nominating Committee

Members of Compensation Committee

Number of years as Director8 years

Number of shares of the Company held92,700 shares

3 Toshinori Shiratori

Members of Nominating Committee

Members of Compensation Committee

Number of years as Director7 years

Number of shares of the Company held74,200 shares

4 Masaki Egami

Members of Nominating Committee

Members of Compensation Committee

Number of years as Director1 year and 11 months

Number of shares of the Company held26,100 shares

5 Masaaki Yamamoto

Members of Nominating Committee

Members of Compensation Committee

Number of years as DirectorNew

Number of shares of the Company held34,100 shares

6 Isao Ozako

Members of Nominating Committee

Members of Compensation Committee

Number of years as DirectorNew

Number of shares of the Company held27,500 shares

Outside Director

7 Noboru Tsuda

Members of Nominating Committee

Members of Compensation Committee

Chairperson of each committee

Number of years as Director6 years

Number of shares of the Company held30,800 shares

8 Kouji Kawahara

Members of Nominating Committee

Members of Compensation Committee

Chairperson of each committee

Number of years as Director3 years

Number of shares of the Company held56,900 shares

9 Ryo Kawakami

Members of Nominating Committee

Members of Compensation Committee

Number of years as Director3 years

Number of shares of the Company held0 shares

Significant concurrent positions
Attorney at law (Osaka Nishi Law Office, Legal Professional Corporation)
Professor, Osaka University Law School

10 Tomonori Nishimura

Members of Nominating Committee

Members of Compensation Committee

Number of years as Director1 year and 11 months

Number of shares of the Company held3,500 shares

Significant concurrent positions
Business Owner, NT Consul Biz.

11 Yuriya Komatsu

Members of Nominating Committee

Members of Compensation Committee

Number of years as Director1 year and 11 months

Number of shares of the Company held10,000 shares

Significant concurrent positions
Outside Director, Dream Incubator Inc.
Managing Director, IA Partners Inc.
Advisor, Otsuka Chemical Co., Ltd.

12 Akira Murakoshi

Members of Nominating Committee

Members of Compensation Committee

Number of years as DirectorNew

Number of shares of the Company held0 shares

Significant concurrent positions
Member of the Board, Mitsubishi Corporation

Please see our website for past experience.
<https://www.ntnglobal.com/en/csr/governance/structure.html>

	Directors	Number of Board of Directors and Committee attended			Reasons for selection
Internal Directors	Eiichi Ukai	100%	Board of Directors Nominating Committee Compensation Committee	15/15 4/4 7/7	Mr. Eiichi Ukai possesses operational experience in areas such as the Quality Assurance Division and Overseas Division, and broad knowledge of the management of the Company promoting business globally based on these achievements, among others, and has served as President, Executive Officer of the Company since April 2021. The Company selects him with an aim to continuously improve corporate value, utilizing his experience and knowledge, etc. for management.
	Hideaki Miyazawa	100%	Board of Directors	15/15	Mr. Hideaki Miyazawa possesses operational experience in areas such as the Business Division for the automotive market and Overseas Division, and broad knowledge based on these achievements, among others. The Company selects him with an aim to continuously improve corporate value, utilizing his experience and knowledge, etc. for management.
	Toshinori Shiratori	100%	Board of Directors Compensation Committee	15/15 8/8	Mr. Toshinori Shiratori possesses operational experience in areas such as the Human Resources Division and Corporate Strategy Division, and broad knowledge based on these achievements, among others. The Company selects him with an aim to continuously improve corporate value, utilizing his experience and knowledge, etc. for management.
	Masaki Egami	100%	Board of Directors	15/15	Mr. Masaki Egami possesses operational experience in areas such as the Engineering Division and Research and Development Division, and broad knowledge based on these achievements, among others. The Company selects him with an aim to continuously improve corporate value, utilizing his experience and knowledge, etc. for management.
	Masaaki Yamamoto				Mr. Masaaki Yamamoto possesses operational experience in areas such as the Finance Division and Overseas Division, and broad knowledge based on these achievements, among others. The Company newly selects him with an aim to continuously improve corporate value, utilizing his experience and knowledge, etc., for management.
Outside Directors	Isao Ozako				Mr. Isao Ozako possesses operational experience in areas such as the Manufacturing Division and Quality Assurance Division, and broad knowledge based on these achievements, among others. The Company newly selects him with an aim to continuously improve corporate value, utilizing his experience and knowledge, etc., for management.
	Noboru Tsuda	100%	Board of Directors Nominating Committee Compensation Committee	15/15 4/4 8/8	Mr. Noboru Tsuda possesses broad knowledge, etc. based on extensive experience in the management of other companies. The Company selects him with an expectation to continuously improve corporate value by conducting supervision from the viewpoint to increase transparency and fairness of management through his duties such as providing appropriate opinions on the independent standpoint from business executors.
	Kouji Kawahara	100%	Board of Directors Nominating Committee Audit Committee	15/15 4/4 14/14	Mr. Kouji Kawahara possesses extensive experience in banking over many years and broad knowledge including finance, among others. The Company selects him with an expectation to continuously improve corporate value by conducting supervision from the viewpoint to increase transparency and fairness of management through his duties such as providing appropriate opinions on the independent standpoint from business executors.
	Ryo Kawakami	100%	Board of Directors Audit Committee Compensation Committee	15/15 14/14 8/8	Although Mr. Ryo Kawakami has not been directly involved in corporate management, he possesses broad knowledge, etc. based on extensive experience as a lawyer familiar with corporate legal affairs. The Company selects him with an expectation to continuously improve corporate value by conducting supervision from the viewpoint to increase transparency and fairness of management through his duties such as providing appropriate opinions on the independent standpoint from business executors.
	Tomonori Nishimura	100%	Board of Directors Nominating Committee Audit Committee	15/15 4/4 14/14	Mr. Tomonori Nishimura possesses broad knowledge, etc. based on extensive experience in the management of other companies. The Company selects him with an expectation to continuously improve corporate value by conducting supervision from the viewpoint to increase transparency and fairness of management through his duties such as providing appropriate opinions on the independent standpoint from business executors.
	Yuriya Komatsu	100%	Board of Directors Compensation Committee	15/15 8/8	Ms. Yuriya Komatsu possesses broad knowledge, etc. based on extensive experience in the management of other companies. The Company selects her with an expectation to continuously improve corporate value by conducting supervision from the viewpoint to increase transparency and fairness of management through her duties such as providing appropriate opinions on the independent standpoint from business executors.
	Akira Murakoshi				Mr. Akira Murakoshi possesses broad knowledge, etc., based on extensive experience in the management of other companies. The Company newly selects him with an expectation to improve corporate value by conducting supervision from the viewpoint to increase transparency and fairness of management through his duties such as providing appropriate opinions on the independent standpoint from business executors.

Executive Officers (as of July 1, 2022)



- 1

Representative Executive Officer,
President, Executive Officer
Eiichi Ukai*
CEO (Chief Executive Officer)
- 2

Representative Executive Officer,
Executive Officer
Hideaki Miyazawa*
Corporate General Manager, Automotive Business HQ.
Global Procurement HQ.
- 3

Executive Officer
Hiroyuki Ichikawa
Deputy Corporate General Manager,
Automotive Business HQ.
- 4

Executive Officer
Masaki Egami*
CTO (Chief Technology Officer)
Research Division
New Product & Business Strategic Planning HQ.
- 5

Executive Officer
Masayuki Kaimi
Corporate General Manager, Production HQ.
China Region
Supply & Demand Control Dept.
Production Engineering Development HQ.
Composite Material Product Division
- 6

Executive Officer
Yasuhiro Kawabata
Human Resources Strategy Dept.
Personnel Dept.
- 7

Executive Officer
Shumpei Kinoshita
Corporate Strategy Dept.
- 8

Executive Officer
Toshinori Shiratori*
Americas Region
Information Technology Dept.
- 9

Executive Officer
Tetsuya Sogo
CFO (Chief Financial Officer)
- 10

Executive Officer
Koji Takahashi
Green Energy Products Division
Manager, Information Technology Dept.
- 11

Executive Officer
Etsu Harima
Aftermarket Business HQ.
Industrial Machinery Business HQ.
Quality Assurance HQ.
NTN KOREA CO., LTD.
ASEAN, Oceania, and West Asia Region
India Region
- 12

Executive Officer
Yozo Mimura
Special Assignment
- 13

Executive Officer
Masaaki Yamamoto*
Europe & Africa Region
ESG Promotion Dept.
Legal Dept.
Trade Management Dept.
Internal Control Dept.
General Affairs Dept.

*Executive Officers concurrently serving as Directors



Outside Director
Noboru Tsuda

Outside Director
Yuriya Komatsu

Outside Director
Tomonori Nishimura

Every year, the NTN Report provides an opportunity for Outside Directors to discuss NTN’s management and sustainability issues. The contents of discussion is published as “Outside Director Dialog.” This year again, Director Tsuda, Director Komatsu and Director Nishimura held a frank and honest talk.

Topic 1 **NTN's current issues**

The business results for the fiscal year ended March 31, 2022 were in a final surplus for the first time in four years. First of all, what are your reviews of business performance and what are NTN's current challenges?

Komatsu: In the fiscal year ended March 31, 2022, we downwardly revised the plan formulated at the beginning of the fiscal year, but we were able to ultimately achieve results that exceeded the planned values at the beginning of the fiscal year. Stock prices have also risen, and in this regard, I highly evaluate the hard work of management and employees. On the other hand, there are concerns about future net income. Selling the head office building and disposing of cross-shareholdings resulted in making a profit. As a result, in the event of deterioration in business performance in the future or the event of unforeseen circumstances, the buffer for avoiding net loss was small by recording extraordinary gains. There

are many borrowings, and our financial position is not strong, so we need to maintain a sense of crisis. The biggest challenge in improving our financial position and operating cash flow is the large amount of inventory. Considering the possibility that interest rates will rise in the future, we have too many inventories in excess of 200 billion yen for a company of our size, and our interest burden will also increase. If we can significantly reduce our inventory, we will improve our operating cash flow and asset efficiency, and we will be able to secure funds that can be used for investment in the future, making us a very good company. Of course, at this point in time, we are making a company-wide effort to shrink inventories, but I want everyone to have a mindset that allows them to choose to reduce inventories even if they lose their current trade. To make such a decision easier, I think it would be better for the frontline responsible persons and managers to be aware of operating cash flow as a KPI at the same level as profits and sales.

