Message From the President

The spread of the new coronavirus infection changed the world economy and people's lives. However, manufacturing activities do not stop. We will continue to evolve in anticipation of further growth beyond these difficulties.

My understanding of the impact of the new coronavirus

New coronavirus infections (Hereinafter, "coronavirus") are spreading around the world. I would like to express my deepest sympathies to those affected by the disease, and express my respect and gratitude to those who focus on treatment and infection prevention. Yaskawa Group places top priority on the safety and security of its employees and all other stakeholders, and is committed to collecting accurate information and implementing preventive measures based on prompt judgment.

The impact of this coronavirus on Yaskawa Group's business environment has become more and more prolonged over time. It has become difficult to imagine that in the future people's movements will return to what they used to be, and it will become even more difficult to set a long-term outlook. As a result, I feel the need to accelerate our efforts to build a robust corporate structure.

As the movement of people is restricted by the

effect of coronavirus, consumption is expected to cool down, and we have to assume a severe business environment for the next few years. On the other hand, however, the movement triggered by this lesson is related to human life, and from the perspective of BCP, I believe that it will lead to accelerating investment in automation and manpower saving of manufacturing on a global scale.

For example, in Yaskawa Group, there was a temporary concern about the procurement of processed parts, which raised the issue of inhouse production of parts. In addition, we are operating the factories after taking measures against infection, such as wearing masks and ensuring social distance. However, in order to make the factory more thorough in measures, it is necessary to change the layout of the production line using robots, etc., and to further automate production. I assume that similar problems exist in many manufacturing sites.

In addition, the coronavirus has increased the momentum to review the globalization of the economy, and there are growing concerns about



disruptions in supply chains, as well as a growing tendency among countries, including the United States and China, toward inward-oriented economy.

Under these circumstances, Yaskawa's role is to support Japanese manufacturers, including us, so that they can continue to be competitive, with data utilization such as AI and IoT and leadingedge technologies at their core. For the automation and mechanization of the manufacturing industry, it is also important to understand how people can remotely install robots and tune machines without moving around. Yaskawa is committed to making this a reality.

Strategies for achieving "Vision 2025" and mid-term business plan "Challenge 25"

The efforts we have made in our long-term business plan "Vision 2025", including the promotion of automation and optimization of plants centered on "i³-Mechatronics", and digital transformation are not intended to respond to the effect of coronavirus, but they have led to the establishment of a structure that enables us to quickly adapt to changes in the business environment.

For example, because we had been preparing for the full-scale application of telework, approximately 2,000 employees in Japan were able to quickly shift to telework, and as a result, the introduction of telework accelerated rapidly. At present, coronavirus has had a significant positive effect on factors other than business results, such as strengthening of the corporate structure, as seen in the reform of the way we work and expenses. This effect must be sustained.

At the same time, as the business environment changes rapidly, we recognize the need to further localize operations in each region of the world. The role of the Japanese head office in Yaskawa Group's *glocal* management is to determine major directions (strategy), and it becomes increasingly important to leave operational decisions to the local top and execute them quickly. It may be a problem if the direction is not the same, but we will continue to localize operations and create a system that enables

speedy implementation.

Mid-term business plan "Challenge 25" has set an operating profit target of ¥70 billion. Despite the adverse business environment, we believe that we can achieve our profit targets even at a time when sales growth is unlikely by improving our profit structure and establishing a sound corporate structure through promoting digital transformation to enable working style reform and more thorough cost control, as well as promoting localization of operations.

What I would like to achieve with digital transformation

FY2020 is positioned as the first year of Yaskawa Group's DX (digital transformation), and the following four items have been set as the goals of our activities.

- Real-time visualization of consolidated management conditions, including orders received, sales, profits, expenses, plant operation, quality information, and other elements
- ② Promotion of work style reforms aimed at achieving fair evaluation and rewarding work environment
- ③ Enabling settlement of consolidated full-year fiscal data in two weeks and quarterly fiscal data in a week
- ④ Eliminating handover period when an employee is transferred to another department by accumulating know-how

Rather than being misled by the general definition of DX in the world, Yaskawa has named its activities to achieve digital transformation "YDX" - YASKAWA Digital Transformation-. As the head of the ICT Strategy Promotion Div., I am promoting this initiative top-down and speedily.

