

## SHAPING A BETTER FUTURE

**Taking a long view toward continuous and steady growth for the company that we want to be in 2030 amid a transformation that occurs only once in a century**

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### Looking back on fiscal 2018

Last year was the final year of the five-year medium-term business plan (covering fiscal 2014–2018), which was the first one formulated since I became president of JTEKT in 2013. Looking at the plan's targets for fiscal 2018, set in fiscal 2013, compared with our actual performance, we achieved consolidated net sales of ¥1,431.3 billion, significantly exceeding our ¥1,340.0 billion target, calculated on the exchange rates we use for management reporting. Meanwhile,

operating income amounted to ¥54.7 billion, and fell considerably short of our target of ¥100.0 billion.

I attribute the shortfall in profit to changes in the external environment, namely increasing competition in our core electric power steering (EPS) business, compounded by such internal factors as exceeding our targets for cost of goods sold during the ramp-up of a new line for rack assist-type EPS<sup>1</sup> and our targets for improvements to productivity.

1. EPS where the motor responsible for the assist is installed around the rack bar

	FY2018 Targets	FY2018 Actual	Increase / (decrease)
Net sales	¥1,340.0	¥1,431.3	¥91.3
Operating income	100.0	54.7	(45.3)
Operating income margin	7.5%	3.8%	(3.7) %

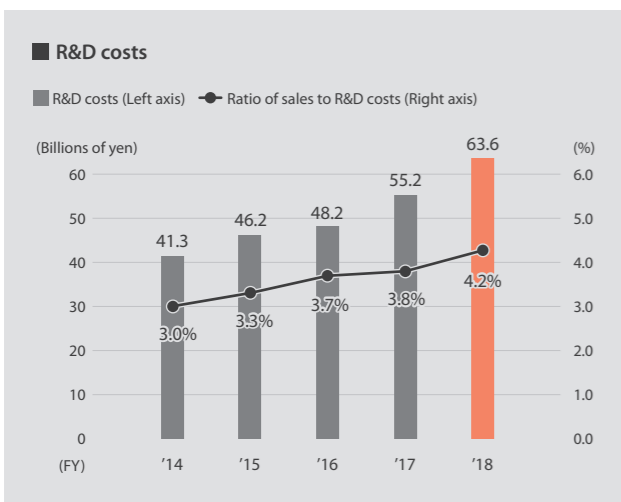
Billions of yen

Foreign exchange rate: US\$1=¥95, €1=¥110.0, CNY1=¥16.0

## Responding flexibly to change and aiming to generate the innovation that leads to resolving social issues

### Ceasing to invest aggressively in the future leads to an end to growth

We recognize that increase in fixed costs is a factor that impacts earnings, but we have increased our R&D spending by more than ¥20 billion on a single-year basis compared with five years ago. We are increasing this investment intentionally to ensure we remain successful in an era of great change.



The automotive industry is said to be undergoing a transformation that occurs only once in a century. We must respond fully to the trend embodied by the acronym CASE<sup>2</sup>, in particular to autonomous driving (the “A” in CASE). We currently hold the top share globally in power steering, but if we are slow in our response to autonomous driving, we will find ourselves left behind as simply a manufacturer of steering hardware.

As I mentioned previously, the competitive environment in EPS is intensifying. Column assist-type EPS in particular has been commoditized, and it is increasingly difficult to generate meaningful margins in this product. We are at a critical juncture in our survival in our efforts to maintain our position as a Tier 1 supplier of steering systems that incorporate control software. We will continue to make the necessary investments with this sense of urgency.

### Adaptability to CASE is the key to the future

In April 2019, we established J-QuAD DYNAMICS Inc., a joint venture developing integrated control software<sup>3</sup> for autonomous driving and vehicle motion control in collaboration with Aisin Seiki Co., Ltd., ADVICS Co., Ltd., and DENSO CORPORATION. Four companies with a shared strong sense of urgency and desire to compete with rival mega-suppliers in Europe and other regions have come together in this venture.

