Deepening the Value Chain

Each activity in the value chain shown in the collaborative value creation model makes efficient use of the various forms of NSK's capital and reinforces business activities by employing the strengths of internal capital, focusing especially on intellectual, manufacturing, and human capital. Here, we showcase the key capital inputs into each activity, NSK's strengths, and the tasks that are being addressed with the aim of further deepening the value chain.

Intellectual Capital / Manufacturing Capital / Human Capital / Social/Relationship Capital / Financial Capital / Natural Capital

R&D/ Equipment Development

Based on its core technologies, which comprise tribology, materials, numerical simulation, and mechatronics as well as its manufacturing engineering technologies, NSK's R&D activities in fundamental research, advanced development, application development, and manufacturing engineering lead to the further development of existing technologies as well as the creation of new products, technologies, and businesses.

Utilization of Capital

- Intellectual / Manufacturing: Environmentally friendly R&D and equipment development based on the Company's core technologies
- Intellectual / Manufacturing: Accumulation of experience and know-how through a global structure and network for R&D centers, and a patent strategy that utilizes business strengths
- Human: Development of technical staff through unique educational institutions and systematic education programs
- Social/Relationship: Extensive network with customers, suppliers, external research institutes, and others
- Financial: Financial foundation for funding R&D and equipment development; technology and equipment-related investments in target fields

Strengths Created

- Proprietary equipment development capabilities
- Depth of technical human resources
- Accumulated technological capabilities and environmentally conscious problem-solving capabilities
- Product development capabilities through collaboration with customers and external parties as well as a joint development structure and systems
- Product and equipment development capabilities through stable technology-related investment

Proposal/ Receipt of Orders/ Mass Production Preparation

Having worked together to ascertain customer and social needs while coordinating on a global basis, sales and technology divisions put forward technical and pricing proposals and conduct demonstrations that culminate in the receipt of orders. At the same time, steps are taken to engage in design activities for the mass production of products for delivery to customers, where new designs are required, and preparations for the setup of processes and production equipment at plants.

Utilization of Capital

- Intellectual / Manufacturing: Design, cost management, mass production preparation, and response capabilities based on quality, cost, delivery, development capabilities, and service management (QCDDSM Glossary)
- Intellectual / Manufacturing: Support for setting up overseas plants and addressing various issues based on the production technology and know-how accumulated as mother plants Glossary
- Human: Cross-regional systems and systems that cover key customers in each region
- Social/Relationship: Utilizing relationships of trust with customers and the Company's brand recognition
- Financial: Financial foundation for funding capital investments

Strengths Created

- Global sales strength as well as development and supply capabilities
- Proposal capabilities through collaboration between global sales personnel and engineers
- NSK's brand distinguished by its high quality and environmental consciousness
- Reductions in mass production costs through the in-house development of production equipment and use of specialized production equipment
- Engineering capabilities that help realize timely, reliable, stable production of new projects

Procurement

Based on the specifications determined by the development and design departments, activities to procure the raw materials/components used in products, production facilities, sub-materials, and the like. The Company realizes high-level QCD and stable procurement through fair, impartial, transparent, and socially and environmentally friendly transactions with its suppliers.

Utilization of Capital

Intellectual / Social/Relationship
- Build a sustainable supply chain through such measures as the prompt identification of contingencies and coordinated response initiatives based on relationships of trust with suppliers as well as strengthening endeavors from a CSR perspective
- Engage in continuous improvement activities with suppliers and QCD engagement through joint development

Intellectual / Human
- Promote flexible procurement through global purchasing
- Supplier selection by experienced buyers

Strengths Created

- Resilient supply chain
- Optimal location procurement through a global procurement system

Production/Delivery

Product manufacturing requires coordination among a wide range of operations, including manufacturing quality assurance, manufacturing engineering, equipment management, production control, plant accounting, and general affairs work to ensure stringent management over quality, cost, and delivery (QCD). Both the Industrial Machinery Business and the Automotive Business have their own plants, maintain appropriate inventories, and deliver products in a timely manner.