Tsuda: We have long recognized inventory as an issue and are in the process of production reform. Although it is difficult to see the results due to various factors, such as the recent logistics disruption and the lock-down in Shanghai, we are working with a sense of urgency. In terms of performance, we set an operating income of 23 billion yen for the fiscal year ending March 31, 2023, but the key is whether or not cost increases can be passed on in line with the surge in the prices of steel and other raw materials. On the other hand, we also need to make further efforts to reduce costs. If we refuse supply because the cost cannot be passed on, and if our competitors take it over, it means that it was not cost competitive in the first place. We must place some emphasis on cost reductions. This is a strategy of raising prices in sales, reducing costs in manufacturing, and focusing on both. In addition, the lack of good profit margins in the U.S. and Europe is a major issue. In addition to the loss-making structure in the U.S. in the first place, the sharp rise in labor costs has had a major impact. Moreover, because the market in Europe is mature, we must abandon unprofitable items and promote rationalization. We are currently forming a specialized team to work on drastic measures.

Nishimura: I will make some additional comments in response to my two colleagues and say that it is worth noting that the inventory is too much. From the standpoint of an Audit Committee member, I look around the factory, which is the front line of production reform. Reducing the inventory means that production will be halted if a certain quantity of finished products is secured, and the people on the front line feel very worried about this. If production is halted, surplus man-hours will naturally be generated. In what kind of situations will this surplus man-hour be used? For example, I think it is effective to allocate the man-hours for cost reduction, such as changing the man-hours for external production to in-house production or taking on new challenges in the form of other or new assignment. Continuing with conventional production methods will make it easy for the front lines, but the era of selling a product once it has been made has already become a thing of the past, and it is important to produce goods in the proper manner. With the progress of EVs, automobile companies are entering an era in which their main products are changing steadily, and proper production is required. Especially if we have too much excess inventory and it becomes defective inventory, this will lead to the worst possible outcome. I think it is essential that management and front-line staff work together to implement reforms to ensure appropriate inventory levels. In addition, as Director Tsuda mentioned, passing on cost increases to customers is only a way to pass on rising raw material costs, and

cost reduction activities are essential to securing further incomes. Furthermore, in order to achieve operating income of 23 billion yen in the current fiscal year, I feel it is necessary to review the allocation of resources, including a fundamental review of the portfolio in the automotive market, aftermarket, and industrial machinery market.

Komatsu: Of course, both our management and executives are aware of these management issues, and we are motivated to carry them out. The direction is not wrong. The only concern is speed. As our financial strength is falling, the risk of rising interest rates is rising due to ongoing inflation, and I think we need to accelerate the speed of companywide reforms to reduce inventories to appropriate levels. I think that everyone in the company has a sufficient sense of crisis, but even if we steadily implement the right measures, if we fail to keep up with the changes in the environment, we will be forced to take a tough response. Therefore, in addition to the content of the reforms, I would like to emphasize “speed.”

Topic 2 **ESG issues toward the realization of a “NAMERAKA Society”**

A roadmap for realizing a “NAMERAKA Society” has been formulated. Please tell us about your outlook and issues for sustainability activities in the future.

Nishimura: As the Group advocates achieving carbon neutrality by the fiscal year 2035, I am paying attention to what measures the Group will take with regard to this. Of course, we will curb electricity consumption and use renewable energy. I believe that there is a place for us to thrive in the development of carbon-free materials that take the global environment into consideration. For example, making biomaterials derived from plants and using them in new bearings, or working to develop lightweight, hard, and rugged materials such as graphene, can be a message to the outside, and if they can be used in other industries, our degree of social contribution will be high. I feel that we have the foundation and human resources for such research. I would like to see the company launch such new development projects in collaboration with government agencies and other efforts to contribute to the achievement of carbon neutrality by the fiscal year 2035.

Tsuda: I am also paying attention to what happens to large-scale wind power generation. We produce large bearings and deliver them to overseas manufacturers, but Europe and China are advancing in this field while Japan is lagging behind. Since Japan’s energy policy is also greatly involved in achieving carbon neutrality, we must look at national policies and find our solution. It's quite a difficult challenge.

Human rights have also recently become a major issue. I think all Japanese companies are facing this issue, but because Japan is a homogeneous society, I don't think we have had a high awareness of human rights for many years. In reality, human rights issues have recently become increasingly focused around the world, and Japanese companies have finally begun to raise their awareness. It is difficult for some suppliers to understand the extent to which they are aware of this issue. Overseas business sites are making more progress, so it is important to be able to conduct business activities that give consideration to human rights as a whole while carefully capturing global information.

Komatsu: The issues of carbon neutrality and human rights are exactly as both my colleagues mentioned. In addition, I am concerned that diversity is not advancing very much. I didn't have much opportunity to talk face-to-face with female employees because of the new coronavirus, but from now on, I would like to actively listen to their stories. In a Japanese company with a long history, male managers intend to give consideration to working women, but it is often the case that it is difficult to promote women because their evaluation is biased without realizing it. I prefer to have more women in managerial positions and reserves, and in the end, I think it is best to have female directors from within, and I would like to start working toward that. In addition, we are currently reviewing our personnel system, but if the current system is one in which seniority-based ranks are raised, women will inevitably lag behind. If we become a system that can be promoted regardless of age, gender, or work style, I think diversity reform will progress.

Tsuda: Director Komatsu will chair the Board of Directors. I think it is rare for Japanese companies to have the chairman of the Board of Directors as an Outside Director and a woman, but I expect it to contribute to the promotion of diversity in the company.

Topic 3 **NTN's efforts to address the unstable global situation and the impact of exchange rates**

Russia's invasion of Ukraine has disrupted the value chain, and companies are facing a crisis, such as soaring energy prices. In addition, the yen is depreciating rapidly due to the monetary policies of each country. Please tell us your opinion on NTN's approach to this unstable situation and the exchange rate situation.

Komatsu: The soaring energy prices certainly create a difficult situation, but on the contrary, I think it is an opportunity to break the business practice of “bargain

sale” that has been entrenched in Japan for many years. Passing on rising purchasing costs to prices is commonplace in countries other than Japan. I would like us to change our mindset and continue negotiations with the belief that it is a matter of course. If we are able to pass on cost increases, we will be able to manage our company's supply in a flexible manner by looking at the balance between supply and demand and building a value chain in a situation where our company has an advantage. I would like us to change a crisis into an opportunity and work on it.

The value chain disruption can also be viewed as an opportunity. In order to avoid dependence on procurement in a particular region, we may be moving to procure from Japan as well. It is important to have the financial strength and the capacity to respond to this situation. To this end, we must be able to make management decisions to pass on cost increases even if we lose business. Also, in a crisis situation, it will be important to have a sense of speed to think while running in terms of how to utilize the manufacturing and sales personnel that had been assigned to the lost business.

Nishimura: As Director Komatsu said, what we need to do now is consider how to maintain physical strength. President Ukai is also working with a sense of urgency to improve our financial position as one of the important measures in the Medium-term Management Plan. There are a great deal of tasks that need to be done, such as efforts to increase the operating margins, conversion of product portfolios, and reduction of fixed and proportional costs. If we do not manage our business with true power and some amount of margin, we will be unable to take the next first action. As the external environment continues to change, we believe that improving our corporate structure will be a major point in determining how we can respond to these changes. In addition to reducing fixed costs, as I mentioned earlier, human problems are inevitable. I think the Board of Directors should discuss whether there are any surplus man-hours, and if so, whether these man-hours can be diverted to DX or new businesses, and whether investment in human capital is required to achieve it.

Tsuda: The depreciation of the yen is positive for business performance in the short term, but we do not know how it will move in the future. Under such an uncertain situation, blocking may progress for making individual products in each country. We need to carefully look at whether we can compete well in each country and region's markets and whether we are cost competitive. It is not an age in which anything can be made in cheap regions overseas. I think this is a good opportunity to review the situation in Japan.

Topic 4 **Contribution to NTN**

Finally, what contributions will you, as an Outside Director, make to NTN?

Nishimura: I have been appointed as a Director, and my second term has ended. There was also a change in the President, so I would like to talk about the changes over the past year. First of all, speaking about a positive point, the conclusion of the meeting was clarified under the strong leadership of President Ukai. As a result, I feel that the actions to be taken have been thoroughly communicated in an easy-to-understand manner, and that the actions have become quicker. In addition, in order to achieve the goals of the Medium-Term Management Plan, each Executive Officer has come to work together and team management is beginning to move forward.

On the other hand, there are two disappointing points. The first point is that while top-down is thoroughly implemented, bottom-up is insufficient. What I feel at the production reform site is that there is a lack of commitment to the results of the reforms. There is a goal of halving inventory and halving the cost of anything, and it is difficult to see the attitude that everyone is aligned on the same vector towards this goal, and I feel that the activities are biased toward some people.

We will become a strong company when the frontline employees themselves think and devise ways to reduce inventories, reduce costs, effectively use assets, and take other steps to make progress with reforms and become self-confident, and establish a culture of promoting further business reforms on a daily basis. To this end, the role of leaders on the frontline is extremely important. To move forward with confidence without fear of failure, and to trust subordinates. Furthermore, if management, production sites and sales sites can have a sense of unity, reforms will proceed even further.

The second point is that there are fewer “buffers” between operations conducted by different divisions. This sometimes gives rise to gaps in handovers between operations. This can result in situations in which it is unclear where responsibility lies. This is due to a lack of understanding among people concerning the value of their own operations. As in any business, if you are proud of your work and have an awareness of raising its value, I think the number of gaps will decrease.

I go around the site as an auditor. In production reform activities, we have had some success and achieved profitability at Kamiina Works by halving inventories. Horizontally turning this around should raise morale more. I believe my role as an Outside Director is to create an environment in which such successful examples can be shared with everyone while supporting Executive Officers.

Komatsu: I agree with Director Nishimura on the positive change discussed. I think it was a year in which the change in NTN's management and the strength of President Ukai's leadership were recognized.

