

Murata

value report

2019



muRata
INNOVATOR IN ELECTRONICS

Murata's DNA

Murata's DNA has been passed down through the generations since its founding. As society has changed with the times, we have gone through a number of episodes from which we acquire wisdom even today. These have become our DNA, forming the foundation of Murata today.

Episode 1

"Pursuit of originality"

"How should we act if our interests conflict with those of our competitors? Clients will not make orders unless we offer lower prices than competitors, but we will not generate any profit after going so far as to win orders, and our competitors will also suffer."

When Akira Murata, the founder of Murata Manufacturing Co., Ltd., began helping out with the family business, he carried out walk-in sales and concluded negotiations with new client in Kyoto, in an attempt to win praise from his father. His father, however, strongly opposed Akira's action. Akira's method would not only prevent the growth of their own company, but also make coexistence and mutual prosperity with competitors impossible. Akira did not give up and had multiple discussions with his father, whereby he was permitted to approach new clients on the condition that he "offers something that the others do not offer."

Murata offers products that competitors do not offer, to people that need them. This marked the start of Murata's "pursuit of originality," which has led to originality across all aspects of our business, including our technology development capabilities, monozukuri (manufacturing) capabilities, networks, and organizational cooperation to integrate these elements.

Episode 2

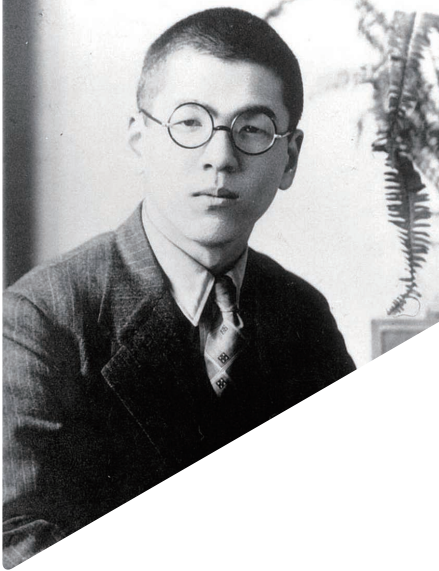
"Shared prosperity and gratitude with stakeholders"

"I have been sickly since I was a child and could not attend school as much I wanted to, but people taught me and supported me, so I don't think I got where I am solely through my own abilities."

As he continued making products with a focus on originality, customers gradually began to come to Akira with various issues. He produced products that solved customers' issues after much trial and error, while visiting multiple research laboratories to ask for advice and then obtaining support from many stakeholders. Many customers were grateful for his efforts, but Akira himself also felt gratitude toward those around him. Akira sincerely thanked and paid respect to experts who assisted him in areas where he was lacking, employees who strive together with him, and customers who encouraged him.

It would be impossible to continue Murata without our gratitude toward stakeholders and mutual prosperity with them. The development of Murata has always been a reflection of our gratitude toward many stakeholders.

In 1954, Akira established the Murata Philosophy in order to make clear his many thoughts on management through his own business experience, establish Murata with people with the same vision, and move toward the future based on the vision.



Murata Philosophy

We contribute to the advancement of society
by
enhancing technologies and skills
applying scientific approach
creating innovative products and solutions
being trustworthy
and, together with all our stakeholders,
thankful for the increase in prosperity.

Innovator in Electronics

In 50 years' time, it is likely that most of the employees currently working at Murata will no longer be with us. At Murata, we aim to be a company that works with stakeholders to solve social issues through all ages.

Whether we can achieve this, however, depends on what we do now. We need to ask ourselves what we should leave behind, what we should reform, and what we should aim for. To ensure that our founder's vision is passed on to future generations, Murata's identity "Innovator in Electronics" is shared among all employees of the Group around the world.

This slogan reflects our aim to become a leading innovator in the electronics industry. It also expresses the attitude of each employee as an "innovator" transforming his or her own work into better one.

Murata's purpose is to explore our originality with intelligence, build a wider and deeper foundation for an electronics society, and contribute to enriching people's lives in the truest sense.

Be committed to being a leading global innovator in the electronics industry.
Take the initiative in working toward a better environment and society.

This is our mission at Murata.
Looking ahead, the ideas incorporated in the Murata Philosophy will be passed on to future generations, and we will continue creating new value through the original development of electronics with unlimited potential.



Celebrating our 75th anniversary

This year, we celebrated the 75th anniversary of the founding of Murata Manufacturing Co., Ltd.

I am both delighted and proud that we were able to celebrate our 75th anniversary while operating in the field of electronics, which has undergone rapid change.

