

Review of Operations

Automotive Business Unit

The automotive industry is currently amid a transformation that occurs once in a century.

- (1) Cars will change with the spread of autonomous driving.
- (2) Customers will change as emerging manufacturers enter the market.
- (3) Power will change due to stricter environmental regulations (advances in electrification).

In fiscal 2021, JTEKT established the Automotive Business Unit, which will make use of its diverse product lineup for automobiles, including steering, drivelines, and hubs, to accurately and promptly respond to changes in the environment and thus lead to the proposal of optimal systems for automobiles.

Business Overview

JTEKT provides steering systems for turning, one of the basic functions of a car; driveline products^{*1} that support driving; torque control devices (TCDs)^{*2}; and hub units as well as regulator valves and valves for FCEVs^{*3} that contribute to the global environment.

We command the No. 1 share of the global market for power steering products, with a wide variety of offerings for both passenger cars and large commercial vehicles.

As a leading supplier of “turning” and “driving” systems for automobiles, we will contribute to our customers by leveraging our strength to propose systems that combine the two.

^{*1} Drive shafts, propeller shafts, and other products that deliver driving force.

^{*2} A mechanism for distributing the rotational power from the engine to front, rear, left and right driving force.

^{*3} Fuel cell electric vehicle

Fiscal 2020 Results and Fiscal 2021 Plan

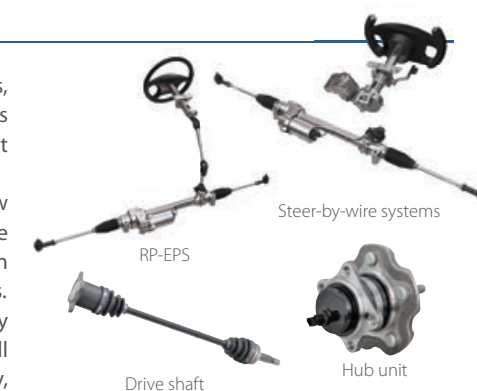
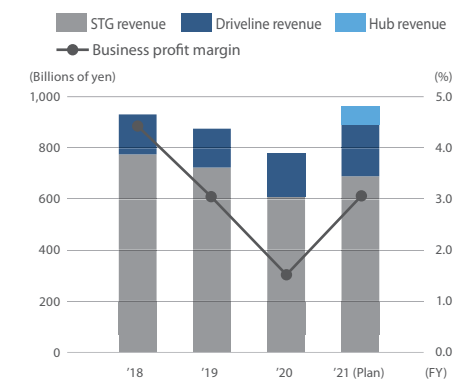
In fiscal 2020, due to the impact of the COVID-19 pandemic and other factors, although we remained profitable, we recorded a decrease in both sales and profits compared to the previous fiscal year. In the plan for fiscal 2021, we project profit margins will start to recover but remain low.

In recent years, market competition has intensified due to the emergence of new suppliers, particularly in developing countries. Under these circumstances, we are thoroughly focused on competitiveness and are developing next-generation products through a zero-based review of our design and manufacturing processes.

With an eye toward the future, JTEKT will meet the needs of its customers by making optimal proposals for total systems rather than single components. We will also continue to develop next-generation products that meet the needs of society, as embodied in the automotive industry trends toward CASE and MaaS^{*4}.

^{*4} Mobility as a Service. To use a means of transportation, such as a car, as a service by paying for it only when needed.

Revenue/Business profit margin



TOPICS

Field Operational Tests of Autonomous Driving in the Haneda Airport Area
Participation in the second phase of the Cabinet Office's Cross-ministerial Strategic Innovation Program (SIP)

JTEKT is participating in field operational tests at the Tokyo Waterfront City area for the second phase of the SIP “Autonomous Driving (System and Service Expansion).” Field operational tests of autonomous driving were conducted in the Haneda Airport area from June 8 to July 16, 2020.

Based on the results of these tests, we will further improve our technology and contribute to resolving social issues such as securing mobility for the elderly and those with restricted access to transportation, improving driver shortages, and reducing costs by contributing to the realization of a next-generation public transportation system.