With regard to our contribution to NTN, in addition to promoting diversity, I would like to thoroughly monitor various aspects. As I mentioned earlier, I believe that what we intend to do and the direction we will take are correct. It would not be a problem to proceed as it is. What I am worried about is the ability to execute and again, speed. With regard to execution, I recognize that my role is to monitor the progress of the roadmap at meetings of the Board of Directors and other occasions and to clarify the reasons, countermeasures, and deadlines for any areas that have not been achieved or that have been delayed. Regarding the speed, I will always ask them whether this speed will be acceptable. I would also like to assist with the establishment of a framework for monitoring on a company-wide basis in a timely and appropriate manner.

Tsuda: Six years have passed since I became a Director. Meanwhile, in terms of governance, we adopted a Company with a Nominating Committee, etc., and the President was also replaced. From this year, the chairman of the Board of Directors will be an Outside Director. I think I was able to contribute as the chairman of the Nomination Committee as an Outside Director.

Furthermore, I feel the company has changed in terms of its improvement in the areas of accountability and transparency, which are required by every organization. You cannot run a business if you cannot explain it to us, the Outside Directors, and obtain our understanding. I believe that this has contributed to enhancing the provision of information to society and to providing sufficient explanations to employees. In the past, the Executive Officer system also had positions such as “Senior Managing Director” and “Managing Director” that made it difficult to understand why a situation arises, but now all positions except the President have been unified into Executive Officers. In conjunction with this, the basic compensation of Executive Officers has also become more transparent, as can be understood by calculating according to the content of jurisdiction. “Why?” or “I don't know well” can also lead to employee dissatisfaction. It was six years that I worked while being conscious of fulfilling accountability and increasing transparency. In that respect, I feel that we are evolving. After that, there is nothing to say if it is accompanied by achievements. As an Outside Director, I will continue to look closely at management with high hopes for NTN.

Stakeholders	Stance to Stakeholders	Main Activities
Employees	NTN Group respects diversity, individuality and a safe and healthy workplace environment where employees can work successfully.	<ul style="list-style-type: none">■ “NTN PROUD AWARD,” as ESG Corporate Award “NTN PROUD AWARD” is a system that encourages employees’ ESG activities and commends outstanding initiatives linked to 13 items of materiality responding to SDGs identified by the Group. The system aims to promote understanding and awareness of SDGs among employees and fosters their motivation and engagement.■ Incentive payment patent system We are working to raise the motivation of employees and encourage job inventions by establishing the “Patent Management Rule” as well as the “Patent Reward Rule” and providing performance-based compensation for job inventions.■ Global QC Circle Convention We strive to improve safety, quality, and productivity on a global basis, and with the convention as a forum for international exchange, we exchange information on a variety of activities.
Customers	NTN Group seeks to maximize customer satisfaction and trust by providing products and services of superior quality, safety and reliability.	<ul style="list-style-type: none">■ Nationwide Distributors’ Meeting We invite distributors from across Japan to briefing sessions on account settlement overview and aftermarket business measures to strengthen our bond with distributors.■ Technical service units We run completely-tailored, multi-functional technical service units worldwide, equipped with teaching materials and exhibits to introduce our products, and hold bearing technical seminars for our customers.
Business partners	NTN Group, in a fair and free environment, builds good partnerships with its business partners and works together for mutual growth and development.	<ul style="list-style-type: none">■ Briefing for suppliers We share information on our globalization initiatives and the business environment surrounding our company with our business partners and have external lecturers deliver lectures targeting the business partners.■ Promotion of CSR procurement Through CSR questionnaires based on the CSR Procurement Guidelines, we promote activities with our business partners to help them understand the importance of CSR procurement.

Stakeholders	Stance to Stakeholders	Main Activities
Local communities	NTN Group respects cultures and customs in the local communities and builds long-term trust relationships by meeting their expectations through its business activities.	<ul style="list-style-type: none">■ Activities that contribute to the local community (family tours, summer festivals, etc.) We hold family tours and summer festivals at each business site as an opportunity to interact with employees’ families and neighboring residents.■ NTN Rotating School As an environmental education program for children who will lead the next generation, mobile-type schools have been opened in various places to deepen friendships with the local community.■ Conservation of biodiversity In cooperation with local residents and NPOs, we are working to protect the environment of Satoyama (village forest) areas around our business sites and to protect endangered species.
Shareholders and investors	NTN Group focuses on return for shareholders by sustainable profitable growth and builds long-term trust relationships with shareholders through active communications.	<ul style="list-style-type: none">■ Shareholders’ Meeting The Shareholders’ Meeting is a forum for communication to build long-term relationships of trust with shareholders.■ ESG briefing In addition to holding results briefings for investors, we also hold ESG briefings to promote understanding of our ESG initiatives. The opinions we receive at the briefings are used to strengthen our activities and information disclosure.
Environment	NTN Group harmonizes its business activities with nature and contributes to preserve the global environment by providing its technologies, products and services.	<ul style="list-style-type: none">■ Reducing environmental impact in business activities We are working to minimize harmful environmental impacts by monitoring and reducing emissions of CO2 and regulated chemicals in our business activities.■ Sustainable resource use We are striving for sustainable resource utilization by reducing the use of resources such as raw materials and water, and by thoroughly implementing the 3Rs (reduce, reuse, and recycle) of waste.■ Developing environment-contributing products We are contributing to the realization of a carbon-free society by developing products that can help reduce CO2 emissions during product use and natural energy-related products.

To reflect the opinions of our stakeholders in our sustainable corporate activities, we have annually held dialog with academics and experts in various fields of sustainability since 2015. For this fiscal year, the 8th dialog was held in June.

Two years ago, we identified 13 items of materiality responding to SDGs and started to work on them. In May of last year, we expressed our support for TCFD recommendations and proceeded with the identification of risks and opportunities that climate change poses to our business and the analysis of scenarios. Furthermore, in order to solve various ESG issues, from the perspectives of “forecast” that identifies the future as an extension of our business and “backcast” from the future, which aims to realize a “NAMERAKA Society,” we have formulated a roadmap that defines what goals are to be cleared and when.

In this dialog, we exchanged opinions with experts about the status of our activities and how to proceed in the future. Based on the recommendations we received, we will promote company-wide initiatives to further increase corporate value.

Topics of the dialog

Topic 1

How to proceed with ESG management

Topic 2

Carbon neutrality

Experts



Katsuhiko Kokubu
Professor, Kobe University
Graduate School of
Business Administration



Akira Yamada
Senior Consultant
JMA Consultants Inc.



Toshiya Chikada
Executive Officer
Chief Manager
Global Warming Prevention
Promotion Office
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Michitaka Shimizu
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NTN

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Masaaki Yamamoto

Manager, EHS (Environment, Health & Safety)
Integrated Management Department

Masayuki Yamazaki

Executive Officer
Corporate General Manager, Human Resources
Headquarter/Manager, Global Human Resources
Development Department/EHS (Environment,
Health & Safety) Integrated Management
Department

Yasuhiro Kawabata

Manager, Procurement/Logistics Department,
Global Procurement Headquarters

Ryuma Mano

Executive Officer
Corporate General Manager, Corporate Strategy
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Shumpei Kinoshita

Manager, Production Strategy & Control
Department, Production Headquarters

Yoshitaka Suzuki

Manager, Corporate Planning Department,
Corporate Strategy Headquarters

Takashi Nishigaito

Corporate General Manager, CSR Headquarters

Masaaki Masumoto

Manager, Corporate Communications
Department, Corporate Strategy Headquarters

Tatsuo Nagao

Manager, Corporate Value Promotion
Department, CSR Headquarters

Kouhei Iguchi

(*Assignment and title of participants are as of the dialog held.)

Topic 1

How to proceed with ESG management

NTN: We formulated a roadmap to promote ESG management in line with materiality. Could you give us your opinion on how to deploy materiality throughout the company and promote ESG management in the future?

Kokubu: Materiality means that something is important for social issues, and under normal circumstances, the resolution of materiality needs to lead to the resolution of social issues. However, this is extremely difficult for companies, and I have the impression that materiality has been identified in order to build a company sustainability management system. In this sense, NTN's materiality is also currently used to determine important areas for sustainability activities. Therefore, from among the 13 items of materiality, the question of whether or not NTN can strategically address social issues by linking NTN's activities with social issues will become important in the future.

Shimizu: I feel that NTN's materiality is extremely good in that it is developed logically by dividing society issues into strengthening positive impacts and reducing negative impacts, while linking them to the corporate philosophy. I think that the ideas and values of the company are appearing as a result of sincere efforts while referring to the guidelines as well. Here are some of our examples of how you can translate those ideas and values into future initiatives. Sekisui House, Ltd. (hereafter, Sekisui House) reviewed the identified materiality in one year. This is because the challenge of not being able to “personalize” the materiality when it was deployed to employees became visible. To prevent a situation where only some people in the company engage in ESG and sustainability initiatives, we are creating a system that allows each employee to personally address management issues. I hope that taking a step to ensure employees’ awareness, understanding, empathy, and action will lead to ESG and sustainability management in the true sense of the term.

Yamada: As a whole, I feel that aiming for “realization of a NAMERAKA Society” is a good concept. Among

the 13 items of materiality, I think that NTN's distinctive characteristics emerge in the three materiality categories of “Contribute to society through creation of original technologies.” On the other hand, the ten contents of “Form management systems / corporate organization which are essential for NTN, as a global company” apply to all companies, so how about setting specific indicators and quantifying them? By doing so, you can not only show the impact externally, but also promote initiatives with a sense of consent within the company.

NTN: We think it is necessary to confirm whether our 13 items of materiality are acceptable to our employees. It is pointed out that our materiality is exhaustive, but there are some who believe that the company's efforts to address the current materiality have just been rearranged from the ESG perspective. Rather than picking up what we are doing, we need to show our goals and think about what we have to do to achieve those goals.

Kokubu: In that regard, I look forward to the new NTN PROUD AWARD that recognizes sustainability activities. The award system has been difficult to implement, and there is some inconsistency between encouraging sustainability activities and seeking revenue responsibility. To overcome this, you must change the system of the entire company so that employees can be satisfied and motivated to conduct such activities. To put it the other way around, if you can build a solid system, it will become a stimulus and employees will be able to work on the activities with enthusiasm.