Utilization of Capital

Intellectual / Human
- Continuous improvement activities; the training of engineers at domestic and overseas plants; the passing down of technologies through training; proper stockholding and strict inventory control by management human resources engaging in advanced sales, production, and inventory (SPI)

Manufacturing
- Address global demand through 39 and 46 production plants and facilities in Japan and overseas, respectively

Natural
- Energy- and resource-saving production activities

Social/Relationship
- Promote smooth production activities based on relationships of trust with customers, suppliers, and local communities

Strengths Created

- High-level SPI management Glossary
- Excellent equipment development capabilities as well as on-site and maintenance capabilities well versed in the use of facilities
- Production structure and systems that meet global demand in a timely manner
- Commitment to core values

Technical Support/Aftermarket

Technical support post sales entails product repair, whereas aftermarket (AM) Glossary services encompass the maintenance and repair of customers' and end-users' equipment and machinery and sales expansion centered on MRO Glossary through the use of CMS Glossary. Feedback from customers is reflected in the improvement of products, the development of new products, and related activities.

Utilization of Capital

Intellectual
- Provide customers with technical proposals and support in the aftermarket
- Engage in research into and analysis of product defects and the status of damage based on feedback from customers and end-users; propose product improvements and new technologies

Social/Relationship
- Respond promptly and meticulously through an extensive network of distributors and sales outlets; address repair and maintenance demand for other companies' products; meet sudden demand for non-scheduled maintenance; drawing on each of the aforementioned, also work toward immediate delivery through the use of distribution channels, including customers

Strengths Created

- Technical proposal and support capabilities based on research and analysis data obtained from the Group's distributor and sales outlet network

	Issues for Further Development		Key Performance Indicators	Related Page(s)
R&D/ Equipment Development	Passing on and deepening of skills	● Set and promote development themes in anticipation of technological change ● Train and retain engineers to hand down and evolve technologies	● Number of participants in NIT Glossary ● Technology-related investment for growth (3%–4% of sales) ● GHG emissions Scope 1 and 2 ● Number of environmentally friendly products Glossary developed ● Number of technical proposals	P.28, P.44
	Pursue development efficiency and quality	● Improve development and evaluation efficiency through the use of digital twin technologies ● Focus on quality and efficiency at the development stage and improve manufacturing engineering through the use of digital technology ● Develop environmentally friendly equipment (improve product yield, the use of recycled materials, energy savings, and resource conservation)		
	Strengthen existing product capabilities and develop new products	● Develop environmentally friendly products ● Further utilize open innovation		
Proposal/ Receipt of Orders/ Mass Production Preparation	Supply capabilities from optimal locations in line with changes in demand	● Supply capabilities from optimal locations in line with changes in demand (AM, ICE products, new products)	● Rate of lead time reduction ● New product net sales ● Productivity 1.5 times	P.23, P.25
	Proposal capabilities	● Improve technical proposal capabilities based on changing customer and social needs		
	New value creation	● Propose and provide value and services in new styles, including selling services		
	Increase the efficiency of mass production design	● Utilize core assets (capitalized differentiation technology) aimed at increasing the efficiency of mass production design and reducing lead times ● Strengthen process management aimed at enhancing design and product quality Glossary ● Improve mass production and evaluation efficiency through the use of AI and simulations		
	Ultra-stable and increasingly efficient production	● Strengthen the effectiveness of BCPs in production ● Enhance efforts to build smart factories Glossary and next-generation lines ● Shift to production equipment and production processes that enhance energy- and resource-saving		
Procurement	Stable procurement	● Ensure the flexibility of supply, strengthen the effectiveness of supply chain BCPs ● Optimize the supplier portfolio	● Systematic supplier risk assessment and support ● Implementation of supplier CSR self-assessments once every two years, covering approximately 90% of suppliers	P.47
	Responsible procurement	● Improve CSR management throughout the supply chain ● Ensure the awareness of reducing environmental impact throughout the value chain		
Production/ Delivery	Deepening monozukuri	● Develop and secure human resources; put in place a comfortable workplace ● Implement new NSK manufacturing methods that combine Advanced Production System (APS) improvement activities and digital technologies	● Cumulative total number of participants in the NSK Manufacturing Education and Training Center Glossary ● Lost-time injury frequency rate ● Customer quality awards	P.30
	Service quality	● Build a supply chain that can respond swiftly to changes in demand ● Accumulate know-how through products and technical services and improve services through global expansion		
	Further pursuit of core values	● Strengthen efforts aimed at reducing environmental impact on distribution ● Introduce renewable energy and promote energy saving in production activities ● Undertake thoroughgoing risk assessments of equipment and machinery		
Technical Support/ Aftermarket	Customer satisfaction	● Employ design and development that leverages customer and market field data ● Strengthen channel management, cultivate specialists	● Share and sales by industry or product	P.23, P.25