Advanced technical capabilities. Proprietary research and development. Nikon’s perspective creates the future.

Advanced technical capabilities based on Nikon’s opto-electronics and precision technologies. In 2019, we launched Nikon Research Report*, technical bulletin, as a means of highlighting Nikon’s technical capabilities and corporate value. The content includes technical descriptions of the products released or announced in the fiscal year ended March 31, 2019, as well as paper topics evaluated by external institutions. Going forward, we plan to continue publishing to introduce the results of Nikon’s R&D activities to society. Nikon is committed to furthering R&D while advancing technological innovation to ensure the creation of novel manufacturing technologies and new solutions to a variety of issues.

Basic technologies that support Nikon

To strengthen Nikon’s existing businesses and create new ones, it is vital to continue basic R&D activities based on a long-term perspective. With opto-electronics and precision technologies as the foundation, Nikon is conducting R&D in a wide range of technologies including optics, precision measurement and manufacturing, image processing, materials, and software and systems.

Technology Strategy Committee

In accordance with the company-wide mid/long-term plan, this committee is working on establishing the direction of technology development and priority investment areas, while identifying technology strategies that will aid in developing new areas of focus and enhance the competitiveness of our existing businesses. We are proceeding with technological development based on the mid/long-term plan in the three areas of long-term growth set last year: Digital Manufacturing, Vision Systems/Robotics, and Healthcare. This process will help Nikon achieve long-term growth while actively responding to a wide range of social issues and needs.

Accelerating product development with a platform for utilizing AI

The Nikon Group has established a platform and environment for utilizing AI efficiently and effectively. Based on this platform, we are currently accelerating product development that combines AI with opto-electronics technologies and precision technologies. We are also working to optimize the platform for AI-based autonomous production processes in order to enhance the foundation for manufacturing of the future.

Reinforcing the quality management system

Nikon has established a Basic Quality Policy for the quality management system, created a Quality Control Directive to effectively execute the policy, and implemented it throughout the Nikon Group. Nikon’s Monodzukuri (manufacturing) is optimized through consistent strengthening of the quality management system and prevention of the occurrence of quality problems, thereby ensuring consistent “Made by Nikon” product quality nationwide.

Manufacturing

Consolidate technologies and increase productivity. Synergy-driven Monodzukuri (manufacturing).

The Nikon way of Monodzukuri (manufacturing) utilizes system optimization from a Group-wide perspective along with consideration of each part of the process from the product development and design stage. Nikon positively promotes activities to enhance all aspects of productivity, including procurement, manufacturing and quality assurance. And Nikon is constantly evolving, in order to accurately meet increasingly diverse customer needs, and to contribute to prosperity, convenience and assurance in everyday life through our products.

Monodzukuri (manufacturing) structure

Improving production technology for optical components on a Group-wide basis while establishing a production system with enhanced efficiency, Nikon continuously strives to strengthen its overall Monodzukuri (manufacturing) system. Nikon’s products comprise optical and stage units as well as a diverse range of functional units. For optical units, which are at the core of Nikon’s product superiority, production facilities, human resources and production technologies are now concentrated at Tochigi Nikon, while the development and design departments previously dedicated to each product have been consolidated within the Optical Engineering Division. Nikon is further enhancing productivity through digital manufacturing utilizing AI and IoT.

Initiatives to improve QCD (Quality, Cost, Delivery)

Nikon Monodzukuri (manufacturing) has developed internationally and must deliver products that attain “Nikon quality” regardless of their production locations. Through introduction and strengthening of a common quality management system and production technology, Nikon realizes precisely the same quality worldwide, which means that the extremely high quality is maintained regardless of where Nikon products are produced. And in order to accurately meet customer requirements not only for quality, but also regarding cost and delivery, Nikon is advancing improvement from such diverse perspectives as development, design, procurement, manufacturing and quality.

Promoting front-loading

Nikon mass-produces digital cameras and interchangeable lenses not only at factories in Japan, but also at our facilities around the world. In any manufacturing process, teams are formed at the production site from the development stage, with opinions exchanged and discussed multiple times. Employing computer simulations shortens the development term, ensuring that any issues are discovered at an early stage and appropriate measures can be considered to successfully optimize manufacturing.

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*The Nikon Research Report is available on Nikon’s global website. See the back cover for details.