NSK’s Business Activities and Corporate Value Creation (Deepening of Value Chain)

**Value Chain**

Our Four Core Technologies plus One are triloby, materials, numerical simulation, mechatronics and manufacturing engineering (see p. 42).

- **NSK’s strengths**: in its ability to solve complex technological problems based on our Four Core Technologies plus One, the breadth of talented technical staff and accumulated technologies gained through deep knowledge and experience.
- **Based on our tight-knit relationships with customers, we can quickly grasp their product- and technology-related needs and guide development to meet those needs**.
- **NSK leverages collaborations and joint development with our customers, suppliers and external research institutions in its product development (e.g., steel materials, grease, motors, electronic control units (ECUs)).**
- **NSK has a global network of technology centers**.
- **NSK has systematic education programs and educational institutions, including the NSK Institute of Technology (NIT), for the training and strengthening of its technical staff.**

NSK has internal systems that support tight-knit communications between customers and the Company’s engineering and sales staff.

- **NSK’s global development and supply capabilities also help to win a variety of orders (e.g., orders for newly developed, improved and existing standards/products).**
- **Global Account Managers (GAMS) and Key Account Managers (KAMS) work together on project requirements.**
- **NSK focuses on high-quality, environmentally friendly products that are trusted by customers.**

**Tasks Being Addressed to Deepen the Value Chain**

- **Based on changing customer and social needs, improvement in the level of proposal capabilities utilizing existing and newly developed technologies.**
- **Supply proposals from optimal locations that make use of global production sites.**
- **Maintaining relationships of trust and proposal/provision of value/services in new styles that go beyond conventional methods.**

**Our Strengths**

- **Engineering and of “plus one” manufacturing engineering” that emphasizes and optimizes quality from the development stage.**
- **Training and retention of engineers to hand down and evolve Four Core Technologies.**
- **Development of technologies and products to contribute to the protection of the global environment/CO2 reduction.**

**Key Inputs**

- **Technical staff (human capital).**
- **Accumulated technologies, R&D centers (intellectual capital).**
- **R&D structure with external partners (social/relationship capital).**
- **Financial foundation for funding R&D (financial capital), etc.**

- **Experience and track record in QCDSM (manufacturing, intellectual and human capital).**
- **Strong relationships with customers (social/relationship capital).**
- **Sales capabilities (human capital).**
- **Technical proposal capabilities (intellectual and human capital).**
- **NSK brand recognition (social/relationship capital), etc.**

**Mass Production Design/Preparation**

- **Mass production design entails the design of large-lot products delivered to customers. Mass production includes both newly designed products and standard products that do not require new designs.**
- **Mass production preparation involves the setting up of processes and production equipment at mass production plants once designs have been finalized.**
- **In many cases, customer approval is required for product specifications, equipment and processes.**

**Utilization of core assets (capitalized differentiation technology) aimed at streamlining mass production design and reducing lead times.**

- **Equipment and process settings to achieve stable mass production quality and reduced workload.**
- **Assurance of required quality level of markets (end users) and reflection in products.**
- **Improvement of development and evaluation efficiency by utilization of AI and simulation.**

- **Installation of mass production equipment that contributes to global environmental protection and CO2 reduction.**

**NSK’s Business Activities**

NSK engages in B2B operations, with its major customers including automakers and machinery manufacturers.

NSK has two business segments, the Industrial Machinery Business and the Automotive Business, which reflect the industries in which the Company’s customers operate. The Industrial Machinery Business Division Headquarters and the Automotive Business Division Headquarters oversee these businesses on a global level.

Each business division headquarters maintains its own production, sales and technology units that take responsibility for the entire value chain, from marketing activities for order receipt to product design, manufacturing, sales, delivery, payment collection and aftermarket services. As shown in the chart on the right, NSK’s value chain creates value for its customers through business activities encompassing R&D, manufacturing, sales and feedback underpinned by its core values: safety, quality, compliance and the environment.
## Shared Features of the Industrial Machinery Business and the Automotive Business

NSK’s products are components that enhance the performance of the customer’s machinery in which they are incorporated. The product specifications and functional requirements of our customers have an impact on NSK’s products and business activities.