Exterior view of the test vehicle

message

Becoming a key module supplier that can contribute to the improvement of chassis functions by combining the knowledge of automobile-related divisions

Takumi Matsumoto

Research & Development Division and Automotive Business Unit



Removing Conventional Silos and Frameworks to Create New Value

On April 1, 2021, the Steering Systems Business Unit, the Driveline Systems Business Unit, and the business units in charge of HUB operations in the Bearings Business Unit were integrated and the Automotive Business Unit was launched. With the advent of CASE and MaaS, the automotive industry has long been described as undergoing a once-in-a-century transformation. As companies that have never built a car before enter the market and existing customers transform into service providers, JTEKT needs to evolve from a mere device supplier to a key module supplier that can design the next generation of cars together with the customer. The new business unit is a huge organization that accounts for approximately 70% of the Group's sales, but we also want it to be an agile team that can create new value for our customers with a sense of speed by removing all silos such as businesses, functions, and departments.

The Chief Engineer System, which was newly introduced at the same time as the new business unit, is another means to break down the silos between organizations. Until now, sales, development & design, and manufacturing were separated from each other, and existed in a world where comments such as, “I'm in development, so I don't know about anything else,” prevailed. Going forward, the chief engineers will be responsible for committing thoroughly on a product-by-product basis and will grasp projects in their entirety to provide one-stop support to customers. Whenever good products are made or jobs done well there are persons who take on the challenge of going beyond conventional boundaries and taking ownership. To develop a proactive organizational culture and human resources, I would like chief engineers to lead the organization and be a positive role model for everyone.

Even If Cars Fly through the Air...

In addition to the Automotive Business Unit, I am also in charge of the Research and Development Headquarters. JTEKT possesses a high level of foundational technologies, such as bearings and gears, as well as technological capabilities backed up by experience gained through working with a wide range of customers. Naturally, we are also skilled in *monozukuri*. These are truly our strengths. To cite one example, as the electrification of automobiles progresses, I predict all the functions of driving, turning, and stopping will be integrated around the tires as represented by in-wheel motors^{*5}, which we call “corner modules.” If this were to materialize, many of the products we manufacture now will no longer be needed, yet we believe our technology and knowledge for making smooth and safe turns can definitely be utilized. Even if engines disappear and even if cars fly, the new generation of transportation equipment and means will still need powertrains, and bearings and gears will always be used in them. No matter what the shape of future vehicles takes, we have the potential to provide key modules for them. When I think about what might lie ahead, my dreams expand, and I am filled with excitement. Technology is evolving day by day, but certain know-how cannot be acquired overnight. I would like JTEKT to contribute to the safety and security of the world by combining these technologies and know-how.

^{*5} A motor that drives inside the wheel of a car (powertrain used in BEVs, FCEVs, etc.).



Image

Review of Operations

Industrial & Bearings Business Unit

Bearings that support the rotating parts of any mechanical device
JTEKT provides a wide range of bearings for automobiles and industrial machinery, contributing to the earth, the world, and our customers.

Business Overview

JTEKT's products are used in the rotating parts of products manufactured in various industries, from automobiles to industrial machinery, and support rotation in society in ways that people cannot see.

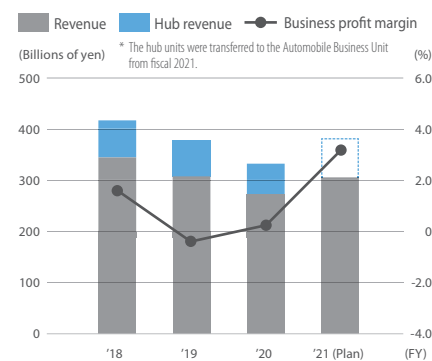
In the automotive field, we provide bearings that address the needs for quietness, low vibration, and high-speed rotation in response to the shift to electrification in automobiles and autonomous driving. In the industrial machinery field, we will strive to provide value and services by developing proposal-based businesses that respond to diverse usage environments such as semiconductors, robots, and wind power generation. Through these activities, JTEKT will contribute to the development of industry and the realization of a sustainable society.

Fiscal 2020 Results and Fiscal 2021 Plan

In fiscal 2020, sales were significantly impacted by the COVID-19 pandemic, yet JTEKT improved its earnings structure by boosting productivity and reducing capital investment and repair costs. We also worked to improve our competitiveness through the culmination of structural reforms in Japan and overseas and exhaustive cost reduction activities.