In addition, while the company's purpose is emphasized in recent sustainability management, the term “purpose” is originally the significance of an individual's existence. When individuals’ purposes are aggregated, they become a common purpose, which in turn leads to a corporate purpose. Instead of splitting the corporate purpose into individual purposes, it's a good idea to look at employees’ purposes and proceed while making sure that the corporate purpose is in line with them. I think it is important to carry out NTN PROUD AWARD until it becomes the company's corporate culture.

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Topic 2
Carbon neutrality

NTN: We have set the goal of achieving carbon neutrality in Scope 1 and 2 by the fiscal year 2035 in our roadmap. Please tell us your opinions about our efforts to achieve the goals and how our organization should be.

Yamada: Many companies have set goals such as achieving carbon neutrality by 2030, but it is necessary to make a master plan on what can be done specifically to achieve the goal. The first thing a company should thoroughly implement is to reduce energy consumption. The next thing that should be done is to change the quality of energy, such as by purchasing renewable energy. Regarding energy conservation, most companies probably feel that they have done everything they can, but in reality, many companies have not been able to “visualize” energy. In the manufacturing industry, process management is performed to improve QCD, but we are in an era where energy management must be performed as well. Returning to the objectives and functions of each process, how much energy is required for the process and how much energy is actually used? The difference is a loss, so we will reduce that loss and consider whether there is any further area for improvement. Though an approach to energy saving in utility equipment is often taken, the important thing is to manage energy on the

process side. I believe that holding discussions based on that fact will be the key to achieving carbon neutrality.

NTN: We are visualizing how much we are using, but we also have to pay attention to how much we need. In this regard, a common issue for Japanese manufacturers at present is that fewer engineers are able to understand production equipment. We think it is important to be familiar with production technologies and equipment in order to visualize the amount of energy required.

What are your thoughts on TCFD recommendations (hereafter, TCFD)?

Chikada: Sekisui House expressed its support of TCFD in 2018 and disclosed related information for the first time in 2019. At first, we didn't know how to prepare the information, but through dialog with institutional investors we are trying to refine it through trial and error. Last year, we changed the way we analyze scenarios. When considering the significance of working on TCFD, it is meaningless unless we proceed to the point of creating a system to respond to climate change within the company. However, in the past, most of the analysis of risks and opportunities was conducted by the department in charge of the environment, and the results of the analysis were not sufficiently shared within the company. Response to TCFD must not be a “task for disclosure.” Therefore, we asked all business divisions to consider

what the risks and opportunities of their business are. Then we gathered more than 500 items. By thinking within the business divisions, I think it was very good that we shared the need to respond to climate change in our business activities and personalized it. In addition, some of the risks actually gathered were not noticed by the secretariat. We can confidently say that TCFD-related information disclosed this fiscal year describes our risks and opportunities.

What will be important in the future is how to manage this risk. There are risks that do not fall within the scope of conventional risk management, and responding to these risks is becoming an issue. In addition, we need to coordinate with companies that have newly joined the Group. Not surprisingly, those companies are responding to climate change in a similar way, but if they are group companies, they must be managed in an integrated manner. We are also considering responding to this issue.

NTN: We expressed our support of TCFD last year and disclosed related information for the first time this fiscal year. The reality is that it is still a “task for disclosure.” In addition, one of Sekisui House's excellent points in its efforts toward carbon neutrality is that the value of Net Zero Energy House (ZEH) is understood by customers and reflected in prices. We are also making environment-contributing products, but we are not able to reflect them in prices. It will naturally be costly to aim for carbon neutrality, but it is difficult to answer, “What party should assume the price burden?” We would like to discuss what scenarios to talk about with customers.

Yamada: When considering materiality in the future, I propose that you discuss it with younger generations who will be responsible for the future of each division. As in the case of Sekisui House, the risks and opportunities differ for each business division. By considering the risks and opportunities, identifying the materiality, and thinking about the story on their own, they will be able to naturally talk about the added value of the products when selling them.

Kokubu: No one has verified whether TCFD's disclosures are actually effective for investors' decisions. However, as it is also required by the Corporate Governance Code, measures need to be taken. To do so, you have to read the guidelines properly and understand what information is really needed in your company's own disclosures. Otherwise, it will be a “task for disclosure.” What is needed is real reporting. This is also the case with carbon neutrality, and substantial activities are most important. In other words, instead of purchasing renewable energy, you should consider whether it is appropriate to change the energy structure.

NTN: Thank you very much for your various opinions. With regard to ESG management and carbon neutrality, we reaffirmed the importance of activities that are in line with the actual conditions of our company, as well as the importance of directly communicating with employees and customers. Based on the above recommendations, we will continue to promote our sustainability activities.



		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Financial Data * ¹												
Profit and Loss Statement												
Net Sales * ²	(Millions of yen)	543,468	539,594	638,970	701,900	716,996	683,636	744,699	733,846	651,956	562,847	642,023
Operating Income	(Millions of yen)	20,723	7,278	33,003	43,850	47,770	35,929	39,935	27,222	7,517	(3,138)	6,880
Operating Margin	(%)	3.8	1.3	5.2	6.2	6.7	5.3	5.4	3.7	1.2	(0.6)	1.1
Income (loss) before Income Taxes	(Millions of yen)	16,357	(13,897)	(2,451)	37,062	26,942	14,889	26,905	2,938	(33,949)	(1,256)	17,619
Net Income (Loss) Attributable to Shareholders (parent company)	(Millions of yen)	5,993	(14,195)	(14,648)	23,352	15,037	2,830	20,373	(6,958)	(43,992)	(11,641)	7,341
Capital Expenditures	(Millions of yen)	54,440	48,979	33,162	31,266	36,300	35,398	37,589	45,172	57,675	23,817	19,809
Depreciation and Amortization	(Millions of yen)	34,175	34,841	39,315	40,391	38,277	36,629	37,505	38,926	37,306	35,478	37,898
R&D expenditures	(Millions of yen)	17,156	16,174	17,820	18,088	18,480	19,196	21,007	21,661	19,961	17,485	17,444
Balance Sheet												
Total Assets	(Millions of yen)	693,257	768,461	848,037	856,121	794,000	797,038	839,427	840,750	757,822	836,563	855,483
Net Assets	(Millions of yen)	212,126	211,742	213,368	262,559	248,504	245,050	269,759	246,404	168,378	183,751	216,425
Inventories	(Millions of yen)	155,107	163,287	166,484	184,128	178,220	171,481	179,738	194,505	182,923	176,847	214,843
Interest-bearing Debt	(Millions of yen)	271,978	360,801	381,767	359,105	325,173	320,169	320,833	350,344	362,416	422,803	394,031
Various Indicators												
Inventory Turnover Ratio	(Times)	3.5	3.3	3.8	3.8	4.0	4.0	4.1	3.8	3.6	3.2	3.0
Net D/E Ratio	(Times)	1.11	1.37	1.27	1.11	1.11	1.05	0.93	1.16	1.87	1.62	1.38
Net Income (loss)/Average Total Assets (ROA)	(%)	0.9	(1.9)	(1.8)	2.7	1.8	0.4	2.5	(0.8)	(5.5)	(1.5)	0.9
Net Income (loss)/ Average Shareholders' Equity (ROE)	(%)	3.0	(7.2)	(7.3)	10.5	6.3	1.2	8.4	(2.9)	(22.8)	(7.1)	4.0
Equity to Capital Ratio	(%)	28.4	26.0	23.5	28.6	29.3	28.8	30.2	27.4	20.6	20.4	23.1
Return on Invested Capital (ROIC)	(%)	3.3	1.0	4.0	5.2	5.8	4.5	5.0	3.3	1.0	(0.4)	0.8
Cash Flows												
Net cash provided by operating activities	(Millions of yen)	17,052	20,505	69,058	25,120	46,247	62,387	61,799	43,224	43,749	36,473	8,956
Net cash used in investing activities	(Millions of yen)	(52,842)	(56,604)	(34,132)	(31,293)	(33,770)	(41,218)	(48,358)	(65,614)	(61,807)	(17,938)	2,512
Net cash provided by financing activities	(Millions of yen)	47,248	69,586	6,595	(37,492)	(27,958)	(8,218)	(7,520)	20,745	7,413	54,671	(41,300)
Ner cashu flow	(Millions of yen)	(35,790)	(36,099)	34,926	(6,173)	12,477	21,169	13,441	(22,390)	(18,058)	18,535	11,468
Per-share Data												
Net Assets	(Yen)	370.19	375.84	374.68	461.21	436.97	431.66	477.17	433.32	294.00	321.04	372.70
Net Income (Loss)												
Net Income (Loss)	(Yen)	11.27	(26.69)	(27.54)	43.91	28.28	5.33	38.36	(13.10)	(82.83)	(21.92)	13.83
Diluted net income	(Yen)	—	—	—	—	—	—	—	—	—	—	—
Cash Dividends	(Yen)	10.00	0	2.00	6.00	10.00	10.00	15.00	15.00	5.00	0.00	0.00
Non-Financial Data												
Number of employees (consolidated)		20,789	21,398	22,156	23,360	24,109	24,665	25,493	24,988	24,199	23,292	23,383
Percentage of employees overseas	(%)	63	63	64	66	66	66	66	65	64	62	63
Percentage of female employees (non-consolidated)	(%)	9	9	9	9	10	10	10	10	10	10	11
Average years of continuous employment	(Years)	19.0	18.5	17.7	17.6	17.5	17.5	18.6	19.0	19.3	19.5	19.9
Number of Directors		13	12	11	11	14	14	14	14	11	11	12
Number of Independent Outside Directors		2	2	2	2	2	2	2	2	5	5	6
CO ₂ emissions* ³	(10,000 tons)	53.9	56.7	59.3	61.7	60.5	62.0	65.3	72.2	62.9	53.7	57.7
Energy consumption* ⁴	TJ/year	5,857	6,134	6,331	6,463	6,336	6,493	6,849	6,978	6,326	5,783	6,623
Water consumption* ⁵	(10,000 m ³)	219.7	210.9	201.8	197.3	319.7	323.0	326.4	347.1	281.1	243.0	271.5
Waste generation	(10,000 tons)	15.0	14.1	15.0	15.4	15.9	16.3	17.7	17.7	15.5	13.1	15.4
Exchange Rate Data												
USD Average		79.08	82.91	100.17	109.76	120.15	108.39	110.85	110.88	108.73	106.01	112.34
EUR Average		109.02	106.78	134.21	138.69	132.60	118.80	129.64	128.41	120.84	123.66	130.53
USD at fiscal year end		82.19	94.05	102.92	120.17	112.68	111.85	106.49	110.64	107.85	110.36	121.89
EUR at fiscal year end		117.57	109.80	120.73	141.65	130.32	127.70	119.48	131.00	124.21	129.32	136.01

^{*1} Effective from the fiscal year ended March 31, 2019, the Company has adopted the "Partial Revision of the Accounting Standard for Tax Effect Accounting", etc. The figures for the period from the fiscal year ended March 31, 2015 to the fiscal year ended March 31, 2018 have also been reclassified to reflect the above accounting standards. In addition, from NTN Rerpot 2022, we use the financial data listed in the Annual Securities Report.