I also want to create a new corporate culture with YDX through awareness and business reforms. In the long history of Yaskawa, there was a time when we had to undergo difficult business operations. We overcame difficulties by cutting salaries for all employees and putting up with it together. For this reason, we were called "equal" and "good company". However, in order for Yaskawa to evolve into a truly highly profitable company, I believe that "fair" rather than "equal" should be the way we are. We must promote the spread of a culture to realize "fair evaluation of the results (profit) achieved by employees who act on their own initiative". Digital evaluation, which aims to evaluate the results of work fairly rather than the time spent at work, are one of the ways to support work style reforms.

Review of FY2019 and FY2020 initiatives

In FY2019, the business environment was generally severe due to the impact of trade friction between the United States and China. As the effects of these measures began to lessen toward the end of the fiscal year, the spread of coronavirus throughout the world forced the Group to post lower revenues and profits. Under these circumstances, we have steadily implemented technological, production, and sales reforms under the banner of "i3-Mechatronics". These include the establishment of a system that enables us to respond to customers in an integrated manner, from inquiries to services, through the acquisition of a service subsidiary, the establishment of a new subsidiary i3 DIGITAL that handles AI and IoT businesses for factory automation in the manufacturing industry, and the launch of the "i³-Mechatronics CLUB" with the aim of planning and creating solutions in collaboration with partners.

In FY2020, although a recovery in the Chinese market and solid performance in the semiconductor-related market are positive factors, the operating environment in general is expected to remain challenging. Against this backdrop, we will focus on acceleration of YDX's initiatives and establishing YASKAWA Technology Center (Scheduled to start operation in March 2021) as a new base that will integrate technology development, which are the keys to achieving manAs part of our efforts to establish a business model based on "i³-Mechatronics", we will strive to expand high-quality orders by building relationships with customers in growing markets and strengthening collaboration. We will also strengthen our engineering structure and expand our collaboration with business partners. In the food business, which is a new business area, we will expand orders by establishing solutions for home-meal replacement production and vegetable plants, and strengthening collaboration with leading companies in the food industry. We will also enter the logistics market in earnest and

agement success over the next 10 years.

strengthen the Al/IoT field by leveraging the comprehensive capabilities of the Yaskawa Group and other partners, including an Al subsidiary Al Cube, an IT subsidiary i3 DIGITAL, and IT partner YE DIGITAL.

Message to stakeholders

The coronavirus has transformed the world economy and people's lives. However, manufacturing never stops. Even if people don't move, things are still manufactured and transported. This impact is not negative for Yaskawa Group in the long run, and I am confident that we can achieve further growth by overcoming this impact. I would like to take this opportunity to thank our shareholders, investors and other stakeholders, and look forward to the continued support as we move forward.



Changes in the External Environment

The impact of the new coronavirus, which occurred at the end of FY2019, has completely changed the direction of the global economy, which had been on a growth track. In addition, the future is more uncertain than ever due to increasing geopolitical risks, including the U.S.-China trade friction. On the other hand, the trend toward automation, robotization, energy conservation and decarbonization is expected to continue to grow against the backdrop of such factors as the innovation of digital technology, the aging of the population in developed countries with a low birth rate, climate change and other environmental problems, as well as the avoidance of the "three Cs*" to prevent the spread of new coronavirus infections. Thus, the FA related market and the application market of power conversion technology, in which Yaskawa Group excels, are expected to grow steadily.

* Closed spaces, crowded places and close-contact settings

Environmental issues and Declining birthrate and aging climate change population in developed countries Customers' manage-Opportunities Opportunities Risks Customers' manage-**Risks** ment issues ment issues Work style reform Decarbonization added value for Productivity improvement • Energy conservation · Labor-saving and Stable supply and safety of food manpower saving opportunities for creation, and energy utilization), which is one of our strengths • Elimination of 3D labor Utilization of renew-· High-mix and variablecapital investment due to geopolitical risks able energy volume production Evolution of information and Spread of infection communications technology Risks Customers' manage-Opportunities Customers' manage-Opportunities Risks ment issues ment issues for innovations in manufacturing using Manpower saving Digital transformation and remote (DX) Information security operations resources with the technologies and Securing social distance

Steps to Achieve Mid-Term Business Plan "Challenge 25"

Based on the external environment above, we will continue our strategy to achieve our long-term business plan "Vision 2025", and will strive to maximize profits by controlling expenses, positioning the situation as an emergency in the short term. At the same time, from the viewpoint of mid- to long-term competitiveness to achieve "Vision 2025" we will continue to make necessary investments in such areas as enhancement of development capabilities and digital transformation, in order to strengthen our business foundation to improve profitability with the "i³-Mechatronics" as its core.