In fiscal 2021, we will make further improvements to build an overwhelming competitive edge through production technology innovation and cost reduction, and thus further strengthen our business structure. We will also shift our resources to growth markets and contribute to the growth and development of society by developing "No. 1 & Only One" products.

Revenue/Business profit margin



Main Products Developed

Automotive bearings

For electric vehicle motors
High-speed rotating grease-lubricated ball bearings

High speed: Achieving world-class performance

Over 1.85 million dmn^{*1}

*1 According to JTEKT research
dmn is a value that indicates the rotational performance of a bearing. Pitch diameter (mm) x rotational speed (min-1)



Bearings for industrial machinery

Bearings for special environments such as optical film and semiconductor manufacturing equipment

Corrosion resistance: Three times longer life than conventional products

Bearings for special environments such as optical film and semiconductor manufacturing equipment

TOPICS

Achieves No. 1 Low-Torque Performance, Meeting Needs for Fuel Efficiency



5th Generation LFT²-V Low-Friction-Torque Tapered Roller Bearing

In tapered roller bearings used in automotive transmissions and differential^{*3} units, JTEKT has developed the LFT-V, which achieves the lowest torque and lightest weight of the No. 1 LFT series.

We are proceeding with the proposal of LFT-V to automakers around the world to contribute to low fuel consumption and improve the efficiency of their vehicles.

*2 Low friction torque

*3 A mechanism that absorbs the difference in rotation between the left and right wheels for smooth turning.



message

Valuing the Basics, Grasping the Essence, and Gaining Success Experience
Beyond that, we aim to become a group that pursues customer value and the infinite possibilities of bearings.

Katsumi Yamamoto
Industrial & Bearings Business Unit

Beating Commoditization by Pursuing High-Quality Yet Inexpensive Products

Bearings are one of the JTEKT Group's founding businesses, and its mission has traditionally been to sustain its competitiveness to generate funds for future investment. However, the business has not been able to fulfill this role for the past few years. To restore its lost competitiveness and survive 20 to 30 years from now, we believe we need to take two major directions: "beating commoditization" and "breaking away from commodities."

Beating commoditization means pursuing high-quality yet inexpensive products in existing products. The two pillars of the Toyota Production System (TPS)—just-in-time and automation—are the basics of the Toyota Group, and it is important to persevere in making steady improvements, such as improving standard work and shortening setup time. Although the Industrial & Bearings Business Unit moved into the black in fiscal 2020, we believe there is still much room for improvement. For example, from a productivity standpoint, the ideal situation is for people to finish their work on time and for equipment to operate 24 hours a day. We are making steady progress in advancing our processes, starting with periodic breaks and then unattended operation for an hour during lunch breaks. The plant, which had lost its vitality due to deteriorating profitability, continued to make improvements on-site with persistence. We see regained confidence in the eyes of each employee after a succession of success experiences. Furthermore, we have recently been making use of the comprehensive strength of the Group, for example, by utilizing the know-how of the Machine Tools & Systems Business Unit related to processing conditions to improve the polishing process. We will continue to strengthen our competitiveness by leveraging our strengths in manufacturing.

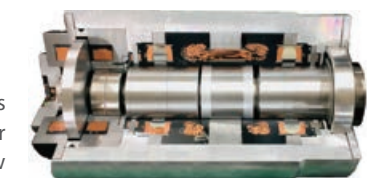
Creating New Value for the World and our Customers

On the other hand, breaking away from commodities means providing new products and services in growth fields where JTEKT can utilize its strengths. The days when our business was built on doing what our customers told us to do are long gone. It is now essential for us to grasp what our customers really want behind what they say and what people around the world are looking for to proceed with development.

In the automotive field, demand for bearings that can handle the high-speed rotation of motors is increasing as the shift to electrification continues at a rapid clip. We are contending with fierce development competition, but we are able to demonstrate our presence in this area where we have the world's highest level of technological capability. Flying cars will probably appear in the future, and I am confident that we will be able to make a contribution there as well.