^{*2} "Loyalty," which was previously included in "non-operating income," has been changed to be included in "net sales" from the fiscal year ended March 31, 2021. The figures for the period from the fiscal year ended March 31, 2017 to the fiscal year ended March 31, 2020 have also been reclassified.

^{*3} Scope 2 CO₂ emissions since the fiscal year ended March 31, 2019 (Carbon neutral benchmark year) are calculated using emission factors sourced from "Electric Utility Emission Factors" (Ministry of the Environment and the Ministry of Economy, Trade and Industry) in Japanese sites and calculated using emission factors sourced from "Emissions Factors 2021" (IEA) in overseas sites.

^{*4} The energy of electric power is calculated using physical quantity (3.6 MJ/kWh), and the energy of fuel is calculated using the emission factor sourced from "Emission intensity database for calculation of greenhouse gas emissions of organizations through the supply chain (Ver.3.1)" (Ministry of the Environment).

^{*5} Water consumption (10,000 m³) is collected from Japanese sites until the fiscal year ended March 31, 2015, and from Japanese and overseas sites from the fiscal year ended March 31, 2016 onward.

Consolidated Balance Sheet

(In million yen)			(In million yen)		
2021		2022	2021		2022
Assets			Liabilities		
Current assets			Current liabilities		
Cash and bank deposits	154,969	128,644	Notes and accounts payable-trade	55,468	61,033
Notes and accounts receivable-trade	116,604	125,507	Electronically-recorded monetary claims	62,815	60,881
Electronically-recorded monetary claims	4,996	6,491	Short-term loans	121,836	134,229
Finished goods & purchased goods	91,848	105,514	Accrued income taxes	2,125	4,544
Work in process	48,600	55,939	Accrued bonuses for directors and statutory auditors	36	29
Raw materials and supplies	36,397	53,389	Other	50,064	60,486
Short-term loans receivable	68	57	Total current liabilities	292,346	321,205
Other	33,282	37,533	Long-term liabilities		
Allowance for doubtful accounts	-1,011	-1,045	Bonds	80,000	80,000
Total current assets	485,756	512,031	Long-term loans	220,967	179,802
Fixed assets			Reserve for product defect compensation	1,082	408
Property, plant and equipment			Liabilities for retirement benefits	39,920	36,852
Buildings and structures	225,560	237,099	Other	18,495	20,790
Accumulated depreciation	-138,245	-149,144	Total long-term liabilities	360,466	317,853
Buildings and structures, net	87,314	87,955	Total liabilities	652,812	639,058
Machinery, equipment and vehicles	710,231	753,597	Net assets		
Accumulated depreciation	-598,067	-630,990	Shareholders' equity		
Machinery, equipment and vehicles, net	112,164	122,607	Common stock	54,346	54,346
Land	32,442	33,563	Additional paid-in capital	67,970	67,970
Construction in progress	22,231	15,557	Retained earnings	52,786	60,127
Other	62,495	65,498	Treasury stock	-782	-866
Accumulated depreciation	-56,203	-59,385	Total shareholders' equity	174,321	181,578
Other, net	6,291	6,113	Accumulated other comprehensive income		
Total property, plant and equipment	260,443	265,797	Net unrealized holding gain on other securities	8,646	1,044
Intangible fixed assets			Translation adjustments	-6,865	16,025
Goodwill	—	1,983	Accured retirement benefits adjustments	-5,575	-797
Other	40,363	42,046	Total accumulated other comprehensive income	-3,794	16,272
Total intangible fixed assets	40,363	44,029	Non-controlling shareholders' equity	13,224	18,574
Investments and other assets			Total net assets	183,751	216,425
Investment securities	43,836	24,679	Total liabilities and net assets	836,563	855,483
Deferred tax assets	2,437	3,495			
Assets for retirement benefits	—	1,555			
Other	3,938	4,094			
Allowance for doubtful accounts	-213	-200			
Total investments and other assets	49,999	33,624			
Total fixed assets	350,806	343,451			
Total assets	836,563	855,483			

* Please refer to our website for Management Performance and Financial Analysis, and Risk Factors.
<https://www.ntnglobal.com/en/investors/finance.html>
* Consolidated Financial Statements are available on our website from the fiscal year ended March 31, 2022.
<https://www.ntnglobal.com/en/investors/finstatement.html>

Consolidated Statement of Operation

(In million yen)		
2021	2022	
Net sales	562,847	642,023
Cost of sales	477,666	536,070
Gross profit	85,180	105,953
Selling, general and administrative expenses	88,319	99,072
Operating income/loss (-)	-3,138	6,880
Non-operating income		
Interest income	852	866
Dividend income	568	605
Equity in earnings of unconsolidated subsidiaries	343	1,099
Foreign exchange gains	2,732	2,591
Gain on reversal of product defect compensation	—	1,213
Other	3,146	1,090
Total non-operating income	7,644	7,467
Non-operating expenses		
Interest expenses	3,505	4,277
Derivative transaction losses	2,918	812
Other	3,823	2,441
Total non-operating expenses	10,248	7,532
Ordinary income/loss (-)	-5,742	6,815
Extraordinary income		
Gain on sales of investment securities	5,699	10,483
Gain on sale of tangible fixed assets	—	3,850
Proceeds from subsidy	5,769	—
Total extraordinary income	11,468	14,333
Extraordinary losses		
Loss related to Anti-Monopoly Act	1,176	2,928
Impairment loss	2,462	601
Special factory operating loss	3,343	—
Total extraordinary losses	6,982	3,529
Income/loss(-) before income taxes and equity in earings of affiliated companies	-1,256	17,619
Income and other taxes	3,220	5,071
Income and other taxes adjustment	6,113	3,451
Total income and other taxes	9,334	8,522
Net income/loss (-)	-10,590	9,096
Profit attributable to non-controlling shareholders	1,051	1,755
Profit/loss (-) attributable to owners of parent	-11,641	7,341

Consolidated Statement of Comprehensive Income

(In million yen)		
2021	2022	
Net income/loss (-)	-10,590	9,096
Other comprehensive income		
Net unrealized holding gain on other securities	3,552	-7,615
Translation adjustments	15,056	22,947
Accrued retirement benefits adjustments	7,024	4,795
Equity in equity-method affiliates	-513	1,759
Total other comprehensive income	25,119	21,886
Comprehensive income	14,529	30,983
(breakdown)		
Comprehensive income attributable to owners of parent company	12,268	27,407
Comprehensive income attributable to non-controlling shareholders	2,260	3,575

Statement of Changes in Shareholders' Equity

(In million yen)

2021											
	Shareholders' equity					Accumulated other comprehensive income				Minority interest	Total net assets
	Common stock	Additional Paid-in capital	Retained earnings	Treasury stock	Total shareholders' equity	Valuation and translation adjustment	Translation adjustments	Accumulated accrued retirement benefits adjustments	Total accumulated other comprehensive income		
Balance on April 1, 2020	54,346	67,970	62,138	-787	183,668	5,094	-19,998	-12,607	-27,511	12,221	168,378
Changes during the current period											
Loss attributable to owners of parent			-11,641		-11,641						-11,641
Change in scope of consolidation			2,289		2,289						2,289
Purchase of treasury stock				-0	-0						-0
Sales of treasury stock				5	5						5
Net changes in items other than shareholders' equity during the period						3,552	13,133	7,031	23,716	1,003	24,720
Total changes during the period	—	—	-9,352	4	-9,347	3,552	13,133	7,031	23,716	1,003	15,372
Balance on March 31, 2021	54,346	67,970	52,786	-782	174,321	8,646	-6,865	-5,575	-3,794	13,224	183,751

(In million yen)

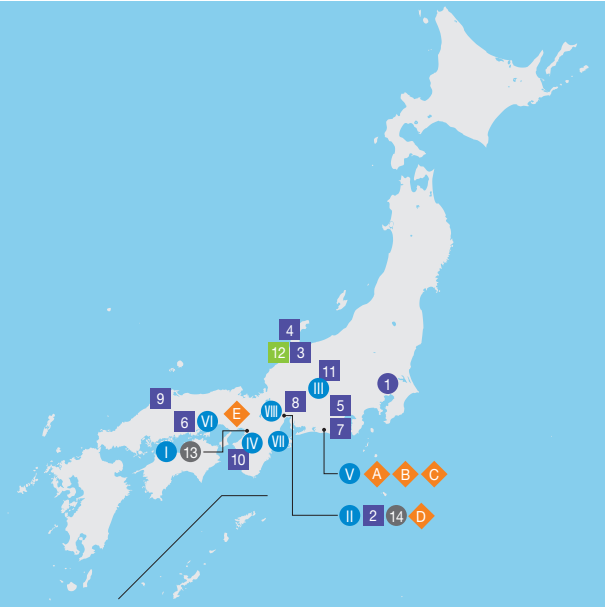
2022											
	Shareholders' equity					Accumulated other comprehensive income				Minority interest	Total net assets
	Common stock	Additional Paid-in capital	Retained earnings	Treasury stock	Total shareholders' equity	Valuation and translation adjustment	Translation adjustments	Accumulated accrued retirement benefits adjustments	Total accumulated other comprehensive income		
Balance on April 1, 2021	54,346	67,970	52,786	-782	174,321	8,646	-6,865	-5,575	-3,794	13,224	183,751
Changes during the current period											
Profit attributable to owners of parent			7,341		7,341						7,341
Purchase of treasury stock				-92	-92						-92
Sales of treasury stock				8	8						8
Net changes in items other than shareholders' equity during the period						-7,601	22,890	4,777	20,066	5,350	25,416
Total changes during the period	—	—	7,341	-83	7,257	-7,601	22,890	4,777	20,066	5,350	32,674
Balance on March 31, 2022	54,346	67,970	60,127	-866	181,578	1,044	16,025	-797	16,272	18,574	216,425

