THK's History

THK CO., LTD. manufactures and supplies vital machine components around the world. THK products help to convert slippage into controlled rotary motion, enabling parts of machinery to move smoothly, easily, and precisely with linear motion. As a company focused on creation and development driven by its corporate philosophy of (1) providing unique products to the world and generating new trends to contribute to the creation of an affluent society, THK has continued to focus on the development of a variety of products, including the Linear Motion (LM) Guide, since its establishment in 1971.

Expansion of the IoT

While rolling motion was commonly achieved through rolling contact utilizing rotary bearings, linear motion was considered difficult to achieve through rolling contact, and it primarily came from sliding contact instead.

In 1971, THK developed the ball spline, which enabled a high-quality linear motion precision and performance. This ball spline was the predecessor to THK's current mainstay product, the LM Guide, which was first introduced in 1972.

In 1973, the company's products were adopted by a U.S.-based pioneer of the machine center and world-class leader of its day. This breakthrough was the catalyst for the increased use of the LM Guide in machine tools.

Ball Spline

Developed in the same year that THK was established, the LM Guide is a revolutionary product that allows balls to roll along a grooved groove machined into the ball spline's shaft, taking the load that the device can tolerate and preventing the transmission of torque.

The 1970s: The Early Years

During the 1970s, the use of the LM Guide in semiconductor manufacturing equipment surged dramatically, in line with the increase in semiconductor demand. Entering the 2000s, with the proliferation of mobile devices and digital home appliances, as well as the upswing in demand for semiconductor, flat panel display, and other similar manufacturing equipment, there was a rise in the use of the LM Guide, and THK's second-generation Caged Ball LM Guide. In tune with the increasing globalization of manufacturing, THK accelerated its business development around the world.

The 1980s: Significan Development in Factory Automation (FA)

The 1990s: The Rise of the Electronics Industry

The 2000s: Significant Developments in Factory Automation (FA)

As globalization has progressed, the market around THK has also steadily expanded with the rapid development of new technologies such as AI and the IoT. Under these circumstances, the Company aims to expand its business domains through three growth strategies: expanding its geographical range through full-scale globalization; purposefully expanding its domains through the development of new business areas; and fully utilizing AI, the IoT, robotics, and other technologies in a variety of ways through change in business style. While moving forward with these strategies, THK is accelerating the initiatives being conducted in its industrial machinery and automotive and transportation businesses to achieve the following management targets by the end of the 2022 fiscal year: consolidated net sales of ¥500 billion, an operating income of ¥100 billion, an ROE of 17%, and an EPS of ¥560. Furthermore, the Company will aim to achieve not only these management targets, but also long-term growth and an increase in its corporate value as it contributes to the creation of a sustainable society.

THK listed on over-the-counter (OTC) market in 1989.

THK listed on the first section of the Tokyo Stock Exchange (TSE).

THK Manufacturing of Europe S.A.S. (FRA) established.

THK Manufacturing of China (SHANGHAI) CO., LTD. (CHN) established.

THK Manufacturing of China (KAI) CO., LTD. (CHN) established.

THK Manufacturing of China (LIAONING) CO., LTD. (CHN) established.

THK (SHANGHAI) CO., LTD. (CHN) established.

THK Manufacturing of Vietnam CO., LTD. (VNM) established.

THK Manufacturing of Europe S.A.S (FRA) established.

THK listed on the first section of the Tokyo Stock Exchange (TSE).

Production and sale of the Caged Roller LM Guide began.

THK listed on over twocorner (OTC) market THK TRADING CO., LTD. (JPN) established.

THK Manufacturing of America, Inc. (USA) established.

THK Manufacturing of China (SHANGHAI) CO., LTD. (CHN) established.

THK Manufacturing of China (KAI) CO., LTD. (CHN) established.

THK Manufacturing of China (LIAONING) CO., LTD. (CHN) established.

THK Manufacturing of Vietnam CO., LTD. (VNM) established.

Net Sales (Millions of yen)

3/1972 1972


2002

2003

THK listed on the first section of the Tokyo Stock Exchange (TSE).

THK Manufacturing of Europe S.A.S. (FRA) established.

THK Manufacturing of China (SHANGHAI) CO., LTD. (CHN) established.

THK Manufacturing of China (KAI) CO., LTD. (CHN) established.

THK Manufacturing of China (LIAONING) CO., LTD. (CHN) established.

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THK Manufacturing of China (LIAONING) CO., LTD. (CHN) established.

THK Manufacturing of Vietnam CO., LTD. (VNM) established.

Net Sales


Expansion of the IoT

Effective in the 2017 fiscal year, THK's existing reporting periods for the fiscal years ended December 31 have been adopted. Effective fiscal year is December 31. All financial figures in this report are expressed in Japanese yen, with one hundred yen equaling one cent in this report. Financial figures in this report are expressed in Japanese yen, with one hundred yen equaling one cent in this report.

Please refer to THK's website for the Financial Section.

Value Creation

With solid capital supporting its manufacturing, sales, and R&D activities, THK has provided solutions to customers in the form of tough, durable, and high-quality products and extensive know-how. THK has grown rapidly as a result, contributing to society through manufacturing.

To achieve long-term growth and contribute to the creation of an affluent society during a time when the business environment changes at a bewildering pace, THK will promote its growth strategies and strengthen the various forms of capital that support its business.
Three Key Characteristics and Strategies

The Key Characteristics of THK, the Pioneer and Top Manufacturer of the LM Guide

As the world’s leading manufacturer in its field with a proven track record of long-standing success, THK has fostered three key characteristics over many years. Drawing on the strengths of its corporate culture, the Company is further honing these key characteristics in an effort to secure long-term growth and generate corporate value.

1. Innovative Core Technology
THK pioneered the development of the world’s first LM Guide based on an original concept and innovative technology. By providing components essential to increased precision, rigidity, speed, and energy efficiency in such wide-ranging fields as machine tools and semiconductor manufacturing equipment, the Company has consistently played a major role in the ongoing development of industry.

2. High-Quality Products and Wide-Reaching Proposals
Since it successfully developed the LM Guide, THK has commanded the leading share of the global market. As the world’s top manufacturer, the Company has earned the trust of its customers by creating high-quality products and wide-reaching proposals based on extensive expertise developed in response to customers’ needs. In addition to refining these key characteristics, THK has actively expanded its reach beyond the field of industrial machinery to also encompass fields related to consumer goods.

3. Global Structure for Supplying Products
THK has actively promoted the development of an integrated production and sales structure with facilities and operations close to centers of demand. The Company currently maintains local production and sales networks that cover its four principal markets: Japan, the Americas, Europe, and Asia. As a result of its activities, THK has steadily built a global business platform, with branches currently established in 25 countries around the world, and continues to cultivate new markets.

Strategies to Expand Business Domains

THK is committed to developing its business through three growth strategies: expanding its geographical range through full-scale globalization, purposefully expanding its domains through the development of new business areas and fully utilizing AI, the IoT, robots, and other technologies through a change in business style.

