Industrial Automation Business (IAB)

Domains: **Factory Automation**

Corresponding SDGs

With the vision to "bring innovation to manufacturing by automation, to enrich lives of people all over the world," the Industrial Automation Business leverages OMRON technologies to create innovations in manufacturing. These innovations contribute to productivity advancements in the world's manufacturing industry. Setting our unique innovative-Automation concept, our aim is to enrich the lives of people around the world by generating/making manufacturing innovations through our technologies and solutions based on the widest range of control devices in the industrial market.

Executive Vice President
Company President, Industrial Automation Company

Yutaka Miyanaga

Digital Transformation Needed Rapidly in Manufacturing Floors

The environment surrounding the manufacturing industry has been undergoing great changes recently. This includes changes in needs in manufactured items and methods, manufacturing locations, and manufacturing personnel, as well as changes in seeds, such as artificial intelligence (AI), Internet of Things (IoT), robotics, and other technological innovations. To solve these challenges faced in manufacturing floors through innovations, OMRON came up with the unique innovative-Automation concept in 2016. By 2019, we had created more than 170 control applications highly integrated with software by making use of more than 200,000 industry-leading control devices. These control applications have been highly appraised by our customers.

COVID-19 has posed unprecedented challenges to the manufacturing floor. Lockdown and travel restrictions implemented to contain the pandemic have caused stagnation throughout the supply chains of manufacturing industries, accelerating the shift from centralized mass production through globalization to local production for local consumption.

In human-centered production floors, where social distancing is required, there are growing calls for diverse working styles, including remote work.

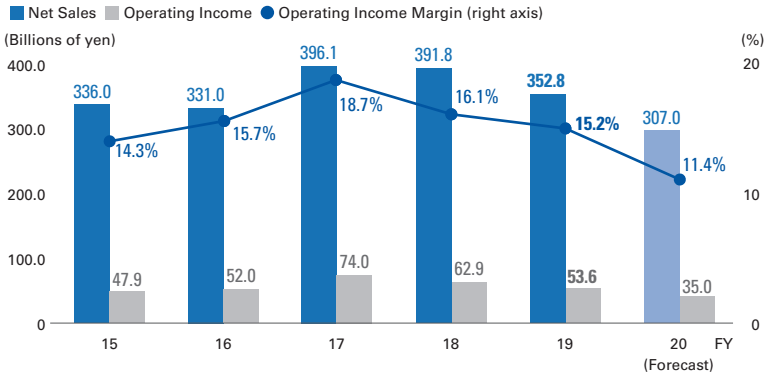
As a result, there is a rapidly growing demand for digital transformation (DX) that uses digital technologies to realize the fundamental manufacturing principles, *San Gen Shugi* (principle of three realities), which focus on real sites, real objects and real situations.

Solve New Challenges From the COVID-19 Crisis Leveraging innovative-Automation as a Partner for Manufacturing Floor Innovation

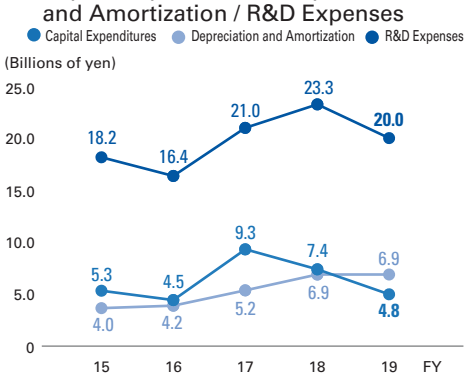
As a company that has been involved in upstream processes of manufacturing for many years, OMRON regards it as its social responsibility to contribute to reducing the risk of spreading COVID-19, to ensure the safety of its employees, and to support work sites that play an essential role in securing sustainable urban and social activities. The new challenges facing manufacturing in the with- and post-COVID eras may also create good opportunities for further innovation leveraging innovative-Automation. Specifically, we can introduce automation to increase resilience in production, or we can apply digital technologies to engineering environments that are highly dependent on human resources, such as design and modification of production facilities and start-up and maintenance of facilities. In June 2020, amid the COVID-19 pandemic, OMRON released an AI-mounted image processing system that contributes to labor saving and automation in the field of visual inspection. This was followed in July with the launch of the robotic integrated controller that enables advanced synchronization of robots and control devices comprising production facilities, and achieves remote engineering at any time and place. These products represent value that can only be provided by OMRON, a company that possesses all the necessary automation devices, including sensors, motion technologies, robots, and safety devices that comprise facilities, and enables automation in a comprehensive manner. To continue with manufacturing innovations in the new world after the COVID crisis, we are working to build remote, online, and other forms of support systems that take into account the health and safety of our customers to the fullest. As a good partner for manufacturing floor innovation, OMRON remains committed to solving new challenges with our customers.

Business Highlights

Net Sales / Operating Income / Operating Income Margin



Capital Expenditures / Depreciation and Amortization / R&D Expenses

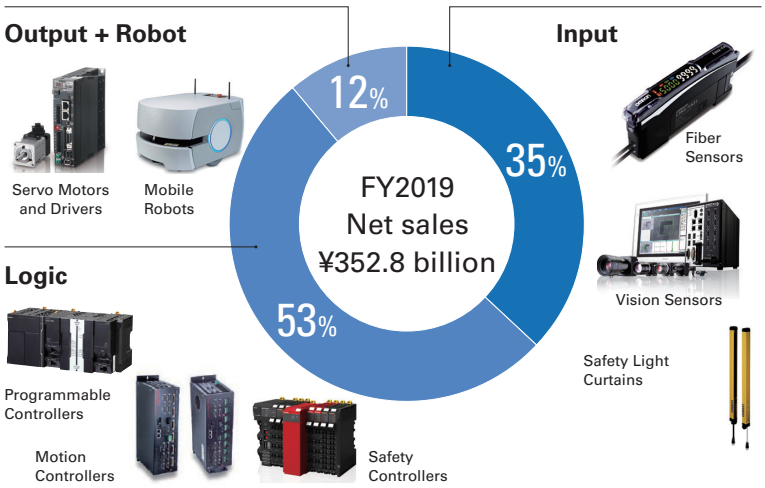


Fiscal 2019 Results and Fiscal 2020 Plan

In fiscal 2019, although demand for capital investment in the digital industry remained low from the beginning of the fiscal year, signs of recovery were seen in the second half, with some investment in semiconductor-related businesses rebounding. On the other hand, demand in the automobile industry was limited as a result of restrained investment due to a decline in global new car sales. Combined with the impact of foreign exchange due to yen appreciation, among others, net sales decreased year on year. Due to the decline in net sales and the impact of foreign exchange, operating income decreased year on year.

In fiscal 2020, we continue to intensify our efforts to offer solutions for solving issues in manufacturing floors. In addition, we place focus on responding to the growing demand for automation and labor saving due to the impact of COVID-19. We expect that it will take time for a recovery to be seen in demand for capital investments in the automobile industry. In light of the continued challenging business environment described above, we forecast net sales for fiscal 2020 to be lower than the previous year. Due to the decline in net sales and the impact of yen appreciation, we forecast operating income to decrease year on year.

Sales by Product



Progress of Sustainability Initiatives

Social Issues to be Solved	Fiscal 2020 Goals
• Labor shortages (shrinking labor force in developed countries and lack of skilled workers in emerging economies) • Respond to increasingly advanced and diversified manufacturing processes	• New innovative-Automation products across four focus industries – Control technology for manufacturing innovation –

Fiscal 2019 Progress

INPUT

- Number of employees: 9,791
- R&D expenses: ¥20.0 billion
- Capital expenditures: ¥4.8 billion (Total of 37 Automation Centers/ 2 new PoCs)

OUTPUT

- Net sales: ¥352.8 billion
- Operating Income: ¥53.6 billion (Operating Income Margin: 15.2%)
- Created more than 170 control applications to realize innovative-Automation
- Created new values, including new production line "Cell Line Control System" where people and machines can cooperate
- Launched the autonomous mobile robot LD-250 and expanded automation applications
- Three partnerships for accelerating innovative-Automation

