Risks, Opportunities and Measures

NTN Group analyzes risks and opportunities for each business environment such as the global trend of carbon neutrality, the accelerating electrification to achieve the carbon neutral goal, labor shortages and human rights issues, and takes countermeasures in line with the materiality. In order to respond to drastic changes in the external environment, we are implementing regular reviews on anticipated risks and opportunities.

NTN's Business Environment		Risks for the Company	Opportunities for the Company	Main Measures	Materiality
Response to paradigm shift	Spread of next-generation mobility	● 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	● 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	● 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 (Wakayama Works) ● Develop hydrogen-related products ● Promote production reform and reorganization aimed at improving the productivity ● Strengthen the automotive aftermarket business	2 3 4 6
	Electrification of industrial machinery	● Reduced use of bearings due to electrification of internal combustion and hydraulic equipment	● Demand for high performance products such as higher efficiency products ● Increasing demand for high value-added products such as bearings with built-in sensors	● Strengthen development of products for electrification and high value-added products ● Provide next-generation mobility modules for industrial machinery	3
	Spread of AI and IoT	● 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)	● 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	● Provide service solutions through CMS technology, etc. ● Develop service-oriented business 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 ● E-commerce based on the new IT core system ● Realization of smart factories including Wakayama Works ● Strengthen external collaboration	2 4
	Spread of infectious diseases (COVID-19)	● Decrease in scale of sales due to economic stagnation ● Crisis of business continuity ● Damage to employees' health and safety ● Shutdown of business activities due to the spread of infectious diseases within the workplace ● Disconnection of supply chain	● Growing demand for manpower-saving technologies ● Utilizing microscopic coating technologies for drug discovery	● 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	4 8 10
Response to environmental issues	Reduction in CO_2 emissions	● 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 ● Suspension of dealing with customers and deterioration of corporate image in the event of failure to respond to the demands of society	● 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)	● 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 energy conservation in production facilities ● Introduction of renewable energy ● Develop lighter-weight, higher efficiency driveshafts and low friction hub bearings ● Provide next-generation mobility module ● Develop hydrogen-related products	1 2 3
	Requests for energysaving machinery	● 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	● Increasing demand for energy-saving products ● Responding to new needs	● Provide compact, lightweight and low-torque products ● Product development utilizing original technologies	3
	Reduction in environmental impact	● 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	● 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	● 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	● Shutdown due to a disaster ● Spillage of oil, chemical substances, etc. caused by natural disasters ● Disconnection of supply chain	● Increasing demand for emergency power source ● Expansion of partnerships	● Formulation of BCPs and BCP drills at the NTN Group ● Provide independent power supply utilizing renewable energy-based power generation and storage technologies	2 4 8
Changes in demographics	Medium-to long-term labor shortage	● Impact of a human-dependent production system on stability of operations	● Accelerating labor saving and automation of production lines	● Provide robot-related modules such as i-WRIST™ in response to labor-saving issues ● Realization of smart factories including Wakayama Works ● Promote and maximize the diversity of employees ● Promote production reform and reorganization ● Promote the work style reform	4 6 8 10 11
	Growth of emerging countries	● Entry of emerging manufacturers ● Soaring procurement prices due to the entry of competitors ● Shortage of limited materials and resources	● 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	● Stable supply of basic products ● Global production supporting optimal supply ● Realize the best mix of global and local procurement	6
	Issue of business succession	● Suppliers and sales distributor going out of business	● Start of business with new suppliers	● Support business continuity through dialog with suppliers ● Develop new business partners ● Reorganize suppliers and shorten supply chain	6 7
Globalization of the business	Trade friction and tariffs	● Sluggish global demand ● Disconnection of supply chain caused by dependence on one country (China risk, etc.) ● Downward pressure on profits due to higher tariff costs ● Rapid exchange-rate fluctuations	● Expanding opportunities to supply products and services utilizing global networks	● Realize the best mix of global and local procurement through procurement reform	6
	Prevention of child labor (human rights)	● 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	● Improvement of corporate image through active response to human rights issues	● 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 9 12
	Response to conflict minerals	● Deterioration of quality ● Suspension of dealing with customers and deterioration of corporate image in the event of failure to respond to conflict minerals issues	● Improvement of corporate image through active response	● 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 9
	Rise of low-cost products	● Intensified price competition due to aggressive sales by emerging manufacturers ● Loss of sales opportunities ● Loss of brand value due to lower prices	● 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	● 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

Materiality ➔ P.19