Statements of Cash Flows

(In million yen)

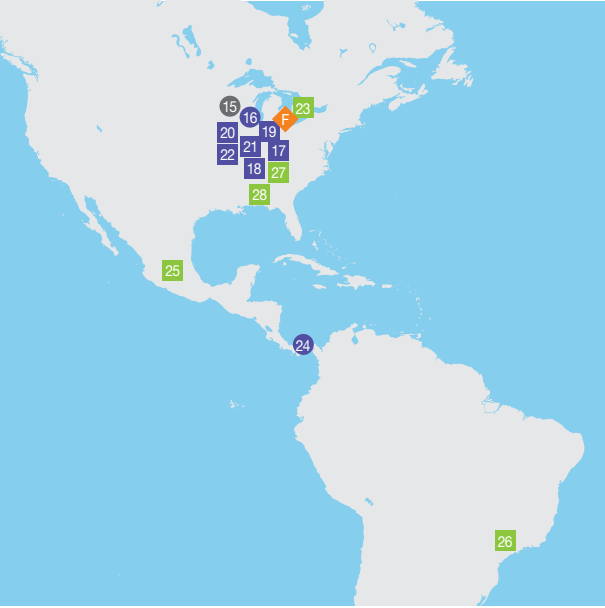
	2021	2022
Net cash provided by operating activities		
Income/loss(-) before income taxes and equity in earings of affiliated companies	-1,256	17,619
Depreciation and amortization	35,478	37,898
Impairment loss	2,462	601
Goodwill depreciation	—	160
Proceeds from subsidy	-5,769	—
Special factory operating loss	3,343	—
Loss related to Anti-Monopoly Act	1,176	2,928
Increase/decrease (-) in allowance for doubtful accounts	-148	-53
Increase/decrease (-) in accrued retirement benefits for directors and statutory auditors	-6	-7
Increase/decrease (-) in reserve for product defect compensation	-50	-684
Increase/decrease (-) in liabilities in retirement benefits	-187	1,605
Decrease/increase (-) in assets for retirement benefits	—	-1,555
Interest and dividend income	-1,421	-1,472
Interest expenses	3,505	4,277
Foreign currency translation adjustments / foreign exchange losses/gains (-)	-2,942	-1,067
Loss or gain (-) on derivative transactions	2,918	812
Equity in earnings (-) /loss of non-consolidated subsidiaries	-343	-1,099
Gain (-) or loss on sale of tangible fixed assets	—	-3,850
Gain (-) or loss on sales of investment securities	-5,699	-10,483
Decrease (-) / increase in trade receivables	-7,903	-2,165
Decrease (-) / increase in inventories	13,491	-25,300
Increase/decrease (-) in trade payables	-1,193	691
Other	2,259	-2,445
Subtotal	37,713	16,410
Interest and dividend income received	1,865	1,717
Interest paid	-3,488	-4,342
Subsidies received	4,895	898
Payment of special factory operating loss	-2,250	—
Loss related to Anti-Monopoly Act	-990	-3,125
Income taxes paid	-1,272	-2,601
Net cash provided by operating activities	36,473	8,956
Net cash used in investing activities		
Increase in time deposits	-4,830	-1,339
Decrease in time deposits	4,212	2,780
Purchases of property, plant and equipment	-21,900	-16,336
Proceeds from sale of property, plant and equipment	—	4,740
Purchase of intangible fixed assets	-7,724	-5,534
Proceeds from sales of investment securities	9,464	17,052
Loss on purchase of stock of the consolidated subsidiary	-31	—
Proceeds from purchase of subsidiaries' stock resulting in change in scope of consolidation	—	1,200
Decrease/increase (-) in short-term loans receivable, net	2,663	15
Othe	206	-66
Net cash used in investing activities	-17,938	2,512
Net cash provided by financing activities		
Increase/decrease (-) in short-term loans, net	-14,728	2,588
Proceeds from long-term loans	58,833	12,178
Repayment of long-term loans	-38,774	-52,330
Proceeds from bonds	50,000	—
Repayment of lease payable	-1,676	-2,122
Proceeds from sale and leaseback	2,270	—
Other	-1,252	-1,614
Net cash provided by financing activities	54,671	-41,300
Effect of exchange rate changes on cash and cash equivalents	2,878	4,042
Increase/decrease (-) in cash and cash equivalents	76,084	-25,788
Cash and cash equivalents at beginning of the year	71,165	147,249
Cash and cash equivalents at end of the year	147,249	121,460

Japan



Company name	Paid-in capital	Holdings as percentage (%)
I NTN Corporation (parent company)		
II Industrial Business Headquarters, Kuwana Works		
III Industrial Business Headquarters, Nagano Works		
IV Industrial Business Headquarters, Kongo Works		
V Automotive Business Headquarters, Iwata Works		
VI Automotive Business Headquarters, Okayama Works		
VII Automotive Business Headquarters Mikumo Works		
VIII Composite Material Product Division, Engineering Plastics Works		
1 NTN SALES JAPAN CORP.	JPY 480,000,000	100
2 NTN MIE CORP.	JPY 3,000,000,000	100
3 NTN HOUDATSU SHIMIZU CORP.	JPY 1,250,000,000	100
4 NTN NOTO CORP.	JPY 1,000,000,000	100
5 NTN FUKUROI CORP.	JPY 1,500,000,000	100
6 NTN AKAWA CORP.	JPY 1,250,000,000	100
7 NTN OMAEZAKI CORP.	JPY 266,000,000	97.4
8 NTN Advanced Materials Corp.	JPY 400,000,000	99.34
9 NTN CASTING CORP.	JPY 450,000,000	100
10 NTN KINAN CORP.	JPY 450,000,000	100
11 NTN KAMIINA CORP.	JPY 725,000,000	80
12 Taira Forging Co.,Ltd.	JPY 30,000,000	56.67
13 NTN TECHNICAL SERVICE CORP.	JPY 200,000,000	100
14 NTN LOGISTICS CO., LTD.	JPY 10,000,000	100 (100)
A New Product Development R&D Center		
B Production Engineering R&D Center		
C CAE R&D Center		
D Advanced Technology R&D Center		
E NTN Next Generation Research Alliance Laboratory		

Americas

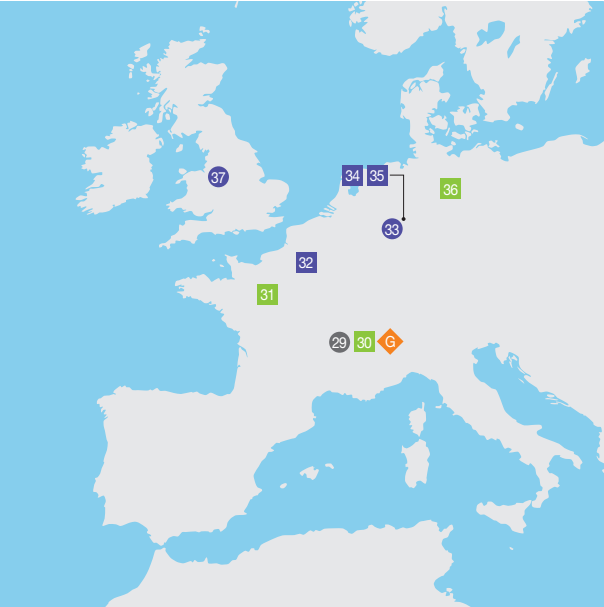


Company name	Paid-in capital	Holdings as percentage (%)
15 NTN USA CORP.	USD 493,895,440	100
16 NTN BEARING CORP. OF AMERICA	USD 24,700,000	100 (100)
17 NTN DRIVESHAFT, INC.	USD 128,800,000	100 (100)
18 NTN DRIVESHAFT ANDERSON, INC.	USD 119,000,000	100 (100)
19 AMERICAN NTN BEARING MFG. CORP.	USD 54,300,000	100 (100)
20 NTN-BOWER CORP.	USD 167,000,000	100 (100)
21 NTK PRECISION AXLE CORP.	USD 30,000,000	60 (60)
22 NTA PRECISION AXLE CORP.	USD 40,000,000	62.5 (62.5)
23 NTN BEARING CORP. OF CANADA LTD.	CAD 20,100,000	100
24 NTN-SUDAMERICANA, S.A.	USD 700,000	100
25 NTN MANUFACTURING DE MEXICO, S.A.DE C.V.	MXN 594,205,718	100 (5)
26 NTN do Brasil Produção de Semi-Eixos Ltda.	BRL 390,739,432	100 (2.72)
27 ASahi FORGE OF AMERICA CORP.	USD 10,100,000	19.8 (19.8)
28 Seohan-NTN Driveshaft USA CORP.	USD 6,000,000	49
F NTN Automotive Center		

One consolidated subsidiary in addition to the Group companies above

NOTES 1. The scope of consolidation as of March 31, 2022 consisted of NTN Corporation and 59 consolidated subsidiaries (14 domestic and 45 overseas subsidiaries). A total of 11 affiliates (10 overseas affiliates) were accounted for by the equity method.
The following changes to the scope of consolidation and application of the equity method were made during the fiscal year under review.
◆ Consolidated subsidiaries: 2 additions/No removal
◆ Affiliates: No additions/1 removal
2. Of the above subsidiaries, the following companies are specified subsidiaries: NTN USA CORP., NTN DRIVESHAFT, INC., NTN-BOWER CORP., AMERICAN NTN BEARING MFG.CORP., NTN DRIVESHAFT ANDERSON, INC., NTN do Brasil Produção de Semi-Eixos Ltda., NTN-SNR ROULEMENTS (‘NTN-SNR’), NTN NEI Manufacturing India Private LTD., NTN (CHINA) INVESTMENT Corporation, NANJING NTN CORP., and SHANGHAI NTN CORP.