OUTCOME

- Improve productivity at manufacturing plants through innovative-Automation

SDGs 8.2.1

- Increase added value in secondary industries through innovative-Automation

SDGs 9.2.1

Further Deepening innovative-Automation

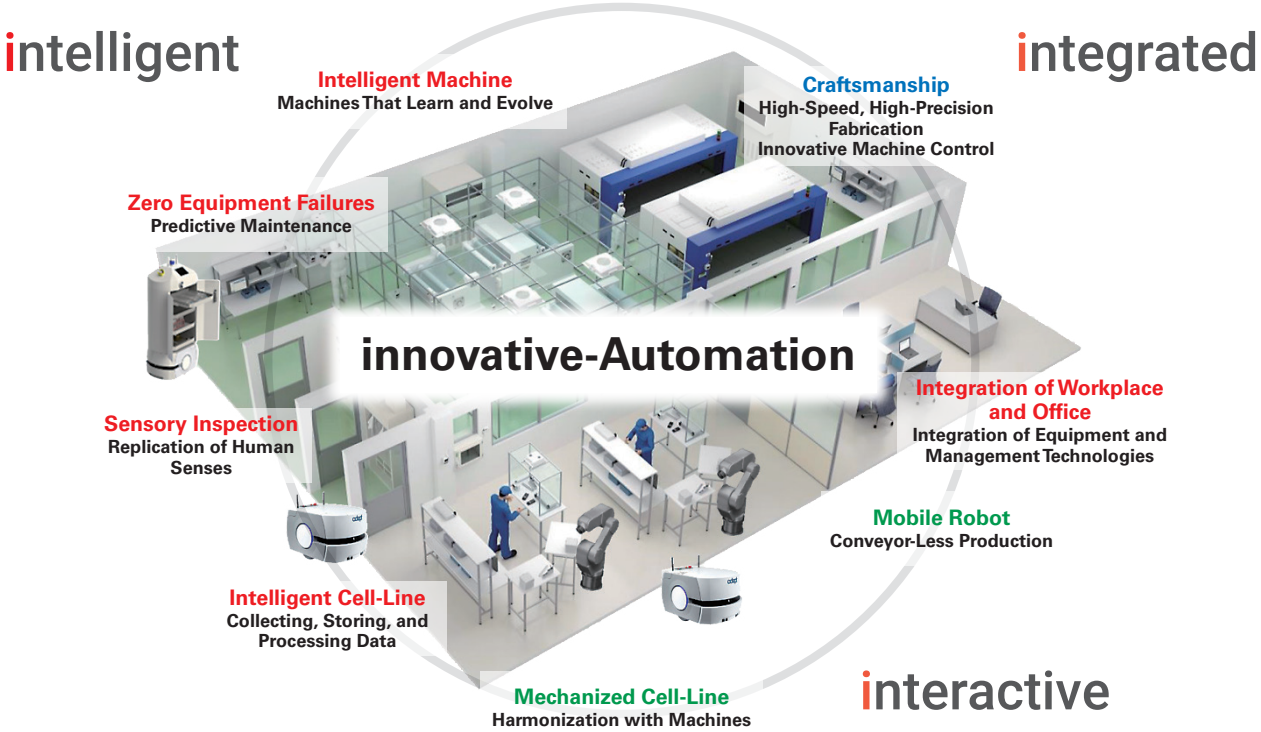
OMRON works to solve issues in manufacturing floors with the unique value creation concept, innovative-Automation. As the name suggests, "innovation" forms a key part of this concept. We have been involved deeply in our customers' front-line operations and created an array of control applications highly integrated with software. We deliver these applications to customers in a wide range of industries around the world, including automobile, digital, and food businesses. The Automation Centers (ATCs) are production hubs for these control applications.

The ATCs are intended to provide a place where our sales engineers and customers can simulate equipment for use on-site and test and demonstrate solutions for issues faced by the customers in their manufacturing floors. In January 2020, OMRON opened AUTOMATION CENTER TOKYO (ATC-TOKYO) in a highly accessible location in Shinagawa, Tokyo. ATC-TOKYO is our 37th global ATC. ATC-TOKYO is the world's largest* ATC that simulates a manufacturing environment. At ATC-TOKYO, visitors can experience and verify AI, IoT, robotics, and other latest factory automation technology. With the ATC-TOKYO as our flagship base, more than 1,000 sales engineers support our customers in solving their issues around the world.

Now, society is shifting focus from things to experiences (or services). Previous to this shift, we have been working on the manufacturing site data utilization service "i-BELT" since 2017. The service is intended to improve manufacturing productivity and quality. The i-BELT is a co-creative service that makes use of digital technology. With the i-BELT service, OMRON combines customers' knowledge with our unique know-how that we have accumulated in control devices and software as a company well-versed in front-line manufacturing operations. In this way, we promote the transformation of our customers' front-line operations through on-site survey, creation of an environment for data collection and visualization, ongoing analysis, and improvement suggestions. In November 2019, OMRON formed a partnership with Siemens for the open platform MindSphere® in order to solve challenges faced in globally diversified manufacturing floors. Through the partnership, OMRON is expanding the service area of i-BELT. OMRON's strength lies in solving issues at the edge, and Siemens has the cloud-based IoT platform. Through the partnership between the two companies, we seek to make use of vast amounts of manufacturing floor data to raise the improvement levels of front-line operations in quality and quantity, as well as to solve issues across multiple manufacturing bases at a time.

In September 2019, OMRON reached an agreement with NTT DOCOMO and Nokia for a joint demonstration using the fifth-generation mobile communications system (5G) in manufacturing floors.

We combine NTT DOCOMO's insight into communications technology, Nokia's base-station platform knowledge, and our expertise in automation of manufacturing front-line operations to evaluate jointly the usefulness and potential of 5G with the aim of developing communications technology required in manufacturing floors of the future.



* In terms of floor area among all of OMRON's ATCs as of September 2020.

Initiatives in Fiscal 2019 to Deepen innovative-Automation

World's Largest Flagship Base of OMRON's FA Technology "ATC-TOKYO"

At ATC-TOKYO, customers can experience and test solutions that are tailored to challenges they face with technologies and applications created through an optimal combination of our more than 200,000 control devices. Adjacent to ATC-TOKYO is AUTOMATION CENTER TOKYO POC LAB (POC-TOKYO). At the POC-TOKYO, we perform work verifications with industrial robots, autonomous mobile robots, and other various robots; test equipment that customers have brought in; conduct demonstration tests simulating the customers' operating environments; and provide technical training for introducing these devices. In this way, ATC-TOKYO provides customers with total support, giving them the chance to not only "experience" cutting-edge manufacturing technologies, but also "verify," "learn skills for," and "develop" devices.

ATC-TOKYO

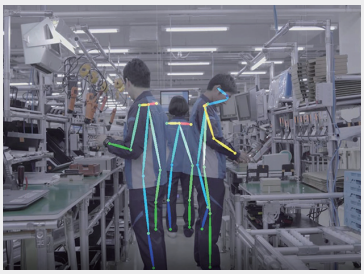
Comments from the General Manager of the Automation Center

Manufacturing floors are entering a period of major transition, and is facing challenges relating to advances in manufacturing processes, high-mix low-volume production, and shortage of skilled workers. ATC-TOKYO works with customers to solve manufacturing challenges of the future by providing opportunities to experience the latest technology combining AI, IoT, robotics, and other cutting-edge technologies in a simulated manufacturing environment. Going forward, we will also work on new styles of solutions through digital transformation that combine reality with virtual reality.

Japan
General Manager, Automation Center
Seki Yamazaki

Commencement of Demonstration Trials on the Use of 5G in Factories in Cooperation with NTT DOCOMO and Nokia

The trials by the three companies will test the usefulness and possibilities of 5G wireless communications, including high-speed, large-capacity, low-latency, and simultaneous multiple connections in factories. As a future application of 5G, we aim to realize layout-free production lines whereby high- mix low-volume production lines using autonomous mobile robots can be constructed freely. We will also provide operators with real-time coaching to support early mastery of skills by collecting and analyzing video data that capture the line of movement and physical movements of operators and giving them immediate feedback on differences from skilled operators. In this way, we aim to level of cooperative work between humans and machines.



Analyzing operator movements

Comments from Our Partner

5G is expected to be utilized in many industries, therefore NTT DOCOMO is working hard on promoting the introduction of 5G for wireless communication in manufacturing settings, as one of the most promising use cases. We are grateful for the chance to cooperate with OMRON and Nokia since fiscal 2019 in the examination and demonstration trials for the use of 5G in manufacturing floors. OMRON has extensive insight and expertise in factory automation devices, control technology, and manufacturing. OMRON is a very strong partner in solving the challenges faced by manufacturing industries.
Through the collaboration, we would like to contribute to OMRON's efforts to improve operating efficiency on manufacturing floors by taking advantage of the features of 5G, such as high speed, large capacity, low latency, and simultaneous multiple connections.

NTT DOCOMO, INC.
Senior Vice President
General Manager of 6G Laboratories
Mr. Takehiro Nakamura

Contribute to Manufacturing Innovation in the With-COVID Era

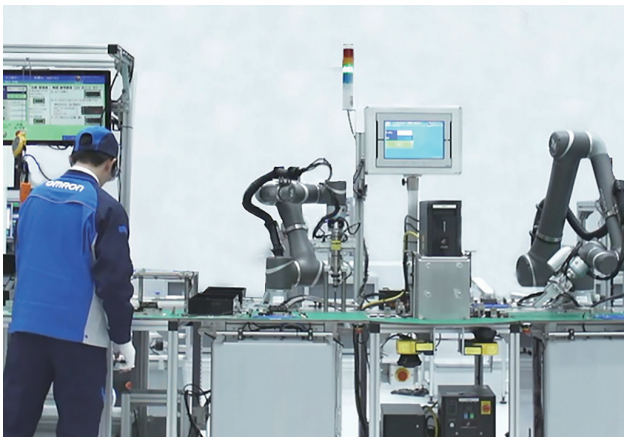
The spread of COVID-19 has had a major impact on the manufacturing industry. OMRON has continued to make efforts to ensure a stable supply and provide support in various ways through its global production network and sales/service bases. These efforts include increasing the production of pharmaceuticals and other medical-related products that play an important role in anti-virus measures, starting up new facilities, supporting the production of food and other products indispensable for everyday life, and establishing production lines that avoid the "three Cs" ("closed spaces," "crowded places," and "close-contact settings") on manufacturing floors.