Furthermore, in May 2019 we took an equity stake in Advanced Smart Mobility Co., Ltd., a collaboration between industry and academia in the field of autonomous driving. Advanced Smart Mobility engages in R&D in autonomous driving technology, particularly for buses, and has been commissioned by the Cross-ministerial Strategic Innovation Promotion Program (SIP) to conduct feasibility testing on self-driving buses as part of its “autonomous driving system” initiative.

2. Acronym that stands for Connected, Autonomous, Shared, and Electric  
3. Software facilitating integrated control of electronically controlled components in multiple units rather than individual units



A joint press conference announcing the establishment of J-QuAD DYNAMICS



Feasibility testing of next-generation urban transportation

JTEKT is participating in R&D that has been promoted by Advanced Smart Mobility and is aiming to drive the kind of innovation that leads to resolving social issues, such as autonomous transportation systems using buses and vehicle platooning using self-driving trucks.

### Addressing electrification with JTEKT’s core technologies

JTEKT is focusing on electric (the “E” in CASE) in areas not limited to autonomous driving. When we speak of the electrification of cars, many people have the perception that there will only be pure electric vehicles (EVs) running on the roads in the future. However, some observers believe that when viewed holistically from “well to wheel,” a world made up of only pure EVs is not sustainable. I project that in the future EVs will account for at most about 25% of all cars. If the majority of the EV market comprises hybrids or plug-in hybrids, internal combustion systems will remain. I believe we can say with certainty about the world of cars in the future that 1) engines will be smaller, 2) there will be more batteries, and 3) there will be more motors.

On the first assertion that “engines will be smaller,” JTEKT is only one of four makers globally and two in Japan of specialty grinders used to polish camshafts and crankshafts. JTEKT’s technology will therefore be in demand in order to create smaller engines. Going forward, grinders<sup>4</sup> will have to be more

compact to accommodate shorter camshafts and crankshafts. We are working hard to manufacture and sell such products.

Regarding the assertion “there will be more batteries,” JTEKT’s machine tool business makes equipment to manufacture batteries. Given the rise in demand for batteries for EVs, I believe we have a big business opportunity in battery manufacturing equipment as well as high-precision grinders used to polish rolls<sup>4</sup> used in the battery manufacturing process.

And as for the assertion “there will be more motors,” our strategy is to boost the value-added in our single ball bearings<sup>5</sup> (SBBs) used in automotive motors. In general, SBBs have been commoditized, but we aim to develop and market high-value-added SBBs that can handle the high revolutions of automotive motors.

Furthermore, it goes without saying that electrification and EPS go hand in hand, and we are enjoying a tailwind as the No. 1 supplier of EPS. In addition, as electrification progresses, “electricity economy” (analogous to fuel economy), or the extent electricity consumption can be curtailed will be valued. We have therefore positioned high-value-added EPS as a strategic product that can contribute to electricity economy.

4. A machine that grinds the surface of a workpiece with a rotating grindstone  
5. A type of rolling bearing that separates moving parts of bearings using a single row of balls



A compact crankshaft grinder



### Management forms a long view for continuous growth

The sharing economy (the “S” in CASE) is the area in which we, as an automotive components manufacturer, have no way to address at the moment. Going forward, growth in car ownership particularly in developed nations is expected to slump and automotive manufacturers and auto parts suppliers alike are bound for challenging times.

Yet it is exactly because tough times are projected ahead that I believe we should set challenging targets. In February 2019, we clarified our vision of the company that we want to be in 2030 and set annual sales growth of 4% as one of our key performance indicators (KPIs).

Looking back on when we set our targets for 2030, at first our secretariat proposed a target of 2.6% since the automotive industry as a whole was expected to grow at about 2%. However, I was told at the time that global GDP growth was projected to be 3.6%. If our expected growth rate was below that of global GDP, it meant our relative position in society would decline and we would not be able to boost the motivation and morale of our people under such conditions. I therefore decided to set a more ambitious sales growth target of 4%.