Progress in Mid-Term Business Plan "Challenge 25"

As the second stage of the "Vision 2025", the mid-term business plan "Challenge 25" was launched in FY2019. As the first year of the mid-term business plan, which is based on the theme of "Creating new value and markets" we are aggressively expanding our business and strengthening our management base, focusing on the following three basic policies.

Positioning of "Challenge 25"



Progress in the Three Basic Policies



Business model transformation through "i³-Mechatronics"

While strengthening our development, production, and sales capabilities to promote the "i³-Mechatronics" solution concept, we first worked to penetrate the concept and increase orders by enhancing our proposals to existing customers.

	Achievements	Challenges
Development capability	 Started construction of "YASKAWA Technology Center" (Scheduled to start operation in March 2021) Started development of integrated controller "YRM Controller (tentative name)" (To be launched in 2021) 	 Integration of development system toward the launch of "YASKAWA Technology Center" Early commercialization of integrated controller "YRM Controller (tentative name)"
Manufacturing capability	 Stable production operation utilizing data at "YASKAWA Solution Factory" Started robot production at the Slovenia Plant in Europe 	Global expansion of "YASKAWA Solution Factory" production system
Sales capability	 Identifying customers' management issues through top sales Penetration and establishment of cross-business sales through single face sales activities Merger of a service and engineering subsidiary 	• Early creation of synergies through the merger of service and engineering subsidiary

Basic Policy

Maximizing revenue with expanding "robotics business"

In the fields of 3C* and semiconductor, which are expected to expand significantly due to the introduction of 5G and other innovations in information and communications technology, we strengthened our ability to provide solutions by expanding our lineup through the commercialization of new products such as collaborative robots, SCARA robots, and semiconductor wafer transfer robots.

*3C: Digital communications equipment (From the three acronyms Computer, Communication, and Consumer Electronics)





Expanding new business areas by enhancing resources through "selection and concentration"

To expand our focused Energy Saving business, we worked to strengthen our solutions by combining AC drive with high-efficiency motors. Furthermore, in order to enhance the profitability of our Clean Power business, we continued to strengthen sales in order to acquire large-scale wind power generation projects. In addition, in our PV inverter business, we launched and expanded sales of new products.

Furthermore, in order to strengthen our management foundation to promote the above, we accelerated initiatives to centralize management data and integrate business processes on a global scale through the YDX (YASKAWA Digital Transformation) project.

Creating Value through a New Business Model Based on "i³-Mechatronics"

Since its founding, Yaskawa has positioned "motors and their applications" as its business area, and through the development of the world's first and best technologies, has created the core products of today's factory automation equipment, including AC servo motors, AC drives and robots. Formerly, we have aimed for the No. 1 global business by strengthening each product individually. With the shift to a data-driven society, however, in recent years, the concept of next-generation manufacturing, which aims to improve the efficiency and optimization of the entire plant by linking equipment, has spread throughout the manufacturing world.

Based on the solution concept "i³-Mechatronics" for nextgeneration manufacturing, Yaskawa will combine core products that have been refined over the years and optimize cells (Assembly, processing and other processes at production sites) by utilizing IoT and AI. By doing so, we will create value by providing solutions that directly lead to solutions to our customers' management issues, such as shortening production lead times, improving non-stop rates (defect reduction), and increasing utilization rates.

Based on our track record of maintaining the global No.1 share in AC servo motors, which is essential for driving various machines and robots used in factories, as well as our extensive customer base as a result of having been engaged in sales on a separate product basis and our extensive know-how related to data obtained from motors, we will lead the next generation manufacturing with our unique approach.





*2 Location of information processing for real-time data analysis and feedback (Areas close to production floor, such as factories and production sites)

*3 Software that can collect, store, and analyze data on production facilities and equipment in real time *4 Production stoppage due to equipment trouble

*5 Percentage of products that pass all inspections from the beginning to the end of the production processes at one time





Satoru Shiraishi Factory Manager Motion Control Plant

Motion Control Div.

Improvements in manufacturing have made steady progress.