On the medical front, in particular, OMRON has supported the increased production of medical-related products such as medical face masks and gowns, which are in short supply, and antibody test kits for COVID-19. We have also begun to address new needs arising from COVID-19. One such example is a disinfecting robot mounted with an ultraviolet (UV) light irradiator using the autonomous mobile robot.

The disinfecting robot takes advantage of its non-human characteristics, in particular, its immunity to pathogens, and is equipped with a UV light irradiator. It is operated by setting the locations, routes, and time for sterilization and disinfection, and has already been adopted at various facilities in more than 10 countries around the world, including Poland, France and Canada. OMRON helps reduce the burden on healthcare professionals and disinfecting personnel, and also helps prevent the risk of infection from spreading, by supplying the mobile robots to its partner, which develops disinfecting robots, and supporting their introduction.

OMRON has pursued a new relationship of harmony between humans and machines based on its automation philosophy, "To the machine, the work of the machine; to humankind, the thrill of unfettered creativity." No matter how automation technology advances, human's flexibility and senses will never be surpassed by machines. There has long been a need for labor saving in production floors through the automation of assembly and inspection processes that are commonly performed by human resources. Following the outbreak of COVID-19, a new labor saving method is required to avoid the three Cs in human-centered manufacturing environments, such as cell lines. As a solution to meet this need, collaborative robots that work with human operators are attracting attention. Placing these collaborative robots between human operators makes it possible to avoid the three Cs on manufacturing floors, ensuring the safety of the operators while contributing to productivity at the same time. In this way, OMRON contributes to constructing manufacturing environments that can cope with the shortage of workers by ensuring optimal cooperation between humans and machines, even in the event of unforeseen circumstances such as COVID-19.

Conventional human-centered manufacturing floor



Manufacturing floor where humans and machines harmonize

Solve Social Issues in the With-COVID Era

Supporting the Increased Production of Antibody Test Kits for COVID-19

With the increasing demand for antibody test kits for COVID-19, OMRON developed a robotic solution that connects a cutting machine and a packaging machine in cooperation with the equipment manufacturer, KRAUS-MASCHINENBAU. In just a few months, we built production lines to increase production at Senova Immunoassay Systems in Germany, which develops and produces test kits. OMRON has automated conventional manual production processes and achieved a significant increase in speed, contributing to increased production of test kits, for which there is increased demand.

Antibody test kit for COVID-19

Employee Comments

"We are pleased that we can use our technology to support the global efforts in the fight against the corona virus to a small extent. In times like these and in flexible production of the future, cooperation is the key. We are proud that we follow with this project the OMRON Principles: "to improve lives and contribute to a better society."

Jörg Krause, Germany Area Sales Manager

Automating Disinfection Work in Hospital with Mobile Robots

At the Royal Hobart Hospital in Australia, medical staff had to carry large quantities of used medical equipment to a disinfection room, and the risk of contracting COVID-19 during this process was a cause for concern. In collaboration with A.E. Atherton & Sons, OMRON developed an automated solution for disinfecting medical equipment by linking disinfection equipment with the mobile robot. This solution reduces the risk of infection for medical staff, relieves them from hard labor, and contributes to creating a better working environment.


Automated solution disinfecting for medical equipment

Employee Comments

The automated disinfection process not only reduced the risk of injury from hard labor, but it also improved the work efficiency of hospital staff and contributed to a better working style. We were able to share the OMRON Principles with our partner and deliver Australia's first solution.

John Merret, Australia Business Development Manager

Preventing the Spread of Infection during Disinfection Work with a Disinfecting Robot Mounted with an Ultraviolet Light Irradiator

In Poland, where COVID-19 is spreading, we focused on the disinfecting effects of ultraviolet rays. We have provided mobile robots to ControlTEC, a company developing disinfecting robots equipped with ultraviolet light irradiators, as part of our efforts to prevent the infection from spreading. The product is currently being used in public facilities, such as hospitals, schools, and hotels in Poland, reducing the risk of infection during disinfection work and contributing to the health and safety of healthcare professionals and others.


Disinfecting robot mounted with an ultraviolet light irradiator

Employee Comments

Many companies have realized that automation can provide them with valuable support in coping with this COVID-19 challenge. It is thanks to OMRON's Principle of solving social issues that we were able to come up with an optimal solution based on technology.

Jaroslaw Drzazga, Poland Field Sales Engineer

Innovative Products That Contribute to Post-COVID Manufacturing

COVID-19 has brought major changes to manufacturing floors. Key to these changes is the massive transformation brought about by the latest digital technology, digital transformation (DX). We expect to see further diversification in the way people work, and acceleration in the automation of manufacturing front-line operations. OMRON has launched solutions for accelerating the digital transformation on production floors and the innovation of manufacturing. These solutions include an image processing system with defect detection AI to automate visual inspections, an autonomous mobile robot capable of carrying the heaviest class payload*1 in the world, and a robotic integrated controller that integrates and controls robots and control devices.

The image processing system with defect detection AI makes use of the knowledge that OMRON has accumulated over more than 30 years in the field of visual inspection. Even an engineer with no expertise in AI can bring out the system's high inspection performance by getting the system to learn from only about 10 images. The image processing system incorporates AI technology that reproduces "human sensibility" and "expert experience" in order to detect defects that up to now were difficult to detect with a machine without relying on human experience. This system contributes significantly to the automation of visual inspection, which will become more critical due to the shortage of labor.

The autonomous mobile robot capable of carrying loads of up to 1,500 kg safely automates the transportation of heavy loads, such as large automotive components and voluminous pallet loads, that would have traditionally been moved using forklifts. In response to the increasing demand for labor saving in manufacturing floors, it can be used in combination with the mobile robot capable of transporting loads of up to 250 kg to automate monotonous and dangerous tasks and provide flexible and optimal autonomous transportation.

The robotic integrated controller solves traditional challenges in manufacturing, including high-mix low-volume production, rapid start-up of production facilities, and shortage of skilled technicians, and contributes to promoting the digital transformation of manufacturing, such as remote and virtual operations, which are new needs that have emerged due to COVID-19.

The robotic integrated controller is the world's first*2 controller that makes it possible to control a robot and control devices with a single controller. This previously required separate controllers and software. Integrating ILOR+S*3, which are sensors, motions, robots, safety products—devices necessary for automation that comprise facilities—with a single controller makes it possible to control robots and peripheral mechanisms in real time and in full synchronization.

This enables manufacturers to automate sophisticated and complex tasks, such as inspection and assembly, with robots. This is a value that can only be provided by OMRON, a company that possesses all the ILOR+S devices.

In addition, we have made it possible to use the same programming language to control robots and machines, which used to be controlled with separate programming languages. This enables design and modification simulations for production facilities, and the remote start-up, adjustment, and maintenance of facilities, to be performed in a virtual environment.

These products and applications automate tasks that previously had to be performed manually, and facilitate remote styles of engineering, based on the innovative-Automation concept. OMRON is also working to provide value through new methods of sales activities in real and remote environments by promoting digital transformation. We will remain committed to manufacturing innovation required in the post-COVID world by deepening innovative-Automation to solve challenges in manufacturing floors.

Image processing system with defect detection AI
(Released in June 2020)

Autonomous mobile robots
(Released in July 2020)

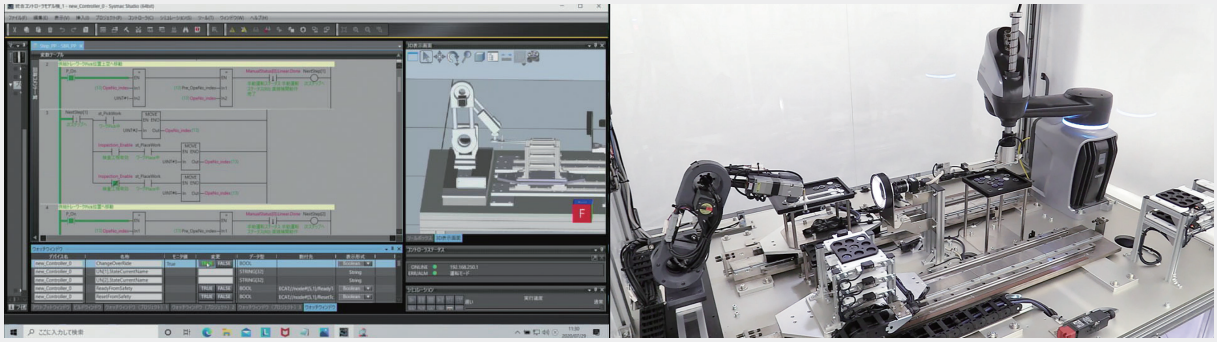
Robotic integrated controller
(Released in July 2020)