The industrial machinery field also has strong potential for great leaps forward. We will demonstrate our unique strengths in niche growth markets and aim to lead in each field. For example, demand is expected to grow for special bearings used in semiconductor manufacturing equipment and magnetic bearing products used in sewage treatment plants, but there are only a limited number of manufacturers that can address this demand. We therefore believe that we can find opportunities to win here. The move to carbon neutrality is also a business opportunity for us, as it is the beginning of a major shift in the needs of society. In particular, in the field of renewable energy, bearing devices are required for turbines used in geothermal power generation, and we will also focus on bearings for large-scale offshore wind power generation, which is expected to expand in the future. Offshore wind turbines are large and require a new approach, and so we are developing processing equipment in collaboration with the Machine Tools & Systems Business Unit.

The electrification of automobiles does not mean zero CO₂ emissions, as there is an aspect of transferring those emissions to the power generation sector. From this perspective, I believe it is extremely meaningful for JTEKT, which has been engaged in the development and production of automotive parts, to contribute to power generation systems using renewable energy for the benefit of the earth and our customers.



Magnetic bearings

Review of Operations

Machine Tools & Systems Business Unit

Becoming a *Monozukuri* Innovation Company
We provide value in all phases of *monozukuri* and contribute to the enhancement of customer value with "Only One" technology.

Business Overview

We aim to enhance the value of our customers' *monozukuri* by developing three businesses: machine tools such as grinders, machining centers, and gear skiving centers; IoT^{*1} solutions and other solutions; and life-cycle businesses.

We will develop solutions for new needs and their growth, such as the electrification and automation of automobiles, using machine tools and other proprietary technologies of our Group companies. As a manufacturing line builder, we will propose high-precision grinders for manufacturing the high-precision rolls required for the production of lithium batteries, laminated capacitors^{*2} and high-performance films, and gear skiving machines for realizing new configurations for electrified gears and other products in growing fields.

*1 Internet of Everything: In contrast to the Internet of Things (IoT), this term means to connect all things.

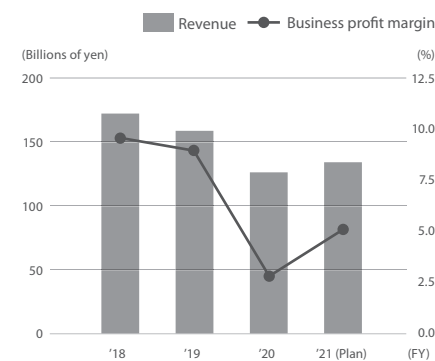
*2 Capacitors with stacked dielectrics and electrodes to store more charge

Fiscal 2020 Results and Fiscal 2021 Plan

In fiscal 2020, both sales and profits decreased year on year due to a confluence of such negative factors as trade friction between the United States and China, the COVID-19 pandemic, and the shift to EVs in the automotive industry.

In fiscal 2021, we expect investment to recover, and that the needs for a green society, work-style reform, and manufacturing DX will increase. In response to these new needs, JTEKT will (1) develop a series of high-quality yet inexpensive products by combining new modules with a revised structure and cost, (2) improve the level of machine smartness by promoting the digitization of processing technology, and (3) expand its one-stop service, which provides support for everything from equipment planning to production and service using digital technology and online services. In addition, we will promote the creation of new value and contribute to resolving social issues by combining the technologies of Group companies.

Revenue/Business profit margin



FY	'21	'22	'23
New Series	→	→ Additional Options	→ Base Machine
Smartization	→ Level 2	→ Level 3	→
One-Stop Service	→	→ Expansion	→

TOPICS

CBN Camshaft Grinders GC20S/GL32S Receive Top Minister of Economy, Trade and Industry's Prize for Excellence in Energy-Saving Equipment and Systems at the Japan Machinery Federation Awards



JTEKT's CBN camshaft grinders GC20S/GL32S were awarded the top Minister of Economy, Trade and Industry's Prize at the Japan Machinery Federation awards for excellence in energy-saving equipment and systems for 2020. We were recognized for the development and marketing of highly economical products by saving energy and downsizing grinding wheel spindles, which greatly impact machinery energy consumption and footprint.