- Full-Scale Globalization
- Development of New Business Areas
- Change in Business Style
This data was taken from the following 12 production facilities in Japan:
60.0
0
0
40.0
6.0
0
12.0
3.0
6.0
0

China       Asia and Other
Japan       The Americas       Europe

Operating Margin (Right Scale)
Operating Income (Left Scale)

Operating Margin
Operating Income/
(Millions of yen)

Net Sales1 ¥115,320 ¥121,081 ¥106,866 ¥118,366 ¥67,443 ¥121,973 ¥148,718 ¥274,897 ¥326,033 ¥344,718

300,000
200,000
100,000

CO2 Emissions

Emissions Rate

Data from the 2017 fiscal year that ended December 31, 2017, includes data from January to March 2017.

This data was taken from the following 12 production facilities in Japan:

Yamagata, Kofu, Gifu, Mie, Yamaguchi, THK NIIGATA, THK INTECHS (Sendai and Mishima), NIPPON SLIDE, and THK RHYTHM (Hamamatsu, Inasa, and Kyushu)

Number of Employees (Consolidated)


HR Data (Parent Company)

Turnover Ratio (%) 1.7 1.5 1.6 1.8

Individuals on Childcare Leave 23 21 41 46

Ratio of Female Employees (%) 14.1 14.5 14.5 14.4

Number of Employees 3,386 3,420 3,581 3,773 3,891

Average Years of Service 17.8 18.3 17.5 17.1 17.3

Ratio of Females Employees (%) 14.1 14.5 14.5 14.4 15.0

Number of Employees 11,756 11,738 13,364 13,478 13,280

No. 21, published on September 13, 2013) and other standards have been applied, and from the first quarter consolidated cumulative accounting period, "Net income" is referred to as "Net income attributable to shareholders of THK CO., LTD." For the purposes of comparison, the results for the 2018 fiscal year are also noted in accordance with IFRS.

For the 2019 fiscal year, the THK Group decided to adopt IFRS beginning with the 2019 fiscal year. To facilitate comparison with the 2019 fiscal year, the results from the 2018 fiscal year are also noted in accordance with IFRS.

Please refer to THK’s website for the Financial Section.
https://www.thk.com/eng/ir/annual/

Additional information for THK's sustainability initiatives can be found on the Sustainability section of their website.
Looking Back on the 2019 Fiscal Year

In terms of the external environment during the 2019 fiscal year, the signs of an economic slowdown spreading mainly in China due to trade friction with the United States strengthened fears of a global economic downturn. In Japan, factors such as sluggish exports and production due to reduced external demand from China have clouded the future of the economy with uncertainty. Even as the THK Group saw adjustments in overall demand due to the trade friction between the United States and China, we steadily achieved sales through the high backlog of orders we accumulated during the previous period of increased demand for electronics and accelerated movement toward automation and robotization. However, our consolidated net sales decreased to ¥274.5 billion, a 20.3% reduction from the strong results of the previous fiscal year.

In terms of cost, we strove to minimize our losses from reduced sales by continuing to promote initiatives aimed at boosting productivity along with other improvement activities. However, the magnitude of the reduction in sales resulted in an operating income of ¥18.2 billion, a decrease of 65.4%.

Short-Term Adjustments and Medium- to Long-Term Market Expansion

Although demand for THK products was sluggish in every region due to the trade friction between the United States and China, adjustments are occurring in customer inventories and our order backlog, and signs indicate that orders have bottomed out and we will start to hear about recovery. Nevertheless, we are anticipating lower revenue and profit in the 2020 fiscal year, which ends December 31, 2020. We are planning for our consolidated net sales to reach ¥264.0 billion, a decrease of 3.9%, and for our operating income to reach ¥11.4 billion, a decrease of 37.6% compared to the previous fiscal year.

However, as we weather this short-term period of adjustment, there is no doubt that the THK Group’s markets will experience medium- to long-term growth. As current megatrends revolve around macrodynamic changes such as the rapid advancement of digital technology, the heightened momentum of environmental conservation, and the labor shortages and increased lifespans occurring in developed countries, the keywords to address these changes are 5G, AI, the IoT, CASE, Industry 4.0, automation, and labor and energy savings. These keywords drive demand for the types of solutions THK offers, resulting in a dramatic medium- to long-term growth potential. Therefore, even as we continue to control costs in the short term, we will prepare ourselves for the full recovery of demand and invest in our medium- to long-term growth.

Steps Toward Further Growth

Under these circumstances, the THK Group has accelerated its provision of new solutions in various domains to create a new kind of customer experience. For our industrial machinery business, we began accepting orders for LM Guide applications of our “OMNI edge” IoT service for the manufacturing industry on December 18, 2019. At the same time, we are working to expand the service to other machine components, having begun recruiting participants for a ball screw trial. We will also make the system even easier to use by providing connectivity with external manufacturing IoT infrastructures. As we enter the 5G era, further strides will be made in automation and robotization once Industry 4.0 environments are established, and the speed at which a company can achieve predictive failure detection and preventative measures will be critical as machines become increasingly interconnected. In this
January 2020, we established a new IDT Innovation Division to accelerate our efforts to deliver innovative services to our customers and society through digital technology, surrounding the IoT and AI, including Omni THK and Omnedge.

As short lead times become critical in this era of rapid change, we have launched the THK DX Project to accelerate the pace of our work through internal reforms. During Step 1 last year, we reduced the time it takes to perform routine tasks in every department. For Step 2, we will shift the employees that were freed up during Step 1 toward work with higher added value and develop measures to expand sales.

To cultivate new business fields, we continue to develop and propose new products for medical equipment, aircraft, seismic isolation and damping systems, renewable energy, and other fields, thereby steadily expanding the use of our products. Additionally, due to labor shortages and rising labor costs, there has been an increasing demand for products that will reduce labor needs in service industries such as logistics, retail, and restaurants. We will continue to make every effort to capture this demand.

For our automotive and transportation business, we faced an operating loss in 2019 due to the slowdown in global automotive sales as well as unforeseen costs related to the launch of new products manufactured entirely—from the aluminum forging process to machining and assembly—at THK RHYTHM AUTO-MOTIVE CANADA. As a result of shipments for a large line of business being postponed due to a schedule change, we forecast that the investment made in advance will overtake our profit, leading to an operating loss for 2020. However, we anticipate that these products will begin shipping toward the end of 2020, and we will be bolstering our productivity and process improvements in addition to revamping our global products and manufacturing lines, restructuring our employees and organization, and outsourcing. As a result, we will reduce our costs by around ¥2 billion, and we estimate turning a profit of ¥1.5 billion in the 2021 fiscal year. As we move forward, we are also accelerating our efforts to develop and sell new auto-motive products that make use of our core linear motion technology, spurred by the momentum of self-driving automobiles, electric vehicles, and other CASE trends.

In addition, as both business divisions advance their respective initiatives, we have strengthened our global production structure to support medium- to long-term top-line expansion. Besides the already completed expansions of the THK Yamagata (Japan) and THK MANUFACTURING OF VIETNAM (Vietnam), we are scheduled to finish construction and begin production at our new facilities for THK India (India) and SAMICK THK (a South Korean affiliate) in 2023. For the automotive and transportation company, we have completed the new expansions that multiple facilities underwent to prepare for large-scale business, and we are preparing for shipping. At the same time, we are strengthening our bottom line through controlling costs and making improvements in productivity by utilizing automation, robotization, and the IoT in our production processes in addition to implementing IT tools in our internal business processes, including in our sales and administrative departments.