*1 As of July 2020 (comparison based on catalogue specs of autonomous mobile robots/internal survey)
*2 Internal survey based on the status of patent applications and registrations as of November 2019
*3 ILOR+S in an abbreviation for Input (input devices such as sensors), Logic (control devices such as controllers), Output (output devices such as motors), Robot, and Safety (safety devices to ensure the safety of equipment)

innovative-Automation to Transform Conventional Perceptions of *San Gen Shugi*

World's First Robotic Integrated Controller That Enables Remote Manufacturing

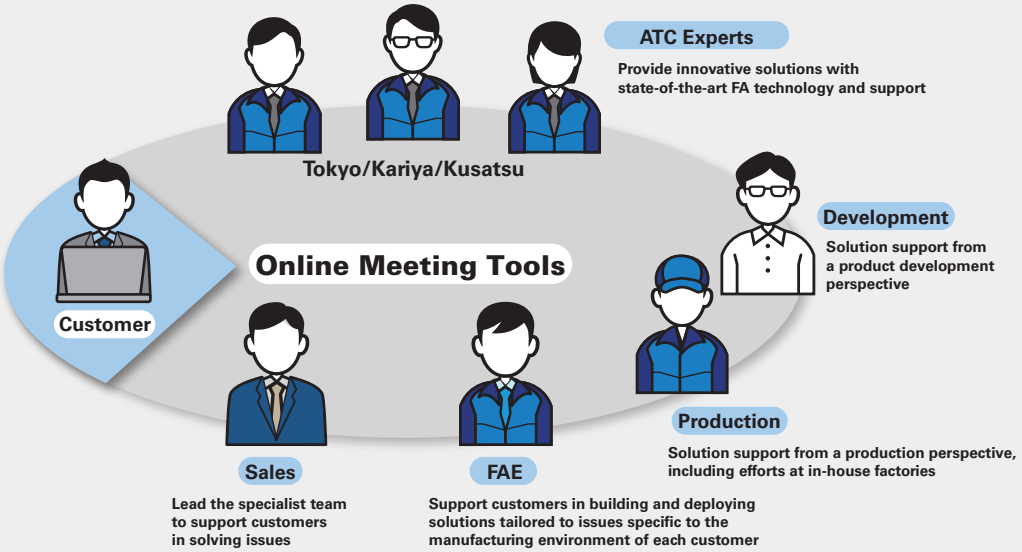
The robotic integrated controller makes it possible to manage robots and control devices with a single piece of software. This allows users to check the performance of all of the equipment before setting up the actual facility, check facilities in operation from a remote location, and repair and maintain facilities. For example, in the event of a problem in an overseas facility, a user can virtually check the facility from a remote location without actually visiting the location, and address the problem with members on-site. Toward a future characterized by advancements in remote work and other new styles of work, we will transform the conventional perceptions of *San Gen Shugi* in manufacturing with our robotic integrated controller and create new value based on the deepened innovative-Automation concept.



Remote maintenance using simulations

Online Support by Manufacturing Environment Specialist Team Serving as a Partner for Front-line Innovation

Sales teams have also begun working to dramatically improve efficiency in resolving customer issues by utilizing digital technology. We have begun to deliver value that can only OMRON can provide as a company working together with customers to solve their issues. For example, we have introduced new forms of sales, including virtual ATC tours and online live communication with ATCs to test customer equipment remotely. In addition, we have utilized digital technology to explore new ways of solving customer issues by forming a global online team of experts in sales, development, ATC operations, production, and other sections from all over the world, with specialist skills and extensive experience. We will continue to take on the challenge of proposing the innovative-Automation concept through this specialist team, combining real-world and online support.



Issues Resolved Remotely by a Global Specialist Team

Electronic and Mechanical Components Business (EMC)

Domains

Corresponding SDGs

Devices and Modules that Support OMRON Growth

The mission of the Electronic and Mechanical Components Business (EMC): "With our devices and modules, create customer value, and contribute to society." EMC is OMRON's core business unit as a global component supplier of relays, switches, connectors and sensors that act as eyes and ears for wide variety of products playing a vital role in switching and connecting devices, for customers across various industries including smartphones, home appliances, automotive and industrial equipment manufacturers.

Managing Executive Officer
Company President, Electronic and Mechanical Components Company

Shizuto Yukumoto

Transformation into a Business That Creates Value for Customers and Continues to Develop Innovative Module Products that Contribute to People and Societies around the World

The EMC segment has faced three major changes in recent years. The first is social changes. Social issues are becoming more diverse and serious, as evident from labor shortages due to the declining birthrate and aging population, and the widening use of electric vehicles and renewable energy as a response to rapid global warming. The second is the change in customer behavior. Technological innovations in AI, IoT, and robotics have advanced at a much faster pace than expected, and customers are looking for partners with technological capabilities. The last change relates to competition. The emergence of multiple new players, particularly in emerging economies, has led to rapid commoditization.

For EMC to continue to grow sustainably in its own right in the face of these changes, it required a significant change in its conventional business model. To that end, since 2017, we have focused on three key initiatives to transform our business into one that provides not only stand-alone devices but also modules that combine multiple technologies, in order to be a partner of choice with the ability to co-create value with our customers.

The first involves redefining the target customers for our modules, in other words, the focus domains. We see the accelerating "shift to smarter equipment" and the "shift to battery-powered and direct-current power sources," as typified by electric vehicles and storage battery systems, as two major trends, and have identified industries related to these trends as our focus domains.

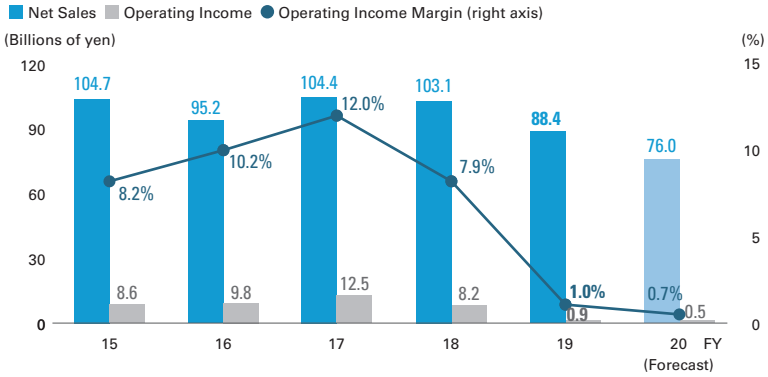
The second is the provision of value through a combination of the strengths we have cultivated. The strengths of the EMC are "devices" such as relays and sensors, and the "technologies" in producing these products, such as fine-processing techniques and software embedding. We are building a framework and organization for developing modules that deliver value to our customers by combining these strengths.

The third is the consolidation of strengths that support the development of modules. Before, the EMC's strengths in technologies, quality, and production, cultivated through providing devices over many years, were scattered globally. By consolidating these elements, we were able to not only reinforce our organizational strengths but improve efficiency. This has resulted in a significant improvement particularly in production efficiency.

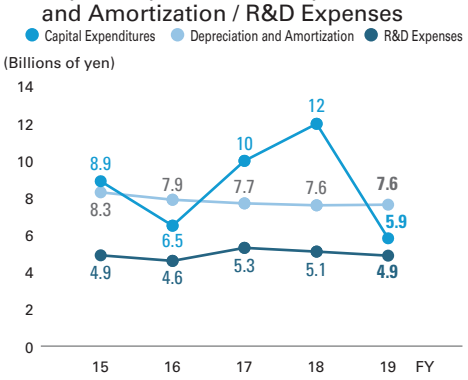
With the current COVID shock, there is a growing demand for smarter equipment, such as non-contact temperature measurement systems and devices that operate without manually activating a switch. EMC will realize its transformation into a business that continues to develop devices and modules that create value for customers and contribute to people's lives and the advancement of societies around the world by supplying core components that help solve social issues through our customers' products and services.

Business Highlights

Net Sales / Operating Income / Operating Income Margin



Capital Expenditures / Depreciation and Amortization / R&D Expenses

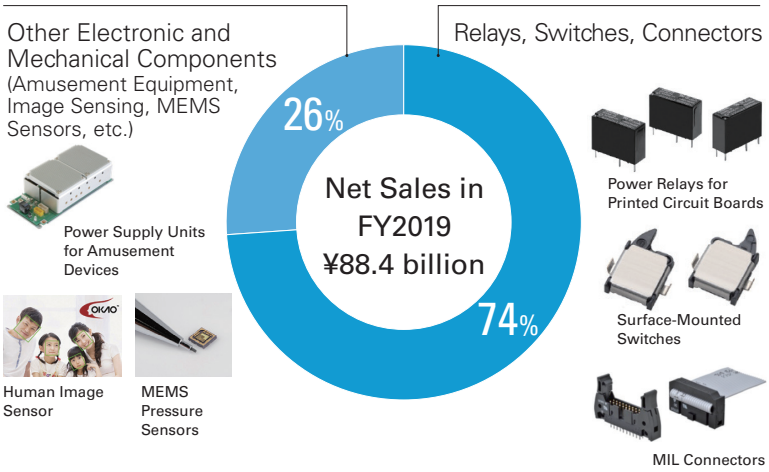


Fiscal 2019 Results and Fiscal 2020 Plan

In fiscal 2019, in China, home appliances, machine tools and automotive demand declined significantly as a result of reduced capital investment caused by lower exports and decline in consumer purchase sentiment. Demand also declined in the Americas and Europe due to weak customer sentiment. Combined with the impact of foreign exchange due to yen appreciation, net sales decreased significantly compared to the previous year. Operating income also decreased significantly compared to the previous year due to the impact of foreign exchange in addition to lower net sales to external customers and OMRON Group businesses.