JTEKT will continue to contribute to the realization of a green society by dramatically improving the energy-saving performance of all its products.

message

We would like to pursue and provide new value in an agile manner by being sensitive to changes and demand.

Shinji Kato

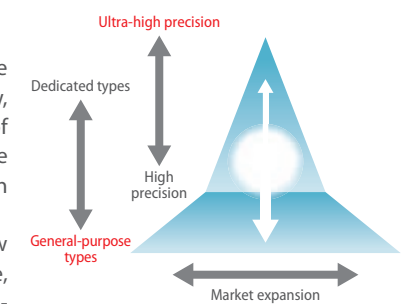
Machine Tools & Manufacturing Systems Business Unit



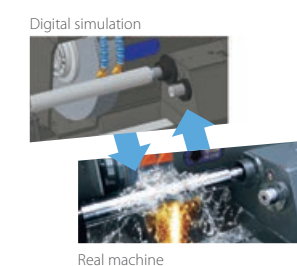
Aiming to be the True No. 1 in the Cylindrical Grinder Field

Our machine tool business has demonstrated its strength in the automotive market since its inception and has grown with the automotive industry. And now, in the midst of a once-in-a-century transformation, the electrification of automobiles has arrived as a major opportunity. This is because we believe the product lines created by electrification will have a wide market and connect with more customers than ever before.

Therefore, we are starting by listening to and engaging with customers in new markets other than automobiles to find out what kind of functions, performance, and price they need in their machines. The key phrase in this context is "high-quality yet inexpensive products." We are breaking down the high-productivity and high-reliability technologies that we have refined in the production of automobile engines into elements and reassembling them as high-quality yet inexpensive products. We are redeveloping all functional modules, such as wheelheads and spindles, to incorporate this concept. In spring 2022, we will launch a new series of high-quality yet inexpensive products made from new module combinations.



Aiming for Manufacturing DX



As the workforce shrinks in Japan due to the declining birthrate and aging population, improving production efficiency has become a major issue for the manufacturing industry. JTEKT has advanced processing technology that is competitive with veterans at other companies who have been polishing their skills over many years. We will digitize this technology and transfer it to machinery to create smart machines that process autonomously beyond what is possible by veterans. Furthermore, the need for greater efficiency is also required in process and facility planning, and the COVID-19 pandemic has accelerated this trend.

By developing digitalized processing technology into simulation technology, we aim to contribute to manufacturing DX, which will lead to work-style reform, with digital completion and confirmation only required for manufacturing.

Contributing to Global *Monozukuri* and the SDGs as a Machine Tool Manufacturer in the Toyota Group

Amid such changes, we have a vital position as the only machine tool manufacturer in the Toyota Group. In the future, in addition to production lines for electrification gears and vehicle batteries, we will also work with the Toyota Group to develop products that can further contribute to carbon neutrality. From the perspective of sustainability and the SDGs, our mission is to overhaul and rebuild equipment to ensure that it can be used for many years to come and to restore its value, as well as to provide support to keep machines running. Many of JTEKT's Group companies have technologies that make them niche leaders. As the machine tool maker of the Toyota Group, we will create new value and contribute to the resolution of social issues. Our mission is to help our customers realize what they want to do, and to provide them with the tools they need, in other words, solutions that enhance the value of their *monozukuri*. Social change and technological innovation will create new demands and new competitive axes. We will continue to pursue and provide new value in a speedy manner, while also remaining alert to change and demand.

Review of Operations

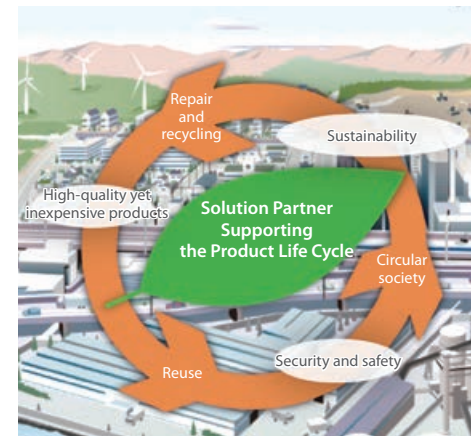
Aftermarket Business Unit

In the aftermarket, we will create new value from the customers' point of view and provide them with a wide variety of products, services, and joy.