**Medium- to Long-Term Market Expansion**

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<tr>
<th>Megatrends</th>
<th>Changes</th>
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<td>Changes</td>
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<td>Changes in technology</td>
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<td>Next-generation auto parts</td>
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**Striving for Sustainable Growth and Solutions to Social Challenges**

Our high-performance, high-quality products have contributed to labor and energy savings and advancements in machinery and many other industries. In addition to seizing opportunities for market expansion exemplifying the keywords of change that reflect the times, we will continue to establish our global production structure, improve our global procurement rate, and further strengthen our BCP to achieve our corporate philosophy of providing innovative products in the future and creating a sustainable business.

April 2020

Akihito Teramachi
President, CEO
Activities to Foster Medium- to Long-Term Growth

As current megatrends revolve around macrodynamic changes such as the rapid advancement of digital technology, the heightened momentum of environmental conservation, and the labor shortages and increased lifespans occurring in developed countries, the keywords to address these changes are 5G, AI, the IoT, CASE, Industry 4.0, automation, and labor and energy savings. These keywords drive demand for the various solutions THK offers. The Company is promoting various initiatives in both its industrial machinery and automotive and transportation businesses to realize this growth potential.

Industrial Machinery Business

Orders Officially Open for OMNIedge, an IoT Service for Manufacturing

THK began accepting orders for LM Guide applications of OMNIedge on December 18, 2019. At the same time, the Company also began recruiting 50 participants for a free trial of ball screw applications. When recruiting for the free OMNIedge trial beginning October 2018, THK received applications from over 100 companies. Fifty-one were selected from various industries to participate in the trial, during which the Company collected and analyzed data about actual equipment environments. Many companies praised OMNIedge as a result of the trial, which led to the commercialization of the service.

What is OMNIedge?

OMNIedge is a system that uses the data-collecting THK SENSING SYSTEM, a Cisco edge computing router, and an NTT DOCOMO network to predict failures before they happen by quantifying and analyzing the status of machine components. Through the visualization of a component's status, OMNIedge supports effortless production planning by making maintenance more efficient, reducing inventory management costs, and improving machine operating rates. In addition to adopting a subscription model that limits initial investment costs, THK offers a package that is easy to install and includes everything from the sensor to the network, providing a simple and secure system with zero initial costs.

Concept
- Quantifying the condition of an LM Guide, ball screw, etc.

Features
- Quantifies condition (damage/lubrication) of an LM Guide, ball screw, etc.
- Can be installed on current equipment

Structure
- Promoting visualization of bearings, spindles, telescoping elements, servo motors, and other components

The OMNIedge Analytics software analyzes data.
Initiating Step 2 of the THK DX (Digital Transformation) Project

As digital technology advances around the world, every industry is rapidly advancing efforts to generate new value for existing business. Under these circumstances, the THK Group is promoting the THK DX Project in order to comprehensively organize the IT efforts of each department and branch, thereby enhancing customer satisfaction in a manner fitting with the times. During Step 1 in the 2019 fiscal year, THK worked to reduce the time it takes to perform routine tasks in every department. For Step 2, the Company will shift the employees that were fixed up during Step 1 toward work with higher added value and develop measures to expand sales.

Expanding THK’s Global Production Structure

In an effort to support medium- to long-term top-line expansion, THK is strengthening the global production structure for its industrial machinery business. Besides the expansions of the THK Yamagata plant (Japan) and THK MANUFACTURING OF VIETNAM (Vietnam) that are now in operation, the Group is scheduled to finish construction and begin production at its new facilities for THK India (India) and SAMICK THK (a South Korean affiliate) in 2020. THK will continue to strengthen its production structure in order to steadily capture the anticipated medium- to long-term growth of demand spurred by the aforementioned keywords that accompany evolving trends.

Activities to Foster Medium- to Long-Term Growth

As digital technology advances around the world, every industry is rapidly advancing efforts to generate new value for existing business. Under these circumstances, the THK Group is promoting the THK DX Project in order to comprehensively organize the IT efforts of each department and branch, thereby enhancing customer satisfaction in a manner fitting with the times. During Step 1 in the 2019 fiscal year, THK worked to reduce the time it takes to perform routine tasks in every department. For Step 2, the Company will shift the employees that were fixed up during Step 1 toward work with higher added value and develop measures to expand sales.
Guided by the corporate philosophy of "providing innovative products to the world and generating new trends to contribute to the creation of an affluent society," THK continually strives to create original products as a company focused on creation and development.

**A Global R&D System for the Next Generation**

THK conducts R&D at the Technology Center and its new headquarters established in October 2017 in Tokyo. At these locations, the Company is endeavoring to use its core linear motion system technology and expertise to develop its mainstay linear motion systems, mechatronic devices such as XY precision stages and linear motor actuators, and products in fields related to consumer goods such as automotive parts, seismic isolation and damping systems, and medical equipment.

In 2010, the THK Group established the R&D Center in China. This facility, which was THK's first R&D facility outside of Japan, began full operation in 2012. With the addition of TRA's German R&D facility in 2015, the THK Group is on its way to building R&D structures oriented toward the Americas, Europe, and Asia in order to more accurately meet the needs of customers around the world.

**Initiatives During the 2019 Fiscal Year**

To meet the varied needs of its customers, THK's industrial machinery business has expanded its lineup of LM Guide and ball screw products and developed a wide array of new products that contribute to the automation of customers’ production lines.

In terms of the IoT, the Company has begun to operate its OMG Bridging service, which has networking capabilities, introducing a system that can diagnose LM Guide failures and lubrication status. THK has also begun recruiting for a free trial of a system to diagnose preload loss on ball screws. The Company endeavors to provide continuous service covering predictive failure detection through replacement part procurement.

Furthermore, as automation and robotization progress in every field, many visitors came to the 2019 International Robot Exhibition held in December, where the Company displayed demos and products that contribute to automation and robotization in various areas, all highlighting the theme of “Supporting people with motion technology.”

For its automotive and transportation business, in response to the shift towards electric automobiles, THK has utilized new production methods to introduce aluminum products to the market in order to expand sales and meet customer needs for more lightweight components. The Company has also developed aluminum hot forging technology in-house in North America and delivers products manufactured with this technology to customers. As a second pillar in addition to its linkage and suspension business, the Company is also developing and mass-producing linear motion products for use in CASE-related autonomous driving, and is working to serialize these products and expand sales. Furthermore, as a third pillar, the THK Group will promote the development of next-generation products incorporating multiple technologies in development departments in Japan and overseas by looking forward five or ten years and anticipating needs customers might not be aware of yet while also working to expand the Company’s product lineup to meet current customer needs.

**THK’s Philosophy on Intellectual Property**

**Basic policy**

As a company focused on creation and development, THK values and promotes the creation and full utilization of its intellectual property to continue contributing to the development of its customers around the world and to the creation of an affluent society through the development of innovative products.

By applying for patents and preserving its specialized knowledge, THK exercises exclusive rights to its linear motion technology and eliminates imitations. At the same time, to avoid infringing upon the patents of others in the industry, THK works with its planning and development departments to conduct thorough patent searches while still in the development stage, and the Company internally educates its employees so that they respect the patent rights of third parties to avoid patent infringement.

Through full-scale globalization and other means, THK is striving to expand the breadth of its preservation of effective intellectual property rights that contribute to industry.