Meanwhile, there are companies out there that aim for growth of 7%, or even 10%. I think such targets would be very hard to achieve without very robust management systems. There is a Japanese expression that says folding screens and shops collapse if you spread them out too far. JTEKT was formed through the merger of companies in four businesses and therefore its management structure is relatively complex. We will solidify our management systems and develop our talent while taking the long view toward continuous growth. This is the image of the company that we aim to become.

### Looking for business opportunities in what the world cannot do without

We are targeting 4% growth in an era when growth in the automotive industry is expected to decelerate. We believe we can close the gap by looking for business opportunities in the things that the world cannot do without.

When we discussed within JTEKT, “what are the things the world cannot do without?” The answers included people’s lives and health, food, energy, and mineral resources and other natural resources. It may not be apparent to people living in Japan, but from a global perspective, fresh water is also a natural resource we cannot do without. As for Japan, the decline in the working population has already become a social issue, highlighting labor, as another thing the world cannot do without.

The seeds of growth we have in such areas are control technologies gained through the development of steering systems, tribology<sup>6</sup> and measurement technologies gained through our bearings businesses, IoT-related<sup>7</sup> technologies gained through our machine tools and mechatronics businesses, and so on. There are business opportunities at the intersection of what the world cannot do without and the seeds that JTEKT possesses. In other words, we intend to use our seeds to help resolve social issues by responding to needs in areas different from our four core businesses.



JTEKT Power Assist Suit



Showroom “JTEKT ROOM Ginza”



Higashi-Kariya Innovation Center

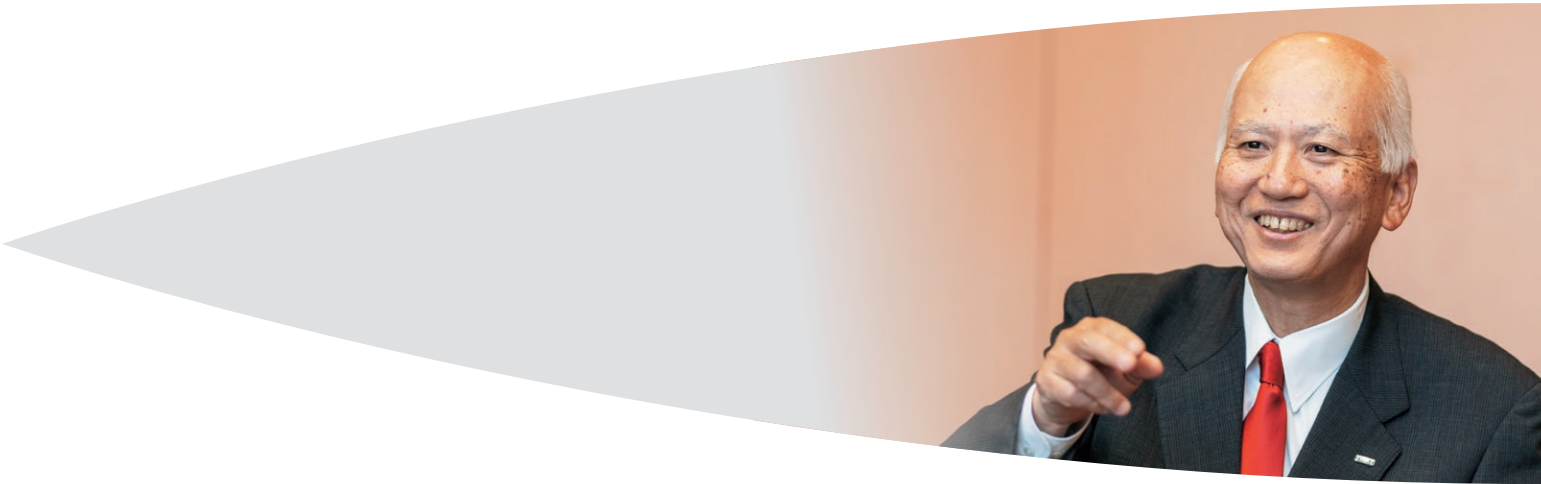
Our Power Assist Suit is one example of a success story in this regard. Applying bearing tribology and power steering control technologies, this device lightens the load on the worker’s lower body when performing tasks like lifting and lowering heavy objects.