In fiscal 2020, we expect the impact of the spread of COVID-19 to continue, and that it will take time for a market recovery to be seen in the automobile industry in particular. The business environment for the consumer and commercial products market is also expected to continue to be challenging, and we forecast net sales for fiscal 2020 to be lower than the previous year. Due to the decline in net sales and the impact of yen appreciation, we forecast operating income to decrease compared to the previous year.

Sales by Product



Progress of Sustainability Initiatives

Social Issues to be Solved	Fiscal 2020 Goals
• Solve social issues relating in the domains of FA, Healthcare and Social Solutions	• As a device and module business supporting focus domains, contribute to achieving sustainability goals in each domain

Fiscal 2019 Progress

INPUT

- Number of employees: 7,743
- Research and development expenses: ¥4.9 billion
- Capital expenditures: ¥5.9 billion

OUTPUT

- Net sales: ¥88.4 billion
- Operating income: ¥0.9 billion

OUTCOME

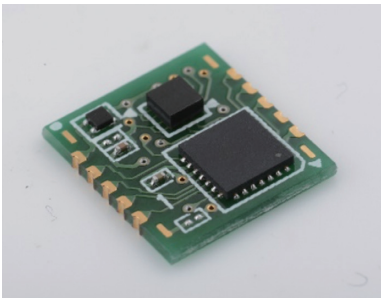
- Advanced sustainability goals in each domain through the provision of devices and modules

Development of Devices and Modules that Create Value for Customers

In EMC, we have cultivated our strengths in "devices" such as relays and sensors, and the "technologies" in producing these products, such as fine processing techniques, algorithm development, and compact software embedding. We are developing devices and modules that create value for customers by combining these strengths. Here are two such examples.

Seismic Sensor That Detects Tremors and Damage to Buildings from Earthquakes

OMRON contributes to enabling people to live safe and secure lives by providing advanced electronic component for equipment and devices that support society.
One such component is the mechanical seismoscope for gas meters installed in homes and commercial facilities. The seismoscope is a key component of a gas meter that detects strong shaking above a certain intensity as an earthquake. It has been used in gas meters for many years as a security function component to prevent secondary disasters such as a fire by automatically shutting off the gas supply in the event of an earthquake.
In Japan, the importance of securing the lifeline after a major earthquake came to be widely recognized after the Great East Japan Earthquake of 2011. With respect to gas meters, there was increasing demand for a system to shut off the gas supply automatically only in the event of an earthquake registering 5 or above on the seismic intensity scale, not only as a safety measure to detect and shut off the gas supply during an earthquake, but also to ensure a stable supply of gas in areas with less damage. To meet this demand, there was a need for a sensor that could accurately determine seismic intensity than the conventional seismoscopes.
To solve this problem, we developed the world's smallest class* seismic sensor that incorporates a 3-axis acceleration sensor with OMRON's unique algorithm. This seismic sensor analyzes the data obtained from the 3-axis acceleration sensor using a unique SI value calculation algorithm to calculate the SI value which enables the scale of the earthquake to be determined with high precision. This enables accurate earthquake determination of 5 or above on the seismic intensity scale, and gas companies can provide a stable supply of gas according to the extent of the damage.
In addition, the compact and low power consumption features of this seismic sensor make it ideal for installation in equipment. This was achieved through a combination of OMRON's in-device edge processing technologies.
Moreover, the sensor comes with a memory function that can record the magnitude of earthquake, for use in further enhancing the safety of gas supply system itself. This will enable gas companies to collect earthquake data and formulate appropriate recovery measures based on the seismic intensity and collapsed building information, and the damage situation, in each area.



Seismic sensor

Gas meter installed with a seismic sensor

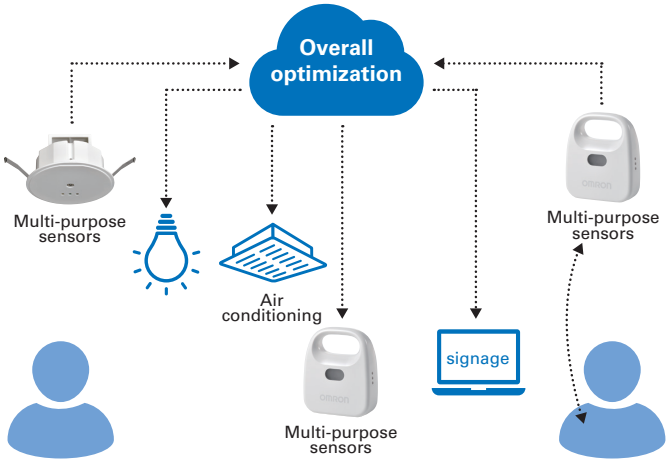
* As a sensor for measuring and outputting SI values. As of November 6, 2015. Internal survey.

Virtual Modules Essential for Creating Comfortable Work Environments While Also Saving Energy

Work styles in which people actively choose their work locations according to their individual circumstances, such as the content and progress of their work, have drawn much attention in recent years. Such styles of work are expected to lead to improved productivity by facilitating communication and collaboration with a diverse range of people and enabling people to handle individual tasks with a high level of concentration. Eliminating the need for fixed seating can also be expected to improve operational efficiency in the office and thus save energy.

However, in the past, air conditioning, lighting and other equipment in a buildings had their own sensors and were controlled independently. To operate office spaces more comfortably and efficiently, and to promote further improvement in productivity and energy saving, it is necessary to develop a system that optimizes the office space overall.

OMRON, Nikken Sekkei Ltd, KYOWA EXEO CORPORATION, WHERE, Inc., and Kanda Tsushinki Co., Ltd. have been working together since April 2020 to develop and test a sensor and facility control network system to save energy and optimize office spaces at the same time. The network system aims to optimize the overall office space by analyzing environmental data on temperature, humidity, brightness level and other conditions obtained from various sensors installed in the office, and then centrally controlling air conditioning, lighting and other equipment.



Overview of the sensor and facility control network system

OMRON's environmental sensor and thermopile motion sensor provide "vision and senses" which are indispensable to this network system. The environmental sensor is an ultra-compact, complex sensing device packed with six sensors. By analyzing the data from each sensor, it can measure eight types of environmental data, including temperature, humidity, illuminance, atmospheric pressure, and discomfort index. The motion sensor uses a unique algorithm to analyze temperature data obtained from non-contact temperature sensors to accurately determine how many people there are within a scope of approximately 13m^2.*

By combining the environmental sensor and the motion sensor and using these as a virtual module, it is possible to ascertain in real time how many people there are in the office and where, as well the conditions of the space around them. This makes it possible to provide a comfortable space that has been optimized overall in which the temperature and brightness levels are adjusted according to actual conditions.

Environmental sensor

Thermopile motion sensor

* Detects conditions in an area measuring 3.6 m × 3.6 m when installed on a 3 m ceiling.

Social Systems, Solutions and Service Business (SSB)

Domains

Corresponding SDGs

Social Solutions

The mission of the Social Systems, Solutions and Service Business (SSB) is "Creating a society in which the people of the world live in safety, security, and comfort." We provide a wide range of terminals and systems, including PV inverters, storage batteries, railway station systems such as automated ticket gates and ticket vending machines, traffic and road management systems, payment systems, and UPS that protect equipment from unexpected power disruption which cause data loss. We also provide total solutions ranging from software development to comprehensive maintenance services to support the social infrastructure.

Managing Executive Officer
OMRON SOCIAL SOLUTIONS Co., Ltd.
President and CEO

Toshio Hosoi

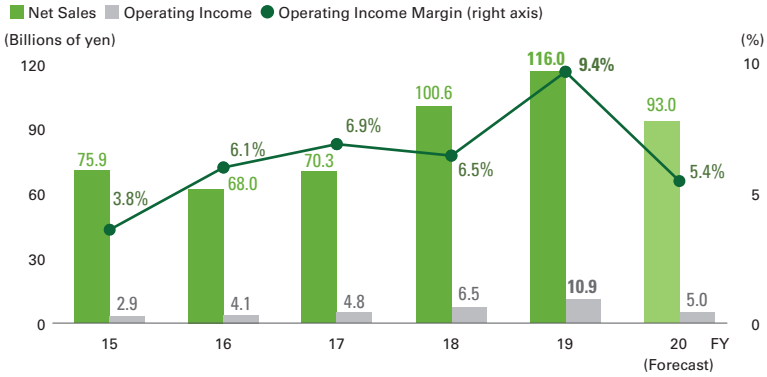
Realizing a Well-being Society Where People Can Continue to Live a Safe, Secure, and Comfortable Life in the New Normal Era

Looking ahead to the future, there are many social issues to be solved in front of us. COVID-19 has changed social structures, lifestyles and even our business styles. Amidst these rapid changes, as a company entrusted with the task of providing social systems, OMRON has to identify new social issues and resolve them in addition to maintaining the social infrastructure.