Europe



Company name	Paid-in capital	Holdings as percentage (%)
29 NTN Europe Holdings SAS	EUR 1,000,000	100
30 NTN-SNR ROULEMENTS	EUR 123,599,542	100
31 NTN TRANSMISSIONS EUROPE	EUR 39,988,327	100
32 NTN TRANSMISSIONS EUROPE CREZANCY	EUR 11,500,000	100 (100)
33 NTN Wälzlager (Europa) G.m.b.H.	EUR 14,500,000	100
34 NTN Kugellagerfabrik (Deutschland) G.m.b.H.	EUR 18,500,000	100
35 NTN Mettmann (Deutschland) G.m.b.H.	EUR 25,000	100 (100)
36 NTN Antriebstechnik G.m.b.H.	EUR 50,000	100
37 NTN BEARINGS (UK) LTD.	GBP 2,600,000	100 (0.04)
G NTN-SNR R&D Center		

Six consolidated subsidiaries in addition to the Group companies above

Asia and Others



Company name	Paid-in capital	Holdings as percentage (%)
38 NTN BEARING-SINGAPORE (PTE) LTD.	SGD 36,000,000	100 (0.97)
39 NTN BEARING-MALAYSIA SDN.BHD.	MYR 1,000,000	100 (100)
40 NTN BEARING-THAILAND CO., LTD.	THB 780,000,000	100 (99.999)
41 NTN MANUFACTURING (THAILAND) CO., LTD.	THB 1,311,000,000	100 (99.999)
42 NTPT CO., LTD.	THB 700,000,000	75 (10.73)
43 PT. NTN BEARING INDONESIA	USD 7,300,000	100 (100)
44 NTN BEARING INDIA PRIVATE LTD.	INR 300,000,000	100 (0.1)
45 NTN NEI Manufacturing India Private LTD.	INR 4,808,000,000	97.4 (24.96)
46 NTN KOREA CO., LTD.	KRW 500,000,000	100
47 NTN (CHINA) Investment Corporation	USD 388,547,500	100
48 NANJING NTN CORP.	USD 180,000,000	100 (86.67)
49 SHANGHAI NTN CORP	USD 166,500,000	95 (95)
50 Guangzhou NTN-Yulon Drivetrain Co., Ltd.	USD 12,500,000	60 (12)
51 Xiangyang NTN-Yulon Drivetrain Co., Ltd.	USD 34,000,000	60 (60)
52 NTN-RAB (CHANGZHOU) CORP.	USD 28,440,000	100
53 NTN CHINA LTD.	HKD 2,500,000	100
54 TUNG PEI INDUSTRIAL CO., LTD.	TWD 1,257,232,620	27.35
55 TAIWAY LTD.	TWD 160,000,000	36.25
56 NTN-DONGPAI (Shanghai) Bearing Sales Co, Ltd.	USD 1,460,000	25 (25)
57 Shanghai Tung Pei Enterprise Co., Ltd.	USD 36,000,000	17.86 (17.86)
58 PT. TPI MANUFACTURING I NDONESIA	USD 55,415,050	28.8 (0.002)
59 PT. Astra NTN Driveshaft Indonesia	IDR 120,000,000,000	49
H NTN China Technical Center		

One consolidated subsidiary in addition to the Group companies above

3. Figures in curved brackets under ‘Holding as percentage’ indicate the percentage of indi-rectly owned holdings, and are included in the total holding.
4. None of the companies has submitted a securities registration statement or securities report.
5. Of the above subsidiaries, NTN-BOWER CORP. is a company with excess of debts and the amount of excess of debt is 11,941 million yen as of March 2022.
6. Of the above subsidiaries, NTN BEARING CORP. OF AMERICA and NTN-SNR have sales (excluding internal sales between consolidated companies) accounting for more than 10% of consolidated sales. Figures for NTN-SNR are consolidated figures encompassing eight NTN-SNR subsidiaries.
7. Of the above subsidiaries, 1 to 10 are NTN Corporation business units, 1 to 26 and 29 to 53 (in symbols 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59) are consolidated subsidiaries, and 27, 28 and 54 to 59 (in symbols 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59) are affiliates subject to the equity method.

NTN Report 2022 third-party opinion



Professor, School of Business Administration,
Kwansei Gakuin University

Chika Saka

Profile

After working as a full-time lecturer and assistant professor (associate professor) at the School of Business Administration, Kwansei Gakuin University, she has been a professor since 2008. Currently, she is a member of Sustainability Standards Board of Japan (SSBJ), a member of the Science Council of Japan, a member of the Osaka Prefecture Environmental Council, a member of the Osaka City Environmental Council, and a managing director of the Accounting and Economic Association of Japan. She received the Japan Accounting Association Award. Her publications include "Environmental Accounting" (Tokyo Keizai Publishing Co., Ltd.), etc. in the book.

In this report, the description of the value creation story was greatly expanded from 16 pages to 40 pages last year. As for "NTN's strengths," it has been linked to "invested capital" and risks, opportunities and measures, strengths and materiality initiatives in the value chain, business strategies in the Medium-term Management Plan, and efforts to strengthen the financial position and revenue base have been incorporated into the value creation story. Regarding sustainability management, the materiality and KPIs have been linked to the targets for the fiscal year ending March 31, 2023. Integrated thinking was more reflected, the value creation story became compelling, and the positioning of each initiative became easier to understand. The Integrated Report comprehensively covers finance and non-finance to provide an overview while clarifying the roles of entry to other reports and materials.

The value creation story thoroughly explains the investment of R&D resources in six target areas, the restructuring of business and product portfolio through selection and concentration, and the promotion of DX. Strategies to strengthen competitiveness under the Medium-term Management Plan have been steadily implemented, and the direction of value creation is indicated in conjunction with the revitalization scenario of the CFO message.

In terms of sustainability management, each item is linked to the KPIs for materiality and the targets for the fiscal year ending March 31, 2023. In terms of reducing CO2 emissions, Scope 1 and 2 are set as ambitious targets for carbon neutrality by the fiscal year 2035. Scope 3 is also specified as a target by the fiscal year 2050. In the process of aiming for this goal, it is also mentioned to pursue the creation of economic value, and there

is always an awareness of its links to value creation.

Disclosures based on TCFD recommendations, which were endorsed in May 2021, were also added to provide an explanation of the current status of governance, strategy, risk management, metrics, and targets, an awareness of risks and opportunities using scenario analysis and corporate responses. Currently, the creation of sustainability disclosure standards is advancing rapidly on a global level. However, NTN has made disclosures of core content in anticipation of ISSB's exposure draft, and information disclosure based on SASB standards has been expanded from last year. Compliance with global disclosure requirements is progressing, leading to improved corporate evaluation. Looking ahead, strategies will strengthen resilience by addressing the financial impact of risk and opportunities on a company's financial position, performance, and cash flows, and in terms of metrics and targets, the amount of assets and investments related to risk and opportunities. If these items can be shown, it is expected to lead to an increase in trust from global investors.

It should also be noted that the new theme of "prosperous human development" includes initiatives concerning respect for human rights, promote safety and health, human resource development, and promote diversity. The management commitment shows a strong will to develop human resources for the next generation, indicating that the foundation is being laid for the realization of human capitalism. The message that resonates with employees in the opening paragraph, the "NAMERAKA Society" we aim for must have been cultivated on this foundation.

Regarding governance, in the fiscal year 2022, a new NTN PROUD AWARD was established to recognize employee ESG activities, and ESG items were introduced in the Executive Officer evaluation system. These are expected to serve as tools to promote ESG initiatives from both bottom and top perspectives.

Throughout the whole process, the leadership of top executives is becoming widespread, and a story of sustainable growth is being communicated to readers. I am confident that this report can be communicated to stakeholders in an easy-to-understand manner, thereby contributing to the realization of collaboration through the spirit of coexistence and co-prosperity.

Response to the third-party opinion

We would like to thank Professor Saka for her valuable opinions.

Through the practice of our corporate philosophy, we aim to contribute to the resolution of social issues surrounding the world and realize a "NAMERAKA Society" where people can easily lead a secure and fulfilling life. In the fiscal year 2021, KPIs and the targets for the fiscal year ending March 31, 2023 were clarified with the aim of using the materiality identified in December 2020 to create specific actions. Among these, we have also set carbon neutral targets. We have received high praise for our activities, and we have been confident in our efforts to date.

In addition, in terms of creating standards for sustainability disclosure presented to us, we have noticed that what investors require from companies is the financial impact associated with risks and opportunities, the viability of resilient responses associated with those metrics and targets, and the ideal way of disclosing information from this perspective.

We will listen sincerely to the valuable opinions we have received this time and strive to increase corporate value over the medium to long term.