**Efforts to Support Automation and Labor Savings**

Here are some of the items contributing to automation and robotization that were displayed at the 2019 International Robot Exhibition.

Adaptive Hand
A versatile end effector that adapts to various production line applications.

Picking Robot Hand System
Model PRS
A versatile robot hand that adapts to various logistics picking applications.

Autonomous Movement Control System "SIGNAS"
A robot that navigates easily through various kinds of terrain for construction sites.

**Research and Development**
THK's Products

THK was the first company in the world to develop the Linear Motion (LM) Guide, which is based on an original concept and innovative technology. THK also develops, produces, and supplies to the world a range of other vital machine components, including ball screws and electric actuators, as well as automotive and transportation components, such as L&S (Linkage and Suspension) products. Because of the smoother, more accurate movement they provide to every type of mechanism, all of THK’s technologies have gathered attention and are driving innovation around the world.

The LM Guide is a machine component that converts sliding motion into rolling motion, enabling machine parts to move smoothly, easily, and precisely in a straight line. As a result, the LM Guide has enabled the precision, rigidity, speed, and energy-saving properties of a wide range of industrial machinery. With the introduction of products such as the Caged Ball LM Guide in 1996 and the Caged Roller LM Guide in 2001, the Company has continued to improve every aspect of the LM Guide and further expand its applications. As a result, LM Guide products with caged ball and caged roller technology are now vital components of machine tools, semiconductor manufacturing equipment, and other industrial equipment.

Ball screws are machine components that function by causing a large number of balls to circulate between a screw shaft and a nut. This mechanism efficiently converts rotary motion into linear motion. With the Caged Ball Screw, THK has incorporated caged ball technology into its existing ball screw designs, thus helping to achieve longer life with reduced noise and provide an extended period of maintenance-free operation.

Ball cages are resin parts that hold and guide the balls or rollers as they move. The use of cages reduces noise and friction by preventing direct contact between the balls or rollers. This allows for a longer service life, reduced noise, and an extended period of maintenance-free operation.

Electric actuators are hybrid products combining a guide component, such as an LM Guide, with a ball screw, linear motor, or other drive component. In industries such as electronics, there is an increasing need to shorten development and manufacturing lead times. Modularization allows these electric actuators to meet such requirements by simplifying the design and reducing assembly time. THK offers a varied lineup of electric actuators ranging from basic, cost-effective units to high-end components designed to operate with high precision or perform to clean room specifications. Such advanced electric actuators have become indispensable parts in equipment used in the manufacture or inspection of semiconductors and liquid crystal displays.

Developed in 1971, the same year that THK was established, ball splines were the precursor to the LM Guide. This revolutionary linear motion guide element allows balls to roll along a rounded groove machined into the ball spline’s shaft, boosting the load that the device can tolerate and permitting the transmission of torque. Compared with the products that came before, these ball splines boosted the permissible load by a factor of 13 and service life by a factor of 2,200. THK offers an extensive lineup featuring ball splines with integrated ball screws and other products that are used in a variety of equipment, including industrial robots, medical equipment, and chip mounters.

Cross roller rings are roller bearings that feature internal cylindrical rollers arranged orthogonally so as to facilitate load bearing in every direction. The incorporation of the spacer cages between rollers prevents roller skew and friction between the rollers. Possessing high rigidity while maintaining a compact structure, cross roller rings are used in the rotating parts of many different types of industrial machinery, including the joint areas and rotating parts of industrial robots, as well as machining center work tables. Other applications include rotating parts of medical equipment and semiconductor manufacturing equipment.
Renewable Energy
Due to their unique mechanisms, THK’s shaft units for wind turbines possess high strength and durability in addition to achieving dramatically lower torque and improved power generation efficiency. In 2017, THK began supplying these products to Challenergy Inc., which developed the world’s first wind turbine capable of generating energy even during typhoons.

The automotive and transportation business, centered on THK RHYTHM and THK RHYTHM AUTOMOTIVE (TRA), focuses on products related to undercarriage L&S (Linkage and Suspension) components. Made from aluminum, THK’s link balls are highly resistant to corrosion and wear. They are also considerably lighter than traditional steel parts.

In addition to the cold-forged ball joints that have been its mainstay, THK RHYTHM has expanded the range of products it offers to include aluminum links that integrate ball joints with aluminum suspension links. Through its critical safety parts that meet the automotive industry’s requirements for the highest levels of quality and performance, the Company contributes to the production of safer, more comfortable automobiles.

Seismic isolation and damping systems make use of THK’s core linear motion system technology. The THK Group supplies a broad range of products from seismic isolation and damping systems for high-rise buildings, low-rise residences, and other structures such as temples and shrines, to seismic isolation systems for servers and a variety of manufacturing equipment. In this manner, the Group is helping to minimize the damage caused by earthquakes.

Products Using Core Linear Motion System Technology

Seismic Isolation System for Buildings
Seismic Isolation Platforms

Automotive and Transportation Equipment-Related Products

New Products

Miniature LM Guide Model RSX
This product is easily customizable to specialized block lengths often requested by customers. It uses a corner-type view to achieve excellent ball retention.

Interchangeable LM Guide Model HDR, Model HRX, and Model SRG
Interchangeable rails and blocks can be managed separately, and rails can be disconnected and used as needed. These products simplify the process of replacing blocks.

Hollow Ball Screw N Series
This product is intended for small, high-precision machining devices. It enables forced cooling and has a maximum shaft length of 3,000 mm.

Seismic Isolation and Damping Systems

Lightweight Actuator Models ALK20 and 45
These products were added to the existing lineup of models ALK26 and 30. The main components of these products are made of extruded aluminum, making them significantly more lightweight at a reasonable price.

Pick and Place Robot Model PPR
This is a robot specialized for picking and placing electrical components. Its high-precision force-sensing technology reduces damage to electrical components. In addition, the visualization of force, position, and pressure data assists with troubleshooting and quality improvements.

Seismic Isolation and Damping Systems

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Renewable Energy
Due to their unique mechanisms, THK’s shaft units for wind turbines possess high strength and durability in addition to achieving dramatically lower torque and improved power generation efficiency. In 2017, THK began supplying these products to Challenergy Inc., which developed the world’s first wind turbine capable of generating energy even during typhoons.

The automotive and transportation business, centered on THK RHYTHM and THK RHYTHM AUTOMOTIVE (TRA), focuses on products related to undercarriage L&S (Linkage and Suspension) components. Made from aluminum, THK’s link balls are highly resistant to corrosion and wear. They are also considerably lighter than traditional steel parts.

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Review by Geographic Region

As THK advances its growth strategy of full-scale globalization, the Company has established an integrated production and sales structure that encompasses four centers of demand: Japan, the Americas, Europe, and Asia. During the 2019 fiscal year, THK worked to expand sales around the world through OmniTHK and officially opened orders in Japan for OMNI-edge, an IoT service for the manufacturing industry. In terms of production, THK has reduced lead times by improving productivity through efforts related to automation, robotization, and the IoT, as well as by making investments that will increase production volumes in both its industrial machinery and automotive and transportation businesses. In addition to continuing to strengthen its sales structure through THK in each region, during the 2020 fiscal year, THK will promote the expansion of OMNI-edge and accelerate its efforts to establish a secure, flexible production structure. Through promoting the systematization of business processes, including those of support departments, the THK Group will provide products and services promptly to customers and improve its overall productivity.