Business Overview

JTEKT has been developing the aftermarket with a focus on bearing products through its network of distributors around the world. From fiscal 2021, the organization has been realigned as an independent business unit to lead collaboration among related departments and groups. Utilizing our sales network cultivated through existing businesses, we will become a solution partner that supports the life cycle of products and responds to the needs of a circular society. This includes longevity, recycling, and low carbon, through the timely provision of a wide range of products to the aftermarket with the Group's "No. 1 & Only One" technologies.

- By shifting our focus from only products sales business to products and additional service business, we will become a solution partner supporting the life cycle of products.
- We will respond to a wide range of work floor needs with the Group's network and a variety of products.
- From bearings to driveline systems, we will take the top share of the automotive aftermarket.



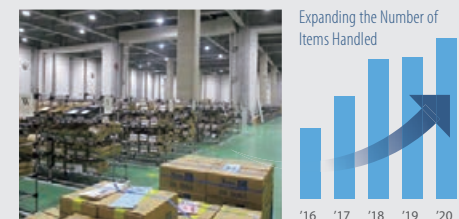
Initiatives to Expand the Aftermarket Business

- We will respond to customer expectations by swiftly introducing our diverse products and services to the market.
- We will provide customers with what they want, when they want it, by ensuring that the product lineup and inventory are sufficient.
- We will strengthen initiatives in regions and markets where sales growth is expected without lagging behind our competitors.
- By growing the aftermarket business through these initiatives, we will pursue increased profits and joy for both our customers and JTEKT.

TOPICS

Expanding Inventory for Aftermarket and Product Range: New Warehouse Opened

In June 2020, JTEKT opened a new warehouse to expand its inventory for aftermarket with the goal of boosting sales. We will provide a full range of products, from standard items to large-size bearings, to meet the demands of both domestic and overseas markets.



Expanding Online Sales

Through our website, we provide a wide range of articles for novices and technical information to our customers. In addition to uncovering potential customers and projects, JTEKT will prepare for the digital business of the future by utilizing e-commerce and its dealer networks.



Start of Automobile Spare Parts Sales

JTEKT started its commercial launch of automobile spare parts with steering gears. We will respond to the need to expand our lineup for the aftermarket.



message

The job is not done when a product is sold: Becoming a solution partner supporting the product life cycle.

Kenichi Ishioka
Aftermarket Business Unit

Creating a New Core Business

The Aftermarket Business Unit was spun off from the Sales & Marketing Division on April 1, 2021.

Goal 12 of the 17 Sustainable Development Goals (SDGs) is "Responsible Production and Consumption," and by providing aftermarket parts to customers in a timely manner, JTEKT seeks to extend the life cycle of products and contribute to the creation of a circular society.

Our various products, such as automobile spare parts, bearings, and machine tools, are used all over the world, and we expect to earn stable and high profits by standing by each of them closely throughout their life cycles. The



aftermarket is also attractive in that it is resilient to economic downturns.

Specifically, JTEKT's goal is to double the business unit's sales and have it account for 10% of companywide sales by 2030. To reach this goal, we need to overcome challenges such as providing rebuild and other new services and establishing novel sales networks including e-commerce and other channels. Yet, we are confident this goal is fully achievable.

"Let's Do Something Interesting" with the Spirit of Challenge

Our product range would expand further if the offerings of Group companies are also handled. However, we do not intend to handle all products from the beginning but rather start with the provision of steering and other automobile spare parts for the aftermarket like our established hub units and oil seals. Going forward, we will increase our revenue by selling kit products to end users and working on preventive maintenance services such as status monitoring services and equipment overhaul.

Unlike other JTEKT divisions, the Aftermarket Business Unit does not have a production function and is mainly responsible for product planning and overseas coordination. To provide customers with products in a timely manner, the unit works closely with both internal and external partners. It has a pivotal role in global sales forecasting and supply-demand analysis to determine what products are needed in which regions and markets, and to plan and create proposals accordingly.

Since this is a new business unit, I think the key thing now is to try out various ideas and expand the possibilities. I hope to meet the needs of our customers with a spirit of challenge under the slogan, "Let's do something interesting!"