**QCCDSM:** Quality, Cost, Delivery, Development, Service and Management play an important role in securing NSK’s competitive advantage.

Demand conditions in the industries of our customers affect NSK’s net sales and profits.

The ability to develop business on a global scale affects NSK’s competitiveness and growth potential.

The ability to propose technological solutions is a key to acquiring new projects.

In principle, products are manufactured once orders are received, rather than in anticipation of orders.

### Procurement
- Relationships of trust and coordination with suppliers (social/relationship capital)
- Development purchasing (intellectual and human capital)
- Buyer skills (human capital)
- NSK continuously maintains and strengthens favorable and strong relationships with its suppliers.
- NSK achieves a high level of QCD through continuous improvement activities and joint development in collaboration with suppliers.
- NSK has a structure that enables in-house development, manufacturing as well as procurement of facilities and equipment within the Group.
- NSK is strengthening its tolerance to foreign exchange rate fluctuations by expanding localization of procurement.
- In the event of, for example, a natural disaster, the Company has in place a system to quickly ascertain the damage status and supplier problems and take the necessary measures in cooperation with them.
- NSK promotes CSR activities throughout the supply chain toward the realization of a sustainable society.
- Stable procurement (ensuring flexibility of supply, strengthening effectiveness of supply chain BCP)
- Optimization of supplier portfolio (thorough collaboration and competitive principles)
- Improvement in level of CSR management throughout the supply chain
- Reduce environmental impact throughout the value chain (appropriate management of environmentally hazardous substances, global warming countermeasures)
- Improvement of productivity using IoT (smart factory, next-generation line development, etc.)
- Strengthening the effectiveness of BCP in production (strengthening building and equipment tolerance, improving complementary supply capacity)
- Training and retention of human resources to hand down and evolve monozukuri, creation of comfortable workplaces
- Shift to production facilities and production processes that contribute to global environmental conservation and CO₂ reduction

### Manufacturing
- Production plants and facilities (manufacturing capital)
- Various manufacturing engineering, accumulated know-how (intellectual capital)
- Production technical skills (human capital)
- Suppliers and local communities (social/relationship capital)
- Steel used as a raw material, components, oil, electric power and water (natural capital, manufacturing capital), etc.
- Operating 20 plants in Japan and 64 plants overseas, NSK possesses a production system able to meet global demand in a timely manner.
- As mother plants, some of the plants both in Japan and overseas have established support systems, such as for launching overseas plants and addressing measures for various tasks.
- Small-group activities (QC circles) are conducted at each plant on an ongoing basis to improve workplace processes. More overseas plants are being operated under the supervision of local staff.
- The NSK Manufacturing Education and Training Center provides hands-on training to engineers from plants around the world with the aim of passing down technical skills and improving technical capabilities.

### Sales/Aftermarket
- Human resources to undertake production, sales and inventory (PSI) management (human capital)
- Aftermarket service distribution channels (customers, distributors and sales outlets), etc.
- Human capital (social/relationship capital)
- Production-related survey and analytical data (intellectual capital), etc.
- NSK responds quickly and meticulously through its global sales network (118 locations).
- NSK aims to maintain appropriate levels of inventory and undertakes strict inventory controls with advanced PSI management.
- The bedrock of the aftermarket business is NSK’s strong relationship with distributors and sales outlets as well as its extensive network.
- NSK has advanced analysis capabilities and accumulated technologies from access to a wide range of data fields, such as for defects and damage at customers and end users.
- In addition to responding to repair and maintenance demand not only for its own products but also for other companies’ products, NSK leverages its advanced network to respond quickly to occasional demand outside of routine maintenance.
- Feedback is used to improve products and propose solutions with new technologies.

### Feedback
- Design and development that leverages customer and market field data
- Ongoing strengthening of efforts to reduce the environmental impact of logistics
- Building of supply chain that can respond rapidly to demand fluctuations
- Further improvement in customer satisfaction (strengthening of channel management, cultivating specialists)