Shiraishi: In Step 1 of the manufacturing process targeted by the YASKAWA Solution Factory, we are working based on the principles of "strict adherence to market-required delivery dates", "labor-saving" and "increasing productivity" by reducing and stabilizing production lead times based on "a system to improve with data". In the past, production lines used to have an excessive amount of work in progress in the middle of the manufacturing process, which resulted in overtaking of the production sequence and lead times varying. The lead-time has been greatly reduced by making it possible to manufacture different models one by one, and by adopting a system that allows a product to flow all the way to the end once it **2**

Goal	Control item		End of FY2019	Target
	Takt time* (production speed)	Motor	-50%	-60%
Strict adherence to		Amplifier	-80%	-80%
delivery dates	Compliance rate on delivery dates	Motor	99%	99% or more
		Amplifier	99%	
Labor-saving	Indirect headcount*		-30%	-50%
	Manufacturing lead time*	Motor	-85%	-85%
Increased direct		Amplifier	-85%	-85%
productivity	Direct	Motor	-35%	-40%
	headcount*	Amplifier	-50%	-50%

* Compared to previous production method

"i³-Mechatronics" Achieves Evolutions in M

YASKAWA Solution Factory, an AC servo factory started operation in FY2018 as a demonstration plant for "i³-Mechatronics". Two years later, Shiraishi, the factory manager, and Kondo, the manager in charge of production innovation, explain how manufacturing has evolved.



to increase production and the number of personnel required to operate the factory is small, it is easy to respond by increasing production shifts without significantly increasing the number of personnel. We also confirmed that we can maintain the same level of productivity as the day shift in the night shift.

Transformation of manufacturing based on data

Kondo: Currently, we are moving to Step 2, where we analyze data such as torque, vibration, and heat coming up from manufacturing sites, in order to prevent the occurrence of brief stops or equipment troubles. This is being implemented in cooperation with our Al subsidiary Al Cube Inc.

Specifically, we collect multiple on-site data, analyze changes and abnormalities

is put on the production line. In addition, it has become possible to confirm the production progress of an order on a PC in real time, instead of having to go to the site to confirm the production progress in response to an inquiry about the delivery date. The productivity of indirect work has improved, and the shift to more creative work is progressing, freeing us



from work that deals with current issues. As a result, the rate of compliance with deadlines for customers has improved significantly, and manufacturing improvements are steadily making progress.

Kondo: Furthermore, the YASKAWA Solution Factory has built a structure that makes it easy to keep up with the significant fluctuations in production volume, which is a management issue for Yaskawa. In the past, in order to cope with increased production, it was necessary to increase production shifts and secure a large number of new workers, which required additional costs. In addition, there was a problem that the productivity of the night shift differed from that of the day shift due to issues in the management system. Since the YASKAWA Solution Factory does not require additional investment



Jun Kondo

Section Manager Motion Control Plant Motion Control Div. Strategy by Business Segment

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anufacturing

in products and equipment, and clarify the correlation with errors that occur. This enables feedback control to prevent equipment errors and poor machining and assembly accuracy, enabling true "non-stop" production. In addition, we are actively working to transform manufacturing by utilizing various data from the field and using AI and big data analysis in the conventional inspection and adjustment processes.

Utilizing data from manufacturing sites in product development

Shiraishi: In conventional manufacturing, when a problem occurs, it was difficult to identify the real cause because it cannot be analyzed whether the cause is equipment, parts, or people. However, the ability to analyze field data in an integrated manner has made it easier to find the real cause. At the same time, we are identifying issues arising from the structure of AC servo drive which were previously unknown. We are feeding back the results of this analysis to the development of new products and have also improved the current Sigma-7.

Aiming to solve common problems for the manufacturing companies

Shiraishi: Since the establishment of the YASKAWA Solution Factory, many customers have visited us, and the challenges faced by many manufacturing companies are similar to those faced by us. I hope that seeing what is being done here will lead to a chance to advance efforts to resolve issues, by finding how data will improve manufacturing.

Going forward, Yaskawa Group will continue to advance the implementation of "i³-Mechatronics" in this plant and expand it to other plants and products in order to evolve its manufacturing. We will also build and establish solutions that will form the basis for proposals to customers, thereby expanding new business opportunities.



Realizing flexible management and efficiency in line with changes in the market and the times to achieve "Vision 2025"

In FY2020, Yaskawa Group made "Building a foundation for digital transformation" promoted by "the YDX project" one of its policies, and embarked on full-scale activities as the first year of the project. We asked President Ogasawara, who is also in charge of the ICT Strategy Promotion Div., and deputy manager Shimoike about YDX's aims and goals.

*1 Digital transformation: Using digital technologies to transform business activities, business models, and overall management

Since becoming president in 2016, you have been sending a message that "Making Data a Global Common Language". What made you think so?

Ogasawara: The idea of "Making Data a Global Common Language" had been in my head long before I became president. I came to think so when I went on a long business trip to Korea for the first time in 1981. We didn't understand each other at all, and we talked using pictures and numbers, or "Data". This experience made me realize that it's data, not language, which prevails throughout the world.