Operating Conditions and Performance Review
Sales in the Americas decreased 2.3% year-on-year, to ¥58.3 billion.

The THK Group decided to adopt IFRS beginning with the 2019 fiscal year. For the purposes of comparison, the results for the 2018 fiscal year are also noted in parentheses. For the purposes of comparison, the results for the 2018 fiscal year are also noted in parentheses.

In the midst of continued economic growth centered on domestic demand, the THK Group worked diligently to expand transactions with existing customers through unified production and sales efforts while developing new business areas, including the automotive, medical equipment, and aircraft fields as well as energy-related fields. However, revenue decreased primarily due to demand adjustments in the electronics field.

Year Ended December 2019
Sales
The THK Group increased its market share by expanding transactions with existing customers while taking business from competitors. In addition, the Group promoted sales activities targeting a wide range of customers by making use of its mobile showroom at exhibitions. Furthermore, the Company actively drove sales activities in medical equipment and other new business areas such as aircraft and robotics to generate new demand.

Production
THK has made improvements in productivity by reducing manufacturing lead times, automating, and making other improvements to machine utilization in order to capitalize on its strengths as the only company in the linear motion industry with a production facility in North America and to conduct its production activities in a way that meets customer needs. In the automotive and transportation business, the expansion of THK RHYTHM NORTH AMERICA was completed.

Operating Conditions and Performance Review
Sales in Europe decreased 6.6% year-on-year, to ¥53.7 billion.

As exports and production weakened due to the influence of the trade friction between the United States and China, the THK Group’s revenue decreased despite working to expand transactions with existing customers through unified production and sales efforts while developing new business areas, including the automotive, medical equipment, aircraft, and robotics fields.

Year Ended December 2019
Sales
In addition to expanding transactions with existing customers, THK actively developed various initiatives aimed at expanding sales to a wide range of customers. Furthermore, the Company accelerated its efforts to take business from competitors in new fields related to medicine, food, and robotics.

Production
THK improved productivity by analyzing its machining and assembly work processes and installing new equipment to promote further automation and robotization. In addition, the Group promoted additional process improvements such as automating process management through IoT advancements.

Operating Conditions and Performance Review
Sales in Asia and Other decreased 18.9% year-on-year, to ¥40.5 billion.

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Operating Conditions and Performance Review
Sales in Japan decreased 24.7% year-on-year, to ¥109.4 billion.

The THK Group steadily achieved sales from the backlog of orders it had accumulated during the prior period of strong overall demand. However, revenue decreased as a result of the weakening of exports and production due to a slowdown in foreign demand in China and other regions influenced by the trade friction between the United States and China.

Year Ended December 2019
Sales
The demand for THK products is expected to demonstrate medium-to-long-term growth with the advancement of digital technology. In December 2019, the Company began officially accepting orders for its OMNI-edge IoT service for the manufacturing industry. Orders were opened for LM Guide applications, and THK began recruiting participants for a trial for the ball screw version.

Production
In March 2019, the expansion of the Yamaga- ta plant was finished, and THK RHYTHM KYUSHU—one of the main factories for the automotive and transportation division—completed its expansion to meet the demands of new, large-scale business. As part of its efforts to improve productivity, the Company promoted automation and robotization in addition to developing measures that utilize digital technology.

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Corporate Governance

Basic Stance on Corporate Governance

Intending to maximize its corporate value, THK strives to maintain solid corporate governance in order to make medium- to long-term improvements to its corporate value by sustaining growth through appropriate cooperation with all its shareholders and other stakeholders.

THK’s Corporate Governance Framework

In June 2014, THK introduced an executive officer system. After the Company’s 46th General Meeting of Shareholders on June 18, 2016, and in conjunction with its establishment of an Audit and Supervisory Committee, THK instituted a non-mandatory Nomination Advisory Committee and a Remuneration Advisory Committee to act as advisors to the Board of Directors. In doing so, THK has endeavored to bring enhanced transparency and objectivity to management, strengthen the auditing functions of the Board of Directors, and bring greater speed and efficiency to management-related decision-making and the management of corporate affairs.

Board of Directors

THK’s Board of Directors comprises a total of eight directors—including one outside director—who are net members of the Audit and Supervisory Committee, in addition to three outside directors who are Audit and Supervisory Committee members. The Board of Directors makes decisions on important matters of general management and carries out the oversight of directors and executive officers in the execution of their duties. There are also four outside directors whose independence meets the evaluation criteria stipulated by the Tokyo Stock Exchange and THK. With over a third of the directors being outside directors who possess specialized professional knowledge and qualifications related to corporate accounting or general management, this structure has further enhanced management neutrality, legality, and validity while improving the board’s management oversight function.

Audit and Supervisory Committee

Comprising three outside directors who are Audit and Supervisory Committee members, the Audit and Supervisory Committee utilizes the internal control system to audit and supervise directors and executive officers with regard to the current status of the execution of their duties. The effectiveness of the audits is also enhanced by collaboration between the Audit and Supervisory Committee and independent auditors. In addition, the Audit and Supervisory Committee Secretariat was established to support the Audit and Supervisory Committee.

Operating Conditions and Performance Review

Sales in Asia and other regions decreased 34.4% year-on-year, to ¥12 billion.

As the range of demand for THK products is steadily growing in India, the ASEAN region, and other parts of the world, the Group bolstered its sales network and undertook aggressive sales activities to expand transactions with existing customers and acquire new customers. However, reduced demand in China impacted certain regions, resulting in decreased revenue.

Year Ended December 2019

Sales

- In Taiwan, THK strengthened its top line by expanding sales with existing customers, bolstering its indirect sales network, and introducing quick-delivery products to the market. In the ASEAN region, the Group strengthened efforts to develop Omri THK and thereby expand sales to a wide range of customers. Furthermore, various initiatives were developed to expand sales of electric actuators.
- Production

Each plant further improved the productivity of its production processes through automation and robotization. In India, construction began on a new factory in response to demand that is expected to demonstrate medium- to long-term growth.

Net Sales

<table>
<thead>
<tr>
<th>Net Sales (Million of yen)</th>
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</tr>
</thead>
<tbody>
<tr>
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General Meeting of Shareholders

THK's Corporate Governance Framework

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Committee and its members. This Audit and Supervisory Committee Secretariat follows the instructions of the Audit and Supervisory Committee, coordinates with each department, and conveys instructions to the Internal Audit Division and the Risk Management Division, which is responsible for the maintenance and operation of internal controls.

Nomination Advisory Committee and Remuneration Advisory Committee

The non-executive Nomination Advisory Committee and Remuneration Advisory Committee are each composed of four directors, two of which are outside directors. This composition is in accordance with the rules for both committees, which stipulate that outside directors must make up half or more of the members. As advisory bodies to the Board of Directors, both committees review and deliberate on director candidates and remuneration proposals, and they propose the content and outcomes of those deliberations to the Board of Directors. The Board of Directors conducts its own deliberations on the subject matter before deciding on a resolution.