Our founder Akira Murata was “honest to a fault” in his approach to his work, while “tirelessly” making adjustments to tackle issues. Obtaining support from many people from time to time, he succeeded in developing and expanding Murata’s businesses. Subsequently, our DNA was inherited by people sympathetic to Akira’s attitude, leading to the development of the corporate culture of Murata today.

Looking ahead, our aim is that each employee will retain the Murata’s DNA while contributing to the development of global society through our various activities.

Chairman of the Board and President



Editorial policy

Murata Manufacturing Co., Ltd. published its Environmental Report in 2002, and has been disseminating the Company’s information since 2010 in the Murata Report, a brochure that combines its Company guide, CSR Report (Corporate Social Responsibility Report) and Annual Report (Financial Data).

With stakeholder dialogue being an important consideration, Murata decided to publish an “Integrated Report” from 2018 in order to better convey Murata’s activities to improve corporate value over the medium to long term. In addition to the growth strategies to realize the future envisioned by Murata, CSR activities that the Company has been continuously implementing are described as resource strategies in this report.

We created and edited this report by summarizing the main points with the aim of communicating Murata’s activities in a concise manner. Detailed financial data and information on CSR activities that cannot be included in this report, as well as environmental data by each business site, are posted on the Murata website. Please refer to the tool map on the right page to obtain required information.

Term of this report
Between April 1, 2018 and March 31, 2019
* Some activities taking place in or before 2018 or in or after April 2019 are covered in the report as well.

Organizations reported on
Murata Manufacturing Group
(Murata Manufacturing Co., Ltd. and 92 subsidiaries inside and outside of Japan)

Reference guidelines
ISO26000, The International Integrated Reporting Council (IIRC) “The International Integrated Reporting Framework,” Ministry of Economy, Trade and Industry “Guidance for Collaborative Value Creation”

CSR-related policy list
CSR Charter/Corporate Ethics Policy and Code of Conduct/ Human Rights and Labor Policies/EHS Disaster Prevention Policy/Purchasing Policies/Quality Policy/Disclosure Policy/Basic Policies for Activities to Contribute to Society and Local Communities/Basic Policy for Prevention of Cartels and Bribery

Future forecasts, plans and targets
In addition to past and current performance, this report contains future forecasts, predictions, plans, and other information. Such forecasts, predictions, and plans are assumptions or judgments based on information available at the time of publication, and hence include uncertainties. Accordingly, the results of future operating activities and future phenomena may differ from forecasts, predictions, and plans in this report.

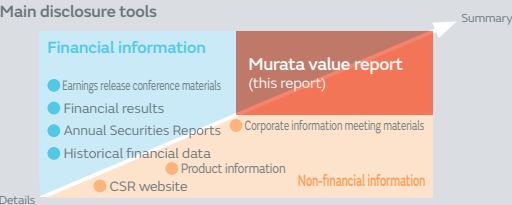
* In this report, “Murata” refers to the Murata Manufacturing Group as a whole, and “Murata Manufacturing Co., Ltd.” to Murata Manufacturing as a standalone company.

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Tool map

Murata disseminates a variety of information using various tools to communicate with its stakeholders. In addition to the information contained in this report, a variety of information on Murata’s products and environmental activities can be found on our website. We will continue to proactively disclose information to allow our stakeholders to better understand Murata.



Corporate website

- Top page <https://www.murata.com/en-global>
- Financial information <https://www.murata.com/en-global/ir>
- Non-financial information <https://www.murata.com/en-global/about/csr>

About Murata

History of value provision

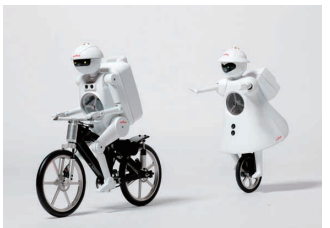
The evolution of electronics has been enriching people's lives and realizing various dreams. Murata's electronic components have been among the driving forces of that history. What was necessary for that era? What symbolized dreams for the next era? It can be said that electronic components represent the times, and such items also quietly begin to tell of the future.



History of robots

Murata has taught many children and other people about the workings of electronic components using robots equipped with Murata electronic components.