What is behind the promotion of YDX?

Ogasawara: Under its long-term business plan, "Vision 2025" Yaskawa Group has set a target of achieving an operating income of at least ¥100 billion. One of the key words to achieve this is "integrated" which is also the first step of "i³-Mechatronics (i cube mechatronics)".

We have integrated our sales by establishing a cross-divisional system^{*2}, and our development by preparing the "YASKAWA Technology Center (Scheduled to start operation in March 2021)"^{*3}, which will serve as an integrated R & D base from basic research to trial mass production and quality control.





Representative Director, President
Hiroshi Ogasawara

On the other hand, systems and data within Yaskawa Group are not yet integrated. For example, data such as "Price" may be "the price at which something is sold to a customer" or "the price at which something is sold to an agency" depending on the country or person. To truly integrate development, production, and sales, we need to align our data definitions. For this reason, we have designated FY2020 as the "first year of YDX" and have begun full-scale efforts to integrate data.

- *2 Please refer to YASKAWA Report 2018, page 11 "Special Feature: Achieving Revolutionary Industrial Automation with the 'i³-Mechatronics' Solution Concept".
- *3 Please refer to YASKAWA Report 2019, page 39 "CTO Message" and page 37 of this report "Intellectual Capital".



Ogasawara: We accelerate global unification of data within Yaskawa Group. The first step to do so is to unify "Code". A code refers to "products", "parts", "business partner", "account", etc., but each division or group company has its own code and classifies it independently. This prevents the smooth transfer of data between divisions and group companies, and prevents the true integration of development, production, and sales.

Q

How do you proceed with code unification?

Shimoike: This fiscal year, we launched the "Global Code Management Group" and assigned personnel to approximately 70 group companies in Japan and overseas. At all companies, personnel were also assigned for each code, including "products" "parts" "business partners" and "account". We will accelerate the expansion of this system to group companies on a global basis by clarifying where



Deputy Manager, ICT Strategy Promotion Div., **Shoichiro Shimoike**

the entire Group should conform to regarding different levels and definitions for each division and company.

What are the challenges in moving forward? Q

Shimoike: In order for the Group as a whole to proceed, it is necessary to have a common understanding and a sense of speed in implementation among about 70 companies. We sometimes have difficulty communicating with overseas group companies due to differences in language and culture, but the group companies and head office divisions must work together to promote business reform and awareness reform, and resolve issues one by one.

At present, we are working to unify the codes and make management information visible. For about 40 of our group companies, data such as orders and sales are updated on a daily basis and made visible. We hope to further expand the scope. Through meetings with other companies that are implementing similar initiatives, I was told that some companies struggle with governance. In the case of Yaskawa, however, we have a clear vision and the president himself promotes these initiatives from a top-down approach. As a result, we believe that we can carry out activities together as a global group with a sense of speed.



What is your ultimate goal of YDX?

Ogasawara: The ultimate goal of YDX is to "standardize operations". To utilize IT is not our purpose, but I believe that the correct approach is to standardize operations so that we utilize IT where it can be effective.

Furthermore, if YDX advances, it will change the perspective



of individual optimization to a holistic view of the entire business situation, allowing us to see the global business situation in real time. This will also enable us to understand how to achieve overall optimization and make appropriate management decisions.

Will the way employees work and their job satisfaction change?

Ogasawara: YDX makes it easier to see how everyone's work and output contributes to the company. For example, an employee in the development department can see how much the product he/she designed is selling for, an employee in the sales department can see how much profit he/she is making from selling a product, and an employee in the general affairs department can see who will benefit from his/her job.

And when the code is unified, it consolidates and streamlines the work that has been done by multiple people. And that leads to standardization of work, which in turn leads to less time for handover. When an employee is transferred to a new department, he/she can begin practical work immediately, which results in enhancing his/her skills more efficiently.

Furthermore, even in telework, which has been accelerated due to the impact of the new coronavirus, work that can be done at home and work that cannot be done at home will be separated, and a variety of ways of working will be possible.

The promotion of YDX will change the way each employee works, which will increase the efficiency of the entire Group and lead to profits.

What is your message to stakeholders?

Ogasawara: "i3-Mechatronics" consists of three i's: "integrated" "intelligent" and "innovative". Digital transformation can be realized by taking the steps of "i3-Mechatronics". In addition to achieving flexible management that adapts to changes in the market and the times, the Group aims to achieve "Vision 2025" by establishing a highly profitable corporate structure through business standardization across the Group that leads to stronger governance and greater efficiency.