Executive Officer System

By introducing the executive officer system, THK has endeavored to achieve decision-making and operational execution, in addition to improving the management oversight function of the Board of Directors and clarifying roles and responsibilities relating to the management of corporate affairs. As a means to share information throughout the Group and improve corporate governance through collaboration between the directors, executive officers, and other members of the management team, the Company implemented its Board of Executive Officers, which is attended by directors and executive officers, and established the Global Management Strategy Meeting, which is attended by members of the Board of Executive Officers in addition to those in charge of each division, department, and affiliate company. To clarify the roles and responsibilities of executive officers relating to the management of corporate affairs, an executive officer’s term in office is deemed to be one year.

General Meeting of Shareholders

THK has consistently regarded active communication with all stakeholders as a crucial part of management. Accordingly, the Company is actively committed to maintaining fair and proper disclosure of corporate information. In an aim to have open meetings, THK has held its General Meeting of Shareholders on a Saturday every year since 1998, thereby avoiding the period when many shareholder meetings are scheduled. At the General Meeting of Shareholders, the Company provides seating for business partners and other stakeholders to observe the proceedings. A product exhibition is held after the end of the meeting to help more people gain a greater understanding of the Company.

Compliance Structure

The Compliance Committee, chaired by the CEO, approves the annual activity plan and reports on the execution of those activities, as well as on the handling of legal violations by employees and other matters to report internally. This committee is also attended by outside directors and a legal advisor, and it functions in a proper and legal manner. In addition, THK has established compliance subcommittees reporting to the Compliance Committee, with the working group members being selected from each site and department. The working group members play an important role in maintaining the compliance system by means such as holding voluntary seminars on compliance and fulfilling an advisory function.

Risk Management Committee

THK has established a risk management structure that anticipates future circumstances, enabling management to take appropriate risks by identifying, analyzing, and responding to conceivable risks from the perspective of management and the company as a whole. Under its policy of “We facilitate assertive governance with elements of bold risk-taking,” the Risk Management Committee convenes annually and is headed by the CEO. The committee, which is attended by outside directors and legal counsel, approves the annual activity plan and works to establish, promote, and maintain the risk management structure by controlling risks throughout the entire Group.

Compliance Subcommittees

<table>
<thead>
<tr>
<th>Observers</th>
<th>Committee Secretariat</th>
<th>Risk Management Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside directors and legal advisor</td>
<td>Members selected from each office</td>
<td></td>
</tr>
</tbody>
</table>
The Selection of Outside Directors

Masaki Kainosho
Outside Director (as of June 2020)

Reason for selection
In addition to being a university professor deeply versed in business administration, Masaki Kainosho possesses a wealth of experience, a history of success, and sound judgment from managing an executive consulting company.

Independent status
Masaki Kainosho was employed at THK’s current lender, Sumitomo Mitsui Banking Corporation (previously Mitsui Bank), from April 1976 to April 1996. However, he was consistently working in a systems-related division, and the THK Group did not do business with Mitsui Bank at the time. Therefore, he is considered to be independent.

Masakatsu Hioki
Outside Director, Audit and Supervisory Committee Member (as of June 2020)

Reason for selection
In addition to possessing sound judgment, Masakatsu Hioki has extensive experience and a proven history of success as an executive responsible primarily for human resources and general affairs in a global manufacturing company.

Independent status
Masakatsu Hioki began his career with Komatsu Ltd. Although THK and Komatsu do have a business relationship that includes the sale of THK products, the sum value of those transactions equals less than 1% of THK’s and Komatsu’s consolidated net sales for the corresponding fiscal year. Therefore, he is considered to be independent.

Tomitoshi Omura
Outside Director, Audit and Supervisory Committee Member (as of June 2020)

Reason for selection
In addition to the knowledge of corporate accounting he has gained over many years as a certified public accountant, Tomitoshi Omura is an expert who possesses a wealth of experience, a history of success, and sound judgment.

Independent status
There are no particular conflicts of interest concerning Tomitoshi Omura’s relationship with THK. Additionally, although he does not have direct experience in corporate management, the Company has determined that he appropriately executes his duties as an outside director because of the aforementioned reasons.

Yoshiki Ueda
Outside Director, Audit and Supervisory Committee Member (as of June 2020)

Reason for selection
In addition to possessing sound judgment, Yoshiki Ueda has extensive experience and a proven history of success as an executive deeply versed in corporate management, having spent many years at a global company active in machinery-related fields.

Independent status
Yoshiki Ueda is an outside director at SINTOKOGIO, LTD., a representative director and vice-chairman of Makine Milling Machine Co., Ltd., and a visiting professor at National University Corporation Shizuoka University. Although THK and SINTOKOGIO do have a business relationship that includes the purchase of SINTOKOGIO products, the sum value of those transactions equals less than 1% of THK’s and SINTOKOGIO’s consolidated net sales for the corresponding fiscal year. Additionally, although THK and Makino Milling Machine do have a business relationship that includes the sale of THK products, the sum value of those transactions equals less than 1% of THK’s and Makino Milling Machine’s consolidated net sales for the corresponding fiscal year. There are no particular conflicts of interest regarding the relationship between the Company and Shizuoka University.

Harmony with the Environment

THK’s Corporate Social Responsibility

THK is committed to promoting its Corporate Social Responsibility to maintain a healthy global environment.

THK Group’s Basic Environmental Policy

1. We consider conservation of the environment to be a major management challenge, and we are striving to accurately understand how our business activities, products, and services impact the environment. All divisions set appropriate environmental goals to address this challenge.

2. In addition to complying with environmental laws, we have set self-imposed standards that are reviewed regularly to improve the efficiency and effectiveness of our environmental management.

3. We will continually promote the development of products that help reduce environmental impact.

4. We will cut down energy use in our business activities and continually promote the reduction of energy consumption and greenhouse gas emissions.

5. With a particular focus on the reduction and recycling of waste, we will not only continue to promote the saving and recycling of resources, but also strive to prevent pollution.

6. We recognize the impact our business activities have on biodiversity, and we will actively work toward the conservation of all life on Earth.

7. To achieve greater collaboration with regard to our environmental activities, we provide guidance and support to our affiliated companies and business partners, and also strive to work in cooperation and harmony with the community.

8. This basic environmental policy is disseminated to all divisions in the group through education, training, and awareness campaigns, and we facilitate the timely release of information on the environment both within and outside the Group.

Energy-Saving Initiatives

Solar Panels at the Yamaguchi Plant

The Yamaguchi plant is carrying out plans to reduce CO2 emissions by installing solar panels. Fifty-seven fluorescent bulbs are used to light the walkway between Factory 1 and Factory 7 for the safety of night workers. Technicians certified for Type 1 and Type 2 electrical work installed solar panels there in order to generate and store electricity during the day and reduce CO2 emissions. Operation began February 2020, and the panels are expected to produce 26,364 kWh of electricity per year and reduce yearly energy consumption by the equivalent of 7.1 kL of crude oil. The panels can also be used as an emergency power source, so the plant is planning to establish an effective system for energy self-sufficiency as a BCP measure.

THK Group’s Support for Renewable Energy

1. We will actively work toward the conservation of all life on Earth.

LED Upgrade Results

The Company has established a plan to upgrade to LED lighting where needed in its five Japanese THK production facilities by the end of December 2020. The following table shows the status and results of the LED lighting upgrades in all Group companies in Japan during the 2019 fiscal year.