Furthermore, our “Factory agent” matching service for manufacturers that debuted in 2019 is a platform that connects factories that would like to order processing with factories that are seeking to accept such orders. In this business, we are able to capitalize on the many relationships with manufacturers that we have established as a machine tool maker. The main goal of this business is to have customers take advantage of and be satisfied with this service, but at the same time we are able to

use data on the type of processing our customers want in our marketing efforts. Through this business, we expect to create win-win relationships that are highly satisfying for both our customers and JTEKT alike.

We are fostering the sprouts of many new businesses besides those I have introduced here. Going forward, we will strive to create new value beyond the framework of our four core businesses and thus contribute to a sustainable society that is on even a higher dimension.

6. Technical areas involving friction, wear, lubrication, etc., between objects  
 7. Internet of Things: Automated recognition, control, and remote measurement of information and communications equipment, including not only computers but also every other electronic device with communications functions that are connected to the internet and communicate with each other



## “Catch ground balls that are hit between the shortstop and third base” Making “Ownership” our corporate culture and entrenching it throughout the JTEKT Group

### The changing role of workers brought on by automation

In Japan, it has become difficult to secure staff as a declining birthrate has made hiring extremely difficult, and this is further exacerbated by the sharp decline in the working population approaching in 2025 as many employees reach retirement age. As such, automation and boosting productivity by completing work with fewer workers is a pressing matter.

I frequently tell our employees, “do not take technical skills lightly.” For example, just tightening a bolt with an electric screwdriver requires a high degree of technical skill. We have some employees who are so passionate about their work that they bring nuts and bolts home with them to practice tightening them over and over while watching television or conversing with family members.



Class scene of JTEKT Academy

To promote automation, the jobs that today require the skills of experienced workers will need to be handed over to robots. Teaching is an important element of this process. Allow me to share a story I heard from a friend. He explained to me that a robot trained in Japanese calligraphy would draw characters of vastly different quality depending on if it had been taught by a master or by an ordinary person. Robots taught the intuition

and technique of a master produce results that are worlds apart from those that are not. The same can be said about robots on the manufacturing floor.

Automation spreads from an inability to hire people as well as a declining population. When this happens, those who worked as welders up to now will take on new jobs in teaching and maintenance. In other words, the role itself of a person working on the manufacturing floor will change. As this happens, it will lead to people working in areas with higher value-added and should lead to a dramatic improvement in the total productivity of capital and labor.

We operate JTEKT Academy, which aims to develop the skills of high-school graduates entering the company. Currently, half of the high-school graduates we hire enter JTEKT Academy and learn technical skills while the other half are assigned directly to the manufacturing floor and learn such skills on the job. In the future, however, we are thinking to end direct assignments to the manufacturing floor and have all such new hires learn technical skills at the Academy. We are also working to change the Academy’s curriculum. Basic techniques such as plating and polishing are important, but the new joiners will also learn how to use sequencers<sup>8</sup>, programming, maintenance, and other skills. There is no question in my mind that we not only need to adopt recurrent education<sup>9</sup> but also change our employee education from the ground up.

The same thinking applies to indirect divisions. Training our people is exceptionally important to improving our productivity amid a declining birthrate and an aging population. This entails improving IT literacy to raise the quality of work styles, changing our training systems including the adoption of recurrent education, and aggressively implementing staff rotations.

8. A controller that controls sequence (order) and output circuit according to the input signal  
 9. A recurring / repetitive education system that encourages mutual education and work throughout life

### Focusing on development of the next generation of executives

Continually revitalizing our managers is a key theme in our human resource development. Every year, JTEKT selects managers globally to participate in a six-month training program conducted in English. Through this program, we are developing professionals with broad-ranging knowledge necessary for business.