- 1991 First MURATA BOY
- 2005 Second MURATA BOY
- 2008 MURATA GIRL
- 2014 Murata Cheerleaders



MURATA BOY and MURATA GIRL

1970s and 1980s

CB transceiver boom in the US, and expansion of markets for audio-visual equipment, car phones (mobile phones), and information equipment in Japan

- 1975 Launch of GIGAFIL dielectric filter for microwave
- 1977 Commercialization of ceramic resonator CERALOCK
- Around 1986 Commercialization of chip ferrite beads
- 1989 Commercialization of multilayer LC filters



Chip ferrite beads

2010 and after

Expansion of telecommunications field centered on smartphones, and progress in the vehicle electrification

- 2012 Development of multilayer ceramic capacitor in 0201 (0.25×0.125mm) size
- 2017 Enhancement and reinforcement of battery business



Multilayer ceramic capacitors

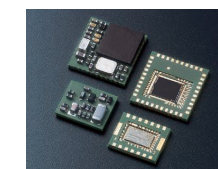
77,571 persons

1,575.0 billion yen

1990s and 2000s

Arrival of the age of the Internet owing to the miniaturization of mobile phones and the spread of personal computers

- Around 1997 Commercialization of SWITCHPLEXER
- Around 2000 Commercialization of Bluetooth® modules
- 2004 Development of multilayer ceramic capacitor in 0402 (0.4×0.2mm) size
- 2005 Commercialization of MEMS gyro sensors



Bluetooth® modules

1940s

Establishment

Spread of communication equipment after the start of commercial radio broadcasting

- 1944 Murata Manufacturing founded
- 1949 Japan's first mass production of temperature compensating barium titanate ceramic capacitors for radios



Barium titanate ceramic capacitor

1950s

Spread of black-and-white television and expansion of telegraph and telephone market

- 1950 Murata Manufacturing Co., Ltd. established
- 1953 Began manufacturing ceramic disc capacitors
- 1955-56 Established Murata Technology Research Laboratory Co. and moved thereto
- 1959 Launch of ceramic semiconductors "POSISTOR" PTC thermistors



PTC thermistors "POSISTOR"

1960s

Launch of color television broadcasting and increased demand for electronic components as the Tokyo Olympics drove economic growth

- 1962 Commercialization of ceramic filters for communications equipment
- 1966 Launch of multilayer ceramic capacitors
- 1967-69 Established mass production system of multilayer ceramic capacitors



Multilayer ceramic capacitors

— Net sales — Number of employees at end of year

* Consolidated basis

1944 1950 1960 1970 1980 1990 2000 2010 2018 (FY)

Bluetooth is a trademark of Bluetooth SIG, Inc.

About Murata

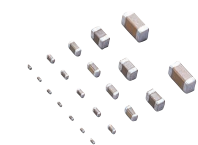
Murata products

Murata electronic components contribute to enriching people’s lives through their use in all sorts of electronic devices in everyday life, including radios, televisions, and mobile phones. Murata will also continue offering new value as an innovator in the growing electronics field such as automobiles, energy, and health-care.

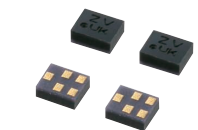
Murata products supporting the evolution of electronics

Murata electronic components have supported the evolution of devices through miniaturization and increased functionality. For example, approximately 800 capacitors, a mainstay Murata product, are used in a single smartphone, and approximately 8,000 are used in a single automobile.

Quantity used and global share of Murata products



Chip multilayer ceramic capacitors
Indispensable to electronic circuits, these components serve to store and adjust flows of electricity.



SAW filters
The filters that extract only the required portion of a radio signal are key devices in high frequency circuits.



Noise suppression products EMI suppression filters
These components eliminate external noise and protect delicate electronic circuits.