<table>
<thead>
<tr>
<th>Plant Location</th>
<th>Factory</th>
<th>Time Frame</th>
<th>Bulbs replaced</th>
<th>Savings (crude oil equivalent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yamaguchi Plant</td>
<td>Factory 1</td>
<td>10/2019</td>
<td>1,200</td>
<td>30,000</td>
</tr>
<tr>
<td>Mie Plant</td>
<td>Factory 1</td>
<td>11/2019</td>
<td>993</td>
<td>5,000</td>
</tr>
<tr>
<td>Chubu Plant</td>
<td>Cold-forging Center (Old Plant)</td>
<td>8/2019</td>
<td>3</td>
<td>2,527</td>
</tr>
<tr>
<td>Mie Plant</td>
<td>Factory (Office facility)</td>
<td>4/2019</td>
<td>9</td>
<td>176,377</td>
</tr>
<tr>
<td>Hamamatsu Plant</td>
<td>Factory (Office facility)</td>
<td>11/2019</td>
<td>6</td>
<td>41,177</td>
</tr>
<tr>
<td>Takarazuka Plant</td>
<td>Factory (Office facility)</td>
<td>12/2019</td>
<td>3</td>
<td>2,527</td>
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<td>Takarazuka Plant</td>
<td>Factory (Office facility)</td>
<td>12/2019</td>
<td>6</td>
<td>7,363</td>
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<td>Cold-forging Center (New Plant)</td>
<td>12/2019</td>
<td>8</td>
<td>250,164</td>
</tr>
<tr>
<td>Takarazuka Plant</td>
<td>Factory (Office facility)</td>
<td>12/2019</td>
<td>12</td>
<td>41,177</td>
</tr>
<tr>
<td>Takarazuka Plant</td>
<td>Office building (Office facility)</td>
<td>11/2019</td>
<td>148</td>
<td>81,355</td>
</tr>
</tbody>
</table>

THK Group contributes to both society and the economy through our pioneering role as manufacturers of the Linear Motion Guide and other products. We also believe that it is a company’s social responsibility to leave the global environment in a healthy state for the next generation, which is why we are promoting the following initiatives to continually decrease our environmental impact and to sustain and improve the natural environment.
As a good corporate citizen, THK actively contributes to society in the following ways.
1. Establishing a basic philosophy of contributing to society through our business activities
2. Identifying areas to prioritize our efforts and using our corporate resources to promote specific contributions based on our corporate philosophy
3. Coordinating and cooperating with various stakeholders, including NPOs, NGOs, local communities, government, and international institutions
4. Supporting employees’ own community contributions and involvement
5. Participating in the social efforts of the industry and business community

THK’s daily operations are performed in accordance with its policy to manufacture products in the optimal location and to conduct its business and improve its technology in a way that meets the needs of its customers.

Throughout its supply chain, from design to sales, THK strives to adhere to social norms and be environmentally conscious in order to create a sustainable society. In accordance with the revised RoHS directive effective in 2021, companies will no longer be able to ship steel, aluminum alloys, or copper alloys that contain lead to Europe. After the RoHS directive effective in 2021, companies will no longer be able to ship steel, aluminum alloys, or copper alloys that contain lead to Europe.

THK strives to adhere to social norms and be environmentally conscious in order to create a sustainable society. In accordance with the revised RoHS directive effective in 2021, companies will no longer be able to ship steel, aluminum alloys, or copper alloys that contain lead to Europe. After the RoHS directive effective in 2021, companies will no longer be able to ship steel, aluminum alloys, or copper alloys that contain lead to Europe.

THK Basic Policy on Procurement
In order to continue to provide THK products that satisfy our customers, we establish good, healthy, and mutually beneficial relationships with our suppliers.

Activities
1. Procurement practices emphasizing communication with suppliers. Evaluating and choosing suppliers with thorough consideration for QCDITES.
2. Fair and equitable dealings in compliance with all pertinent laws and social norms.
3. Efforts to minimize costs. Encouraging the active pursuit of cost-saving projects and value analysis initiatives.
5. Implementation of a BCP (business continuity plan).
6. Environmental consciousness through green procurement.

THK’s Supply Chain

Design
- Long-term maintenance-free operation
- Low noise
- Low dust generation
- Develop greases that can be used in the food industry
- Environmentally hazardous materials
- Comply with the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors
- Comply with the Energy Conservation Act
- Reduce CO2 emissions
- Reduce impact on the environment
- Maintain safe working environment

Production
- Comply with the Energy Conservation Act
- Reduce CO2 emissions
- Maintain safe working environment
- Reduce waste via reusable containers

Distribution
- Shipment of products, packaging materials
- Underwrite shipping costs
- Safe driving practices
- Efficient, accurate delivery

Sales
- Collect and reuse packaging materials
- Underwrite shipping costs
- Safe driving practices
- Efficient, accurate delivery

Working with Vendors

THK’s Supply Chain

Purchasing/Procurement
- Check for presence of environmentally hazardous materials
- Comply with the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors
- Comply with the Energy Conservation Act
- Reduce CO2 emissions
- Reduce impact on the environment
- Maintain safe working environment

THK’s basic philosophy on production is to minimize costs. Encouraging the active pursuit of cost-saving projects and value analysis initiatives. Pursuit of global procurement.

86 Project
This project began with six employees creating six cross-departmental teams within the Engineering Division as a research activity to lead to new market expansion for THK products. The results from the research teams are presented once a year, and some have led to ideas that are currently in development to become future products.

Specific Activities
- Developing talent that can succeed globally (supporting growth through international experiences)
- In 2019, THK launched a program for employees in Japan who joined the company hoping to gain experience abroad, in which employees spend several months working in another country. Around five employees have participated in this program so far. The Cross-Border Trainee Program, in which participants spend a year at an overseas facility, was established in 2016 based on feedback from employees, and there have been around nine participants so far.
- 66 Project
- The project began with six employees creating six cross-departmental teams within the Engineering Division as a research activity to lead to new market expansion for THK products. The results from the research teams are presented once a year, and some have led to ideas that are currently in development to become future products.
- Basic technical training
- To impart technical knowledge that will aid the development of innovative new products and to improve the quality of developed products, lectures are held for new employees entering with technical degrees. Furthermore, THK has developed an internal engineering test and certification program for employees to broaden their knowledge and explore their areas of specialization more deeply as engineers.
- Developing talent that utilizes data (supporting digitalization)
- To make tasks that use data more sophisticated and increase their added value, the Company began a three-level training program in 2019 that covers basic, intermediate, and advanced skills.

Basic
- Using data for one’s area of responsibility
- Aggregating and visualizing data, analyzing a root cause, and developing a solution based on an understanding of the entire picture shown by the data and basic methods of visualization and analysis (statistics, etc.)