Even if an employee is currently a technician, for example, that person could one day become a managing officer of JTEKT or an executive at one of our Group companies. We have them learn the basics of business from a broad perspective, by participating in functional areas they had not been exposed to until now, such as marketing, design, and feasibility studies<sup>10</sup>. Their graduation project is to propose a new business, and through this process we have generated and accumulated new business ideas with a high potential for commercialization. From this stock of ideas, the New Business Promotion Department reporting directly to me looks for the seeds of new businesses and incubates them. Some of the “sprouts of new business” I mentioned previously come from here.

10. Investigates the potential and profitability of new businesses and other projects

### Instilling the JTEKT WAY and aiming to be the company that we envision in 2030

In 2016, the JTEKT Group announced the JTEKT WAY as an expression of its shared values and ambitions as embodied in five keywords: “Customer first,” “Ownership,” “Continuous *kaizen* (improvement),” “Teamwork and self-discipline,” and “Aspiration for innovation and for technique.” Of these keywords, the last two were inherited, respectively, from Koyo Seiko and Toyoda Machine Works, the two companies that merged to form JTEKT. Staff in the Corporate Planning Division who travelled around

#### Customer first

- We are committed to look at things from customer’s viewpoint, and sincerely respond to customer’s requests.
- We are committed to create values that are new to the world, to deliver products and services that exceed customer’s expectation.

#### Ownership

- We are committed to take everything as our own business.
- We are committed to grasp the essence of things and take prompt action.

#### Teamwork and self-discipline

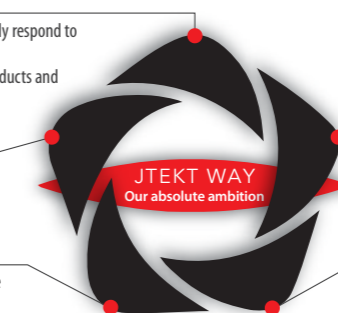
- We are committed to be self-disciplined, and perform any task with a sense of urgency.
- We are committed to actively communicate to unite the power of each other.

#### Continuous *kaizen*

- We are committed to go and see for ourselves to thoroughly understand the situation, and identify root causes.
- We are committed to, with enthusiasm for imaginativeness and inventiveness, diligently continue *kaizen* challenges.

#### Aspiration for innovation and for technique

- We are committed to limitlessly heighten our technology and skills to become a front runner in innovation.
- We are committed to foster a culture to keep each of us humble in learning things and developing each other.



the world to hold discussions created the other three. Three years have passed since the announcement, and I feel confident that understanding and penetration of the JTEKT WAY has progressed. That said, I get the sense we have work to do in instilling “Ownership” fully throughout the organization.

I often say, “catch the ground balls that are hit between the shortstop and third base.” I use this as an analogy for taking initiative and responsibility in situations where some may intentionally shy from it. For example, when an issue with quality arises, if everyone shies from responsibility or tries to place it on others, the issue grows increasingly worse. In the case of automobiles, they are manufactured at a pace of about one car per minute, so delays might put many lives at risk. No matter where the root cause of the issue lies, when they arise we must first visit our customers and immediately take corrective action.

Those without a sense of ownership quickly try to push responsibility onto others. No matter how much talent a person has, if they do not have a mind-set of taking responsibility, they will never improve. We must entrench “Ownership” in all our employees and sublimate it such that it becomes an integral part of our corporate culture.

Our competitors are working hard to survive within the transformation in the automotive industry that happens once in a century that is occurring right now. We will not survive if we have the tepid attitude that something was not a problem yesterday so it will be the same tomorrow or that someone else will take care of the problem so we do not have to get our hands dirty.

I believe it is only when all our employees have a customer-first mind-set and work toward continuous *kaizen* with a sense of ownership that we can become the company that we are aiming to be in 2030. I would like to make this a reality with the JTEKT Group working as one.