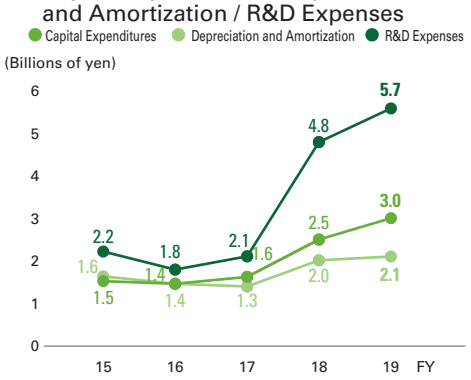
The SSB has defined "labor saving," "resilience," and the "environment" as the three social issues to be solved by 2030. Labor saving is a major issue for maintaining social infrastructure functions. Necessity of labor saving is growing even more in response to the demand of non-contact systems due to the COVID-19 pandemic. Railway companies, our customers, are taking initiatives to maintain and improve their services and optimize their operations by the concept of saving labor through "coexistence of people and machines." The initiatives include automating passenger support desk work handled by railway station attendants and using remote monitoring systems that enable centralized management of multiple facilities. For our initiatives in resilience, we aim to build a "strong" infrastructure assuming that disasters will occur and respond to the increasing frequency and severity of natural disasters on a global scale. We will accelerate our initiatives from the broad perspective of solving region-specific issues to build safe and secure communities. By combining our infrastructure monitoring technologies including water level monitoring to detect river flooding before it occurs with local governments' information and knowledge. In the field of the environment, we take initiatives to promote renewable energy and optimize energy usage in response to climate change caused by global warming. In fiscal 2020, we merged the Environmental Solutions Business, which was under the direct control of headquarters. This resulted in adding energy control technologies cultivated in the development of environmental components such as PV inverters and storage batteries to our existing capabilities in software development and engineering. Leveraging this additional capability, we contribute to creating a sustainable society by creating systems for managing and coordinating energy demand on a regional basis, as well as sharing energy in the event of a disaster. The SSB will continue challenging to realize a safe, secure, and comfortable society required in the new normal era by solving these social issues through social automation, which combines our automation technologies based on AI, IoT, and robotics and providing total solutions in the fields of energy, transport, lifestyle services, and communities.

Business Highlights

Net Sales / Operating Income / Operating Income Margin



Capital Expenditures / Depreciation and Amortization / R&D Expenses

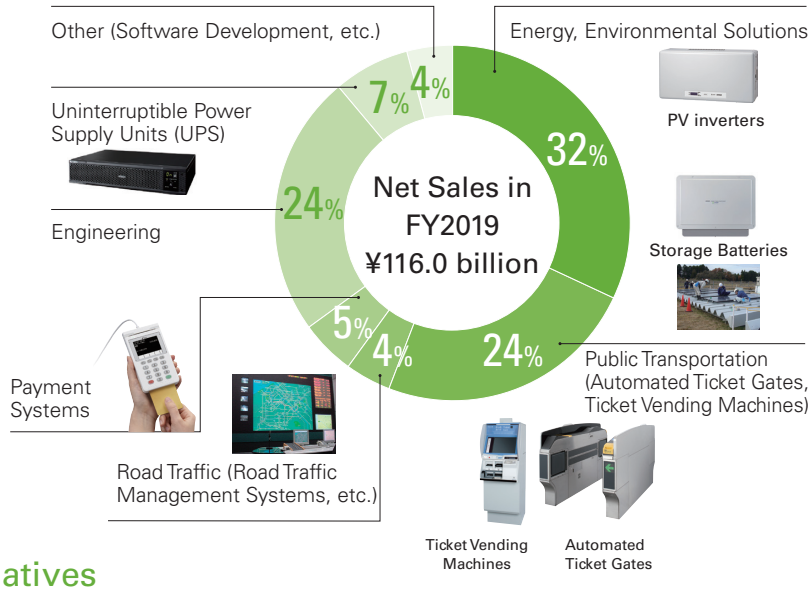


Fiscal 2019 Results and Fiscal 2020 Plan

In fiscal 2019, the SSB segment experienced strong demand for upgrades in the Public Transportation and Road Management Systems Business. In response, we proposed solutions tailored to the needs of our customers. In addition, the Environmental Solutions Business reported strong performance for the year, experiencing growing demand for storage battery systems. Net sales increased significantly compared to the prior fiscal year. Operating income increased significantly year on year, mainly due to higher net sales and improved profitability.

In fiscal 2020, we expect to see significant changes in investment among customers in the Public Transportation Business due to the impact of lower travel revenues. Although the Energy System Components Business is seeing a growing market for storage battery systems, the impact of the spread of COVID-19 has limited customer business activities, likely resulting in weak sales for the segment. As a result, we forecast net sales for fiscal 2020 to be lower than the previous year. Due to the decline in net sales, we forecast operating income to decrease year on year.

Sales by Product



Progress of Sustainability Initiatives

Social Issues to be Solved	Fiscal 2020 Goals
• Contribute to achieving a smart society in which people around the world can continue to lead a safe, secure, comfortable, and clean life • Global warming from CO_2 emissions • Slow growth of the renewable energy market	• Create driving safety support systems and technologies • Cumulative shipped capacity of solar power/storage battery systems: 11.2GW • Build the energy resource aggregation business using solar power/storage battery systems (Japan)

Fiscal 2019 Progress

INPUT

- Number of employees: 3,237
- Research and development expenses: ¥5.7 billion
- Capital expenditures: ¥3.0 billion

OUTPUT

- Net sales: ¥116.0 billion
- Operating income: ¥10.9 billion
- Launched tailgating detection function for the driving safety support system
- Cumulative shipped capacity of solar power systems: 9.6GW
- Cumulative shipped capacity of storage battery systems: 438MWh

OUTCOME

- Environmental contribution by SSB products and services: 898kt-CO_2

SDGs Goal 7.1.2

SDGs Goal 13.2.1

Promoting the Development of Resilient Communities That Are Resistant to Disasters

In recent years, floods and landslides caused by torrential rain and other natural disasters are increasing in frequency and severity in Japan. Previous natural disaster countermeasures were formed by systematic preparations and set procedures based on a tendency identified from past observation data. However, the recent natural disasters are beyond our expectations and they continue to set new records in scale. It is getting difficult to limit the damage using conventional countermeasures. Each local community needs to build a resilient system that can cope with events exceeding expectations, and to minimize the damage by making decisions and acting autonomously. This is becoming a social issue.

This article introduces our initiatives; the next-generation of disaster prevention "Visualization" that we are working on in cooperation with Maizuru City in Kyoto Prefecture.

Next-Generation Disaster Prevention: Visualization

To build resilient communities, it is necessary to first detect risks that could cause extensive damage to each region in real time, and then visualize them on a community-wide basis. However, local governments, which are responsible for implementing these measures are facing financial difficulties due to aging and depopulation. We therefore set out to develop a compact monitoring system for visualizing regional disaster prevention information, narrowing down the functions of sensors for detecting risks by utilizing our own assets.

We are now in the process of incorporating the monitoring system into Maizuru City's portal site and setting up the system within the city. By combining data from tide gauges, river water level gauges, rain gauges and other disaster-prevention sensors installed throughout the city with the map data of the local government, the system allows local government employees and residents to view all disaster prevention-related information on one screen. This advanced initiative has been selected as a model for enhancing national resilience* under the Cross-ministerial Strategic Innovation Promotion Program of the Cabinet Office.

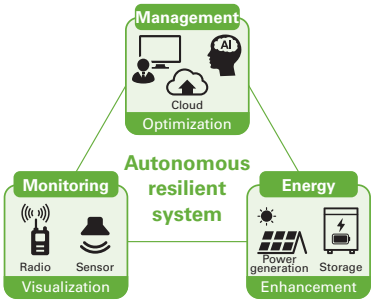
Monitoring Business Department
Business Development HQ
Toshiyuki Kinami

Monitoring system being developed with Maizuru City

Aiming for Realizing an Autonomous Resilient System

The benefits of a resilient system are not only to minimize damage, but also minimize the burden on local government employees and residents in the event of a disaster so that they can focus on a quick recovery. To build an autonomous resilient system, it is necessary to combine the "visualization" function to monitor risks in real time, "enhancement" to supply energy required for supporting life in an emergency, and an "optimization" function to manage the operations of the region.

We contribute to the creation of a sustainable society by introducing autonomous resilient systems to local governments in Japan.



Autonomous resilient system which the SSB is building

Having been selected as a SDGs Future City, Maizuru City is aiming for a community, where people can enjoy interaction, a convenient and well-being country life. Developing a safe community by solving disaster prevention issues is the cornerstone of this initiative. We would like to further promote this initiative in collaboration with OMRON SOCIAL SOLUTIONS.

Manager of Flood Control Sewerage Construction Division,
Department of Water and Sanitation, Maizuru City

Mr. Sunao Higashiyama

* Realization of an information system that ensures each citizen can evacuate safely and make decision for an early recovery in the event of a large-scale disaster.

Lifestyle Service Automation for Improving Services and Saving Labor

In Japan, the labor shortage caused by the declining birthrate and aging population is becoming a serious issue year by year. Particularly in the hotel industry, where the number of hotels has increased rapidly due to the continuing demand for inbound tourism, labor shortage has become a serious social issue. OMRON entered the automation business in the area of hotel operations in 2018. With the aim of streamlining and saving labor in hotel operations, we have developed and introduced "Smare," a self check-in terminal. Recently, the necessity of preventive measures against COVID-19 increased demand for further contactless service through automation.
The article below introduces the application check-in model introduced at APA HOTEL.