Executive Officer
ESG Promotion Department
Masaaki Yamamoto

Head Office

NTN Corporation
3-17, 1-chome, Kyomachibori, Nishi-ku,
Osaka 550-0003, Japan

Transfer Agent for Common Stock

Mitsubishi UFJ Trust and Banking Corporation
4-5, 1-chome, Marunouchi, Chiyoda-ku,
Tokyo 100-8212, Japan

General Meeting of Shareholders

The General Meeting of Shareholders
was held on June 21, 2022 in Osaka

Common Stock

Authorized: 1,800,000,000
Issued and Outstanding: 532,463,527

Stock Exchange Listings

Tokyo Stock Exchange
(#6472)

Stock Price Range in the Fiscal Year ended March 31, 2022

High: 355yen
Low: 181 yen

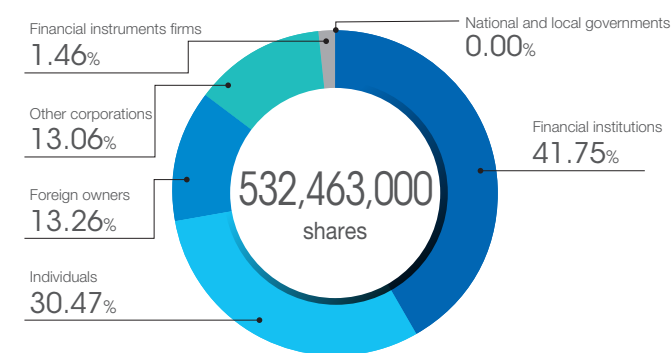
Number of Shareholders

59,691

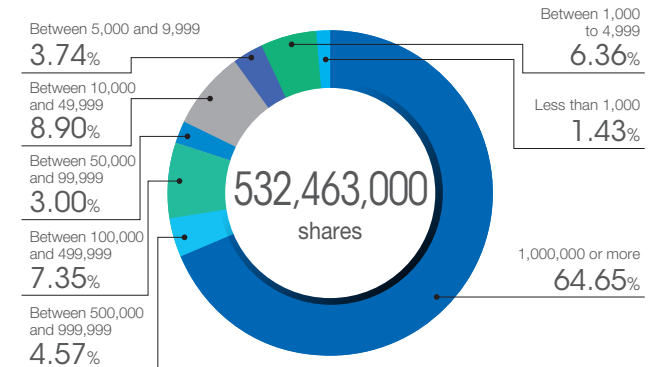
Independent Audit Firm

Ernst & Young ShinNihon LLC

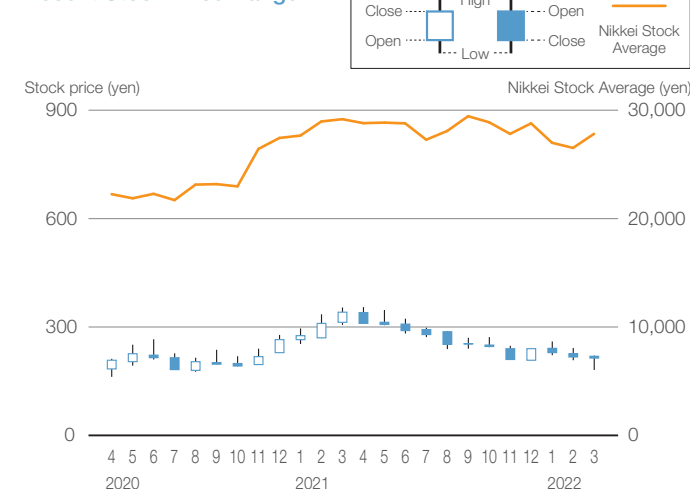
Breakdown of Shareholders



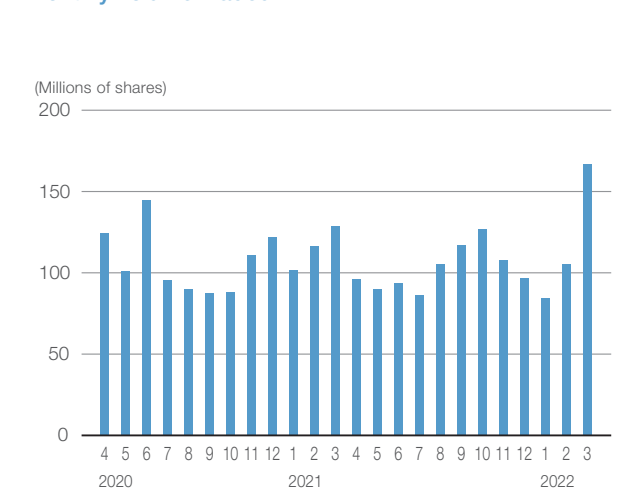
Breakdown of Number of Shares Held



Recent Stock Price Range



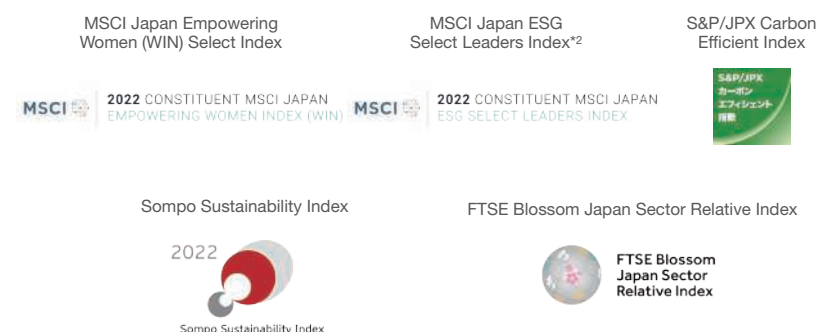
Monthly Volume Traded



Status of inclusion in ESG indexes

*1 Inclusion status as of the end of July 2022.

*2 The inclusion of NTN Corporation in any MSCI index, and the use of MSCI logos, trademarks, service marks or index names herein, do not constitute a sponsorship, endorsement, or promotion of NTN Corporation by MSCI or any of its affiliates. The MSCI indexes are the exclusive property of MSCI. MSCI and the MSCI index names and logos are trademarks or service marks of MSCI or its affiliates.



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NTN on the Internet

NTN's website offers a variety of corporate and product information, including the latest NTN Report and financial results.

<https://www.ntn.co.jp/>

SASB Index

We disclose information according to the requirements of the RESOURCE TRANSFORMATION SECTOR-INDUSTRIAL MACHINERY & GOODS and the TRANSPORTATION SECTOR-AUTO PARTS, which are classified by SASB.

Although some indicators are not applicable to our company and indicators that we have not been able to disclose are included, we disclose as much as possible and will continue to make efforts to enhance the disclosure of these SASB topics.

RESOURCE TRANSFORMATION SECTOR-INDUSTRIAL MACHINERY & GOODS

Sustainability Disclosure Topics and Accounting Metrics

Topic	Accounting Metric	Unit of Measure	Fiscal year ended March 31, 2022	SASB Code
Energy Management	(1) Total energy consumed	TJ*	P.97-98 Consolidated Financial Indicators (Past 11 Years)	RT-IG-130a.1
	(2) Percentage grid electricity	MWh*	https://www.ntnglobal.com/en/csr/environment/sitereport/total.html	
	(3) Percentage renewable	MWh*	https://www.ntnglobal.com/en/csr/environment/sitereport/total.html	
Employee Health & Safety	(1) Total recordable incident rate (TRIR)	Rate	https://www.ntnglobal.com/en/csr/nonfinance.html	RT-IG-320a.1
	(2) Fatality rate	Rate	https://www.ntnglobal.com/en/csr/nonfinance.html	
	(3) Near miss frequency rate (NMFR)	Rate	Not disclosed	
Fuel Economy & Emissions in Use-phase	(1) Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles	Gallons per 1,000 ton-miles	N/A	RT-IG-410a.1
	(2) Sales-weighted fuel efficiency for non-road equipment	Gallons per hour	N/A	RT-IG-410a.2
	(3) Sales-weighted fuel efficiency for stationary generators	Watts per gallon	N/A	RT-IG-410a.3
	Sales-weighted emissions of: (1) nitrogen oxides (NOx) and (2) particulate matter (PM) for: (a) marine diesel engines, (b) locomotive diesel engines, (c) on-road medium- and heavy-duty engines, and (d) other non-road diesel engines	Grams per kilowatt-hour	N/A	RT-IG-410a.4
Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	P.66 Sustainable supply chain P.67-68 Prosperous human development/Respect for human rights	RT-IG-440a.1
Remanufacturing Design & Services	Revenue from remanufactured products and remanufacturing services	Qualitative information*	P.56-57 Contribute to carbon-free society/ Reduce energy loss	RT-IG-440b.1

Activity Metric

Topic	Accounting Metric	Unit of Measure	Fiscal year ended March 31, 2022	SASB Code
Activity Metric	Number of units produced by product category	Number	N/A	RT-IG-000.A
	Number of employees	Number	P.97-98 Consolidated Financial Indicators (Past 11 Years) P.19-20 Value Creation Process	RT-IG-000.B

TRANSPORTATION SECTOR-AUTO PARTS

Sustainability Disclosure Topics and Accounting Metrics

Topic	Accounting Metric	Unit of Measure	Fiscal year ended March 31, 2022	SASB Code
Energy Management	(1) Total energy consumed	TJ*	P.97-98 Consolidated Financial Indicators (Past 11 Years)	TR-AP-130a.1
	(2) Percentage grid electricity	MWh*	https://www.ntnglobal.com/en/csr/environment/sitereport/total.html	
	(3) Percentage renewable	MWh*	https://www.ntnglobal.com/en/csr/environment/sitereport/total.html	
Waste Management	(1) Total amount of waste from manufacturing	10,000 tons*	P.64 Recycling and pollution prevention	TR-AP-150a.1
	(2) Percentage hazardous	tons*	https://www.ntnglobal.com/en/csr/environment/chemical.html#anchor02	
	(3) Percentage recycled	%	P.64 Recycling and pollution prevention	
Product Safety	Number of recalls issued	Number	Not disclosed	TR-AP-250a.1
	Total units recalled	Number	Not disclosed	
Design for Fuel Efficiency	Revenue from products designed to increase fuel efficiency and/or reduce emissions	Reporting currency	P.57 Contribute to carbon-free society	TR-AP-410a.1
Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	P.66 Sustainable supply chain P.67-68 Prosperous human development/Respect for human rights	TR-AP-440a.1
Materials Efficiency	Percentage of products sold that are recyclable	%	Not disclosed	TR-AP-440b.1
	Percentage of input materials from recycled or remanufactured content	%	Not disclosed	TR-AP-440b.2
Competitive Behavior	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	Reporting currency	https://www.ntnglobal.com/en/investors/iin.html	TR-AP-520a.1

Activity Metric

Topic	Accounting Metric	Unit of Measure	Fiscal year ended March 31, 2022	SASB Code
Activity Metric	Number of parts produced	Number	P.47 Reorganization of production	TR-AP-000.A
	Weights of parts produced	M/T	Not disclosed	TR-AP-000.B
	Area of manufacturing plants	number of bases*	P.19 Value Creation Process	TR-AP-000.C

*Information is disclosed in units different from those required by SASB.



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CAT.No.1002/E 22.10.03 TK/TK