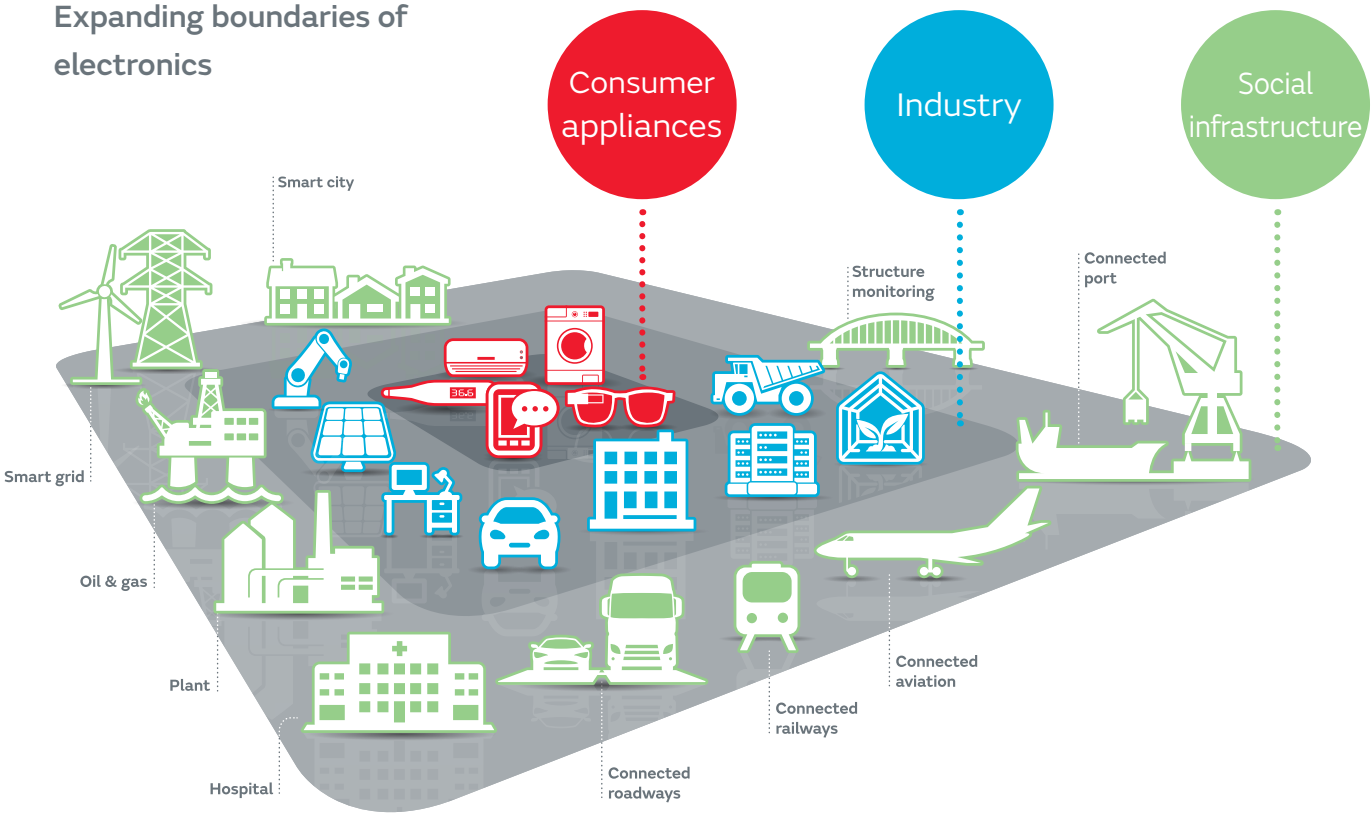


Connectivity modules
These components allow various devices to access the Internet via radio signals.

Quantity used for each finished product		Murata's global share
Smartphone	Automobile	
800	8,000	40%
25	—	50%
100	200	35%
1	1	55%

*Quantity used based on high-performance product

Expanding boundaries of electronics



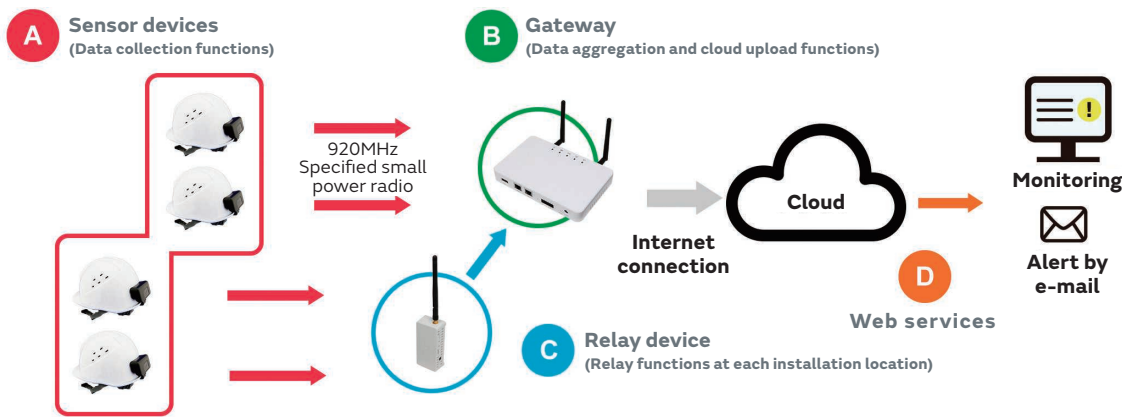
New challenges

Launch of worker safety monitoring systems utilizing sensor technologies and IoT
~Contributing to workers' health management by monitoring biological information and the working environment~

It is becoming increasingly necessary to develop a safe and comfortable working environment in the construction industry as the number of construction workers declines owing to the falling population of Japan and higher average age of workers at construction sites. Furthermore, the lack of awareness of deteriorating working environments has become an issue at construction sites in recent years, as the summer heat

has become increasingly intense, resulting in onset of heat stroke, excess fatigue, and ill health. Accordingly, Murata Manufacturing Co., Ltd., with expertise in offering sensor technology and system solutions, collaborated with TODA CORPORATION to develop a system for monitoring biological information and working environments in August 2018. Looking ahead, we will continue using technologies to address such social issues.

Overview of worker safety monitoring system