It's All for Our Customers: Developing an Application Check-in Model that Enables a High Level of Hospitality

APA HOTEL, a leading company in the hotel industry, has adopted Smare. They consulted us for solutions to improve the service to their customers. This led to developing the app check-in model for APA app subscribers. The current self check-in service for their registered members took time in its procedures. To solve this issue, we need to combine APA HOTEL's knowledge and our automation technologies to realize their "Always Pleasant Amenity (APA)" concept. The application check-in model was the result of this collaboration, shortening the waiting time to the last one second and escorting customers to their rooms which realized a higher level of hospitality.
The application check-in model does not merely reduce check-in time; it also minimizes the risk of infections from human contact. By eliminating the need to hand over room keys, customers do not need to wait at the front desk and can go directly to their rooms. Furthermore, by streamlining front desk work, it frees up the staff's time which they can devote to entertaining the customers.
We will continue to advance our automation business in the hotel industry by developing remote and centralized hotel management system, and robots that can clean and monitor. Through these initiatives, we will contribute to solving the labor shortage issues and offering lifestyle services with enhanced safety, security, and comfort.

Business Development Department, Social Solution Business HQ
Ryoji Ohashi

Application Check-in Model

As indicated in our company name, APA HOTEL aims to constantly provide safe, secure and comfortable accommodation services for customers.
We have worked on cutting-edge initiatives with OMRON SOCIAL SOLUTIONS ever since we opened our first APA HOTEL in 1984. In developing the application check-in model, OMRON showed understanding towards our goal and motto: "Time Is Life." OMRON and our staff considered how to shorten the check-in speed as much as possible and realized a system that not only affords comfortable, but also stress-free check-in for customers and reduced the risk of COVID-19 infection. In addition to the check-in model, I am looking forward to working together to realize a more comfortable accommodation service together.

Director, IT Department, APA HOTEL
Mr. Tomonari Kozuka

Healthcare Business (HCB)

Domains: **Healthcare**

Corresponding SDGs:

The mission of our Healthcare Business is "To help realize healthy and comfortable lives for people around the world." By living up to this mission, we have developed healthcare products and services with a focus on usability and accuracy of readings. This is intended to allow anyone to take measurements easily and correctly, with accuracy that ensures reliability for medical use. OMRON has achieved certification for medical use for a variety of devices in various countries, including blood pressure monitors, digital thermometers, and nebulizers (devices that deliver asthma medication through inhalation by patients). Moreover, OMRON also provides services that are compatible with each country's/region's social infrastructures and healthcare system, which varies from country to country. These products and services are now available in more than 110 countries across the world.

Managing Executive Officer
OMRON HEALTHCARE Co., Ltd.
President and CEO

Isao Ogino

Achieving Zero Events Aimed at Eliminating Cerebrovascular / Cardiovascular Diseases

Currently, some 1 billion people worldwide are reported to suffer from hypertension. In Japan, this number is estimated to be 43 million. The most frightening aspect of hypertension is that disease progression usually occurs while symptoms remain unnoticed, yet it still can cause serious cerebrovascular or cardiovascular conditions such as strokes or heart attacks.

To prevent the incidence of these serious diseases arising from high blood pressure, OMRON has been advocating the use of blood pressure monitoring at home for more than 40 years, in collaboration with medical professionals. At the same time, OMRON has worked to raise public awareness of hypertension treatment and prevention through home blood pressure monitoring. Despite this rising awareness, ischemic heart disease still remains the leading cause of death worldwide, with stroke being the second leading cause.

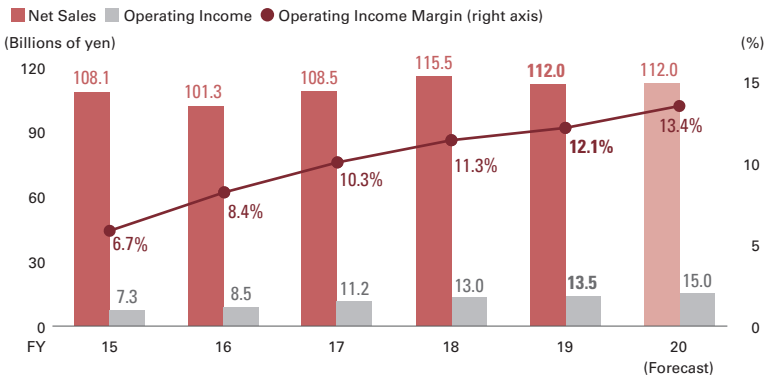
As such, we have set forth the vision for our Cardiovascular Business: "Reducing the incidence of cerebrovascular and cardiovascular disease caused by high blood pressure to Zero (Zero Events)" in 2015. Since then, we have been committed to supplying devices and services that are useful for treatment and prevention of hypertension worldwide. In recent years, OMRON has released many innovative devices, such as a wearable watch-type blood pressure monitor that allows users to check their blood pressure anywhere at any time and quickly detect abnormal conditions, and a blood pressure monitor with an ECG function that enables simple monitoring of blood pressure and electrocardiogram data at home. Both of these devices have been certified as medical equipment. In 2016, OMRON globally launched a health management app, named "OMRON connect," which enables data measured with home-use devices to be easily recorded and displayed on a user's smartphone. So far, this app has generated more than 1.9 million downloads. Moreover, the measurement data collected by OMRON connect is compatible with apps from various service providers worldwide. To keep up with the future advancement of healthcare systems and corporate wellness, OMRON is committed to developing services that use these devices, along with the collected data, to prevent progression of chronic diseases and assist in treatment. The challenge now is putting these services into practice throughout the world. The services include remote medical consultation support services, specific health guidance support service, and lifestyle improvement support service.

The global spread of COVID-19 has had a profound impact on social infrastructure, as well as people's values and lifestyles. In the midst of these changes, the importance of health management at home, which we have continuously advocated, is being seen in a new light. As such, we will proactively collaborate with our partners to create new services to address emerging issues, such as shortages of medical professionals and medical resources, and the need to avoid the risk of secondary infections arising from hospital visits.

* Source: World Health Organization "The top 10 causes of death"

Business Highlights

Net Sales / Operating Income / Operating Income Margin



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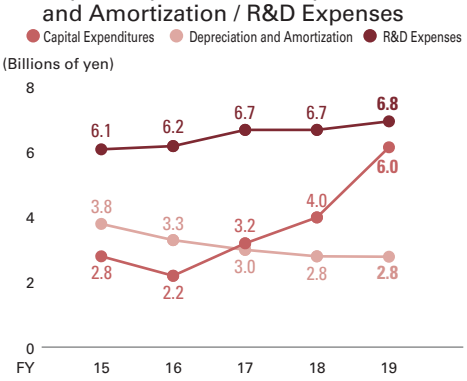
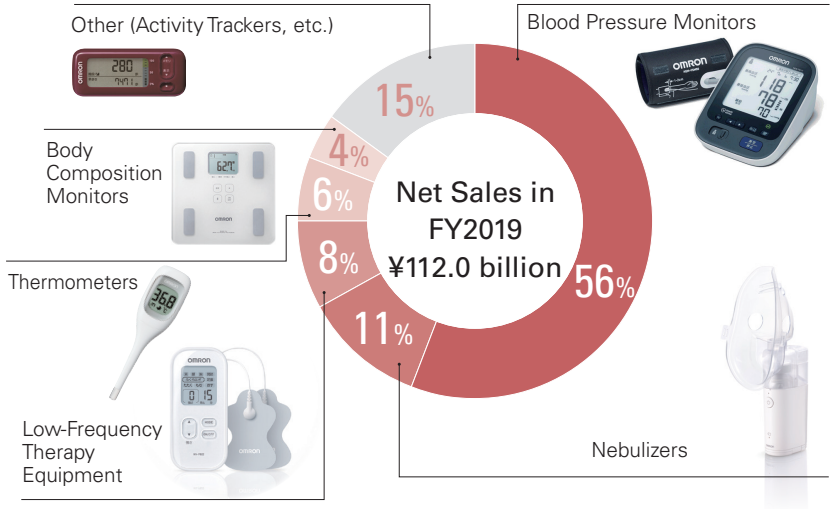


Fiscal 2019 Results and Fiscal 2020 Plan

In fiscal 2019, the demand for blood pressure monitors in China, Europe and Asia remained firm. Meanwhile, demand in Japan was sluggish due to the increase in consumption tax and other factors, while in North America, demand declined due to the trade friction between the United States and China. In the fourth quarter, COVID-19 had a global impact. Combined with the negative effects of the yen's appreciation, net sales decreased year on year. Despite this impact from the foreign exchange situation, operating income increased year on year, mainly because of productivity improvements and efficient use of fixed costs.

In fiscal 2020, we anticipate increasing demand for blood pressure monitors and thermometers, in response to the growing need for health management to counter the impact of COVID-19. Further, we intend to expand our online channels for sales amid restrictions on non-essential travel outside the home. On the other hand, we anticipate a negative foreign exchange impact stemming from a strong yen. As a result, we project that net sales for fiscal 2020 will be at the approximate level of the previous year. We expect operating income to increase significantly, driven by improved gross profit margin resulting from increased sales of high-value-added products.