Intermediate
- Promoting the use of data in each department
- Using data analysis to execute the entire process of identifying a departmental challenge, conducting the analysis, and solving the challenge

Advanced
- Promoting company-wide data use as an expert, advising others on data utilization, and conducting training sessions to develop talent
- Using data analysis to solve inter-departmental or even more complex challenges

Supporting new employees
New employees in Japan continue their development through on-the-job training at their assigned departments after completing their new hire orientation and a period of practical training at various production facilities. Beginning in 2017, to make sure new hires are staying motivated and confirm that they are not overwhelmed by or anxious about their daily work, the Company has been taking care of those employees by conducting monthly check-ins.
### Subsidiaries & Affiliate

**As of December 31, 2019**

<table>
<thead>
<tr>
<th>Subsidiary</th>
<th>Main Operations</th>
<th>Head Office</th>
<th>Percentage Owned by the Company, Directly or Indirectly (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>THK INTECHS CO., LTD.</td>
<td>Manufacture and sale of vital machinery components and machinery</td>
<td>Tokyo, Japan</td>
<td>100.00</td>
</tr>
<tr>
<td>THK-RAI SYSTEM CO., LTD.</td>
<td>Sale of machinery parts and various types of equipment</td>
<td>Tokyo, Japan</td>
<td>98.00</td>
</tr>
<tr>
<td>THK-RAI NGASA CO., LTD.</td>
<td>Manufacture of ball spindles</td>
<td>Nagoya, Japan</td>
<td>100.00</td>
</tr>
<tr>
<td>THK RHYTHM CO., LTD.</td>
<td>Transportation equipment-related business</td>
<td>Shonan, Japan</td>
<td>70.00</td>
</tr>
<tr>
<td>NIPPON SLIDE CO., LTD.</td>
<td>Manufacture and sale of slide rails</td>
<td>Tokyo, Japan</td>
<td>100.00</td>
</tr>
<tr>
<td>THK Holdings, LTD.</td>
<td>Holding and management company</td>
<td>Tokyo, Japan</td>
<td>70.00</td>
</tr>
<tr>
<td>THK Holdings of America, LLC</td>
<td>Holding and management company</td>
<td>Brea, U.S.A.</td>
<td>100.00</td>
</tr>
<tr>
<td>THK-America, Inc.</td>
<td>Sale of the LM Guide, ball screws</td>
<td>Brea, U.S.A.</td>
<td>100.00</td>
</tr>
<tr>
<td>THK Manufacturing of America, Inc.</td>
<td>Manufacture of the LM Guide</td>
<td>U.S.A.</td>
<td>100.00</td>
</tr>
<tr>
<td>THK RHYTHM NORTH AMERICA CO., LTD.</td>
<td>Transportation equipment-related business</td>
<td>Tennessee, U.S.A.</td>
<td>70.00</td>
</tr>
<tr>
<td>THK RHYTHM MEXICANA, S.A. DE C.V.</td>
<td>Transportation equipment-related business</td>
<td>Guanajuato, Mexico</td>
<td>99.99</td>
</tr>
<tr>
<td>THK RHYTHM NORTH AMERICA CO., LTD.</td>
<td>Transportation equipment-related business</td>
<td>Michigan, U.S.A.</td>
<td>100.00</td>
</tr>
<tr>
<td>THK RHYTHM MICHIGAN CORPORATION</td>
<td>Transportation equipment-related business</td>
<td>Michigan, U.S.A.</td>
<td>100.00</td>
</tr>
<tr>
<td>THK RHYTHM (THAILAND) CO., LTD.</td>
<td>Transportation equipment-related business</td>
<td>Rayong, Thailand</td>
<td>70.00</td>
</tr>
<tr>
<td>THK TAIWAN CO., LTD.</td>
<td>Sale of the LM Guide, ball screws</td>
<td>Taipei, Taiwan</td>
<td>100.00</td>
</tr>
</tbody>
</table>

### Corporate Data

**As of December 31, 2019**

<table>
<thead>
<tr>
<th>Company Profile</th>
<th>Headquarters: 2-13-10 Shibuya, Minato-ku, Tokyo 133-8505, Japan. Telephone: +81-3-5735-3311</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Year</td>
<td>2019</td>
</tr>
<tr>
<td>Fiscal Year</td>
<td>2019</td>
</tr>
<tr>
<td>Financial Year</td>
<td>2019</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stock Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Stock:</td>
</tr>
<tr>
<td>Stock Exchange</td>
</tr>
<tr>
<td>Stock Exchange List</td>
</tr>
<tr>
<td>Stock Transfer Agent</td>
</tr>
<tr>
<td>Number of Shareholders</td>
</tr>
</tbody>
</table>

### Major Shareholders

#### Shareholder Composition

<table>
<thead>
<tr>
<th>Shareholder Type</th>
<th>Number of Shareholders</th>
<th>Number of Shares Issued (Thousands of shares)</th>
<th>Shareholding Ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Institutions</td>
<td>70</td>
<td>41,859</td>
<td>31.27</td>
</tr>
<tr>
<td>Securities Companies</td>
<td>42</td>
<td>4,346</td>
<td>3.25</td>
</tr>
<tr>
<td>Other Corporations</td>
<td>250</td>
<td>4,828</td>
<td>3.61</td>
</tr>
<tr>
<td>Overseas Institutions</td>
<td>825</td>
<td>58,471</td>
<td>45.86</td>
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<tr>
<td>Individuals and Others</td>
<td>179,440</td>
<td>16,794</td>
<td>12.55</td>
</tr>
<tr>
<td>Treasury Stock</td>
<td>1</td>
<td>7,286</td>
<td>5.44</td>
</tr>
</tbody>
</table>

### Stock Price and Trading Volume

**Stock Price (Yen)**

<table>
<thead>
<tr>
<th>Date</th>
<th>High Price</th>
<th>Low Price</th>
<th>Closing Price</th>
<th>Trading Volume (Thousands of shares)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/20/2020</td>
<td>3,000</td>
<td>2,500</td>
<td>2,750</td>
<td>10,000</td>
</tr>
<tr>
<td>3/20/2020</td>
<td>2,800</td>
<td>2,300</td>
<td>2,550</td>
<td>12,000</td>
</tr>
<tr>
<td>4/20/2020</td>
<td>2,600</td>
<td>2,100</td>
<td>2,350</td>
<td>14,000</td>
</tr>
<tr>
<td>5/20/2020</td>
<td>2,400</td>
<td>1,900</td>
<td>2,150</td>
<td>16,000</td>
</tr>
<tr>
<td>6/20/2020</td>
<td>2,200</td>
<td>1,700</td>
<td>1,950</td>
<td>18,000</td>
</tr>
<tr>
<td>7/20/2020</td>
<td>2,000</td>
<td>1,500</td>
<td>1,750</td>
<td>20,000</td>
</tr>
<tr>
<td>8/20/2020</td>
<td>1,800</td>
<td>1,300</td>
<td>1,550</td>
<td>22,000</td>
</tr>
<tr>
<td>9/20/2020</td>
<td>1,600</td>
<td>1,100</td>
<td>1,350</td>
<td>24,000</td>
</tr>
<tr>
<td>10/20/2020</td>
<td>1,400</td>
<td>900</td>
<td>1,150</td>
<td>26,000</td>
</tr>
<tr>
<td>11/20/2020</td>
<td>1,200</td>
<td>700</td>
<td>950</td>
<td>28,000</td>
</tr>
<tr>
<td>12/20/2020</td>
<td>1,000</td>
<td>500</td>
<td>750</td>
<td>30,000</td>
</tr>
</tbody>
</table>

**Trading Volume (Thousands of shares)**

<table>
<thead>
<tr>
<th>Date</th>
<th>High Price</th>
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<th>Closing Price</th>
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<tr>
<td>2/20/2020</td>
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THK CO., LTD.

URL: www.thk.com