Sales by Product



Progress of Sustainability Initiatives

Social Issues to be Solved	Fiscal 2020 Goals
● Increased incidence of brain diseases and cardiovascular diseases attributable to hypertension ● Increased worldwide prevalence of asthma and other respiratory diseases	● Blood pressure monitor sales: 25 million units/year ● Development of analytical technologies to continuously track blood pressure fluctuations ● Nebulizer and wheeze detector sales: 7.65 million units/year

Fiscal 2019 Progress

INPUT

- Number of employees: 3,758
- Research and development expenses: ¥6.8 billion
- Capital expenditures: ¥6.0 billion
- Number of operating countries: More than 110

OUTPUT

- Net sales: ¥112.0 billion
- Operating income: ¥13.5 billion
- Blood pressure monitor sales: 20.01 million units/year
- Began clinical trials using wearable blood pressure monitors
- Nebulizer and wheeze detector sales: 3.44 million units/year
- Developed innovative devices and services, and actively promoted education for medical professionals and consumers, in order to raise their awareness regarding the importance of Zero Events
- Promoted wider use of home blood pressure monitors in emerging countries (especially India) by holding "OMRON Academy" education programs for doctors in 12 locations and blood pressure monitoring workshops for consumers in 10 cities across India

OUTCOME

- Reduced the incidence of cerebrovascular and cardiovascular diseases by wider use of home blood pressure monitors in emerging countries (especially India)

SDG 3.4.1

Seeking Continuity of Care for Hypertension Patients

The COVID-19 pandemic brought about new issues, which accelerated the widespread practice of telemedicine globally. However, patients with hypertension, diabetes, or other chronic diseases must still pay regular visits to hospitals or clinics and have ongoing treatment. But by doing so, these patients have the risk of getting seriously ill with COVID-19, which is likely to keep them away from regular treatment visits.
OMRON is developing a remote patient monitoring service that allows patients to measure vital signs at home using our blood pressure monitor, ECG monitor, and/or a body composition monitor with scale and share the data with their physicians/nurses in a timely manner. This helps patients to receive appropriate advice from their physicians from the comfort of their homes, without the need for visiting a hospital. Going forward, we will continue to propose new approaches to telemedicine that are adaptable to the upcoming "new normal," as we seek to contribute to the management and prevention of chronic diseases.

Remote Patient Monitoring System for Hypertension

In August 2020, OMRON launched a remote patient monitoring (RPM) system for hypertension, called VitalSight™ at the New York-based Mount Sinai Hospital, one of the leading and most respected hospitals in North America. With VitalSight™, which is part of our telemedicine initiatives, patients with hypertension can directly send their daily blood pressure readings and body composition data measured at home to the hospital's electronic medical record system via the dedicated communications hub or "OMRON connect" health management app. This enables both patients and their physicians/nurses to share the patient's data. The deployment of this RPM system enables physicians/nurses to keep track of their patient's day-to-day conditions, thus helping them choose a more effective therapy suitable for each patient. Patients, in turn, can share their health data with their physicians on a daily basis, which helps motivate them to become more involved in treatment. This contributes to improved medical compliance and continuity of treatment.
OMRON has been strengthening its data service business in the United States in response to the launch of telemedicine reimbursement under Medicare, which is the federal health insurance program for American citizens or 5-year legal residents who are 65 or older. Going forward, we will continue to present new RPM-based hypertension treatment solutions in North America, where nearly one in two adults has high blood pressure.

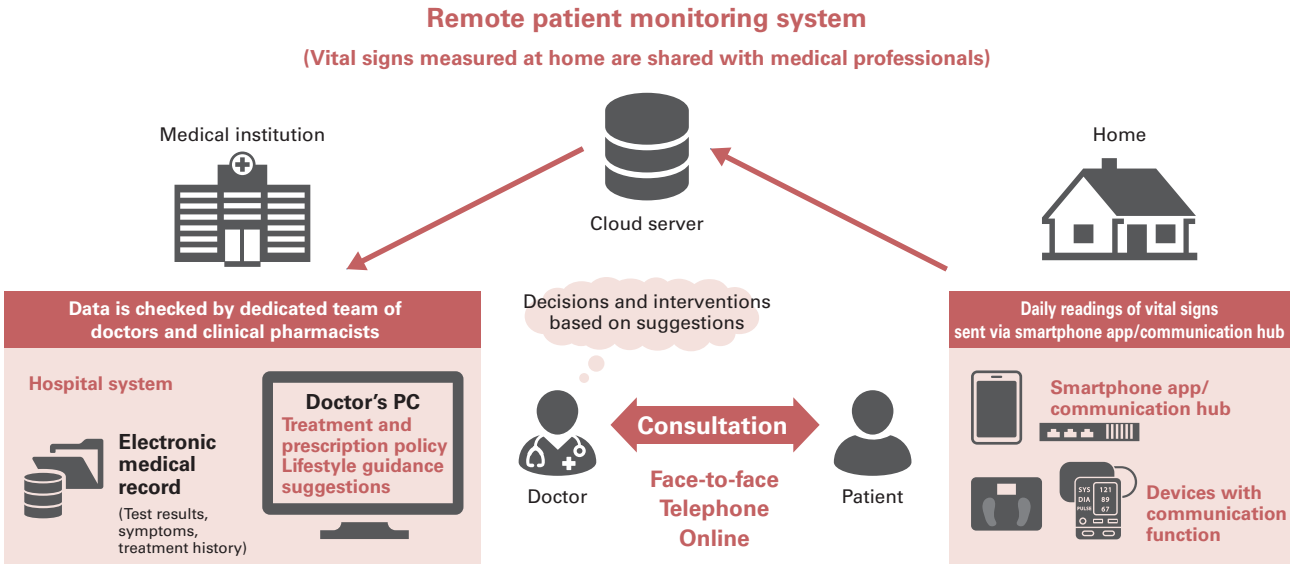
Receiving remote consultation services (illustration)

Example of a VitalSight patient kit

Online Hypertension Consultation Support Service

In Japan, online consultation is regarded as supplementary to face-to-face consultation. Presently, of the 43 million hypertensive patients, those who are undergoing treatment and have their blood pressure appropriately controlled account for a mere 27% (12 million), while those who are receiving treatment but are not having their blood pressure controlled properly account for 29% (12.5 million). While 11% (4.5 million) are leaving their condition untreated even though they know they have hypertension, 33% (14 million) are not even aware that they have hypertension.
According to those who are aware that they have hypertension but are not receiving treatment or not having their blood pressure controlled properly, hospital visits are a burden to elderly people, and those in their prime lack the time to visit a clinic. These are some of the factors that cause them to discontinue treatment of hypertension. To address those issues, OMRON launched an online hypertension consultation support service, called "telemedEASE BP™" in May 2019 through partnership with an incorporated association called telmedEASE. This system provides a one-stop service for online hypertension management, allowing patients to perform all tasks from day-to-day blood pressure tracking to making a doctor's appointment, receiving a diagnosis and prescription, receipt of medication, and even the payment of healthcare fees from the patient's home or office. Due to the accelerated spread of COVID-19, the effectiveness of telemedicine consultations has been widely recognized in Japan as well, leading to hopes for the easing of regulations.
By taking the future of hypertension care into consideration, OMRON is determined to accelerate the development of devices and services that can contribute to more effective treatment of hypertension in Japan as well as the United States, Europe and Asia.

Overview of the Remote Patient Monitoring System



Comments from an Employee in Charge of the Remote Patient Monitoring System in the United States

Omron Healthcare (USA)
Client Success Manager
- VitalSight™

Adriana Benassi

In response to the global increasing demand for telehealth, OMRON Healthcare has begun to develop the VitalSight™ remote patient monitoring system for hypertensive patients, under the initiative of the new business development team in the U.S. This system is intended to provide both patients and physicians with innovative, effective, and efficient hypertension management solutions.
Patients with hypertension can share their blood pressure readings measured at home with their physicians, thus receiving continuous treatment from their home. With the unprecedented impact of COVID-19, this capability has become more important, making it urgently necessary to launch VitalSight™ as soon as possible. In response, OMRON Healthcare's New Business Team has collaborated with many groups within Mount Sinai Hospital in New York, specifically the organization's Population Health and Clinical Pharmacist teams, to launch the service in August. This service encourages patients to actively participate in their blood pressure management along with their physicians, enabling proactive intervention before the incidence of a cardiovascular event, such as stroke. This, we believe, should help realize our vision of "Going for Zero," intended to eliminate cardiovascular diseases caused by high blood pressure. Going forward, we will further extend our collaborations with more medical partners. At the same time, we will continue challenging ourselves to develop VitalSight™ into a leading service model that will drive OMRON Healthcare's development of innovative remote patient monitoring solutions.

Comments from a Hospital which Adopted the Remote Patient Monitoring System in the United States

Mount Sinai Hospital
SVP and Chief Medical Officer

Dr. Rob Fields

The ability to monitor patients at home during the pandemic – and on an ongoing basis – is critical. Our collaboration with OMRON Healthcare helps make patients active participants in their own health care and extends the reach of clinicians, who receive a continuous stream of their patients' real-time health data so that they can proactively intervene as necessary. Additionally, we are focusing first on our most vulnerable patients, who bear the consequences of disparities in care – in part, due to lack of technology access. This program requires no technology and comes at no cost for the device, with little-to-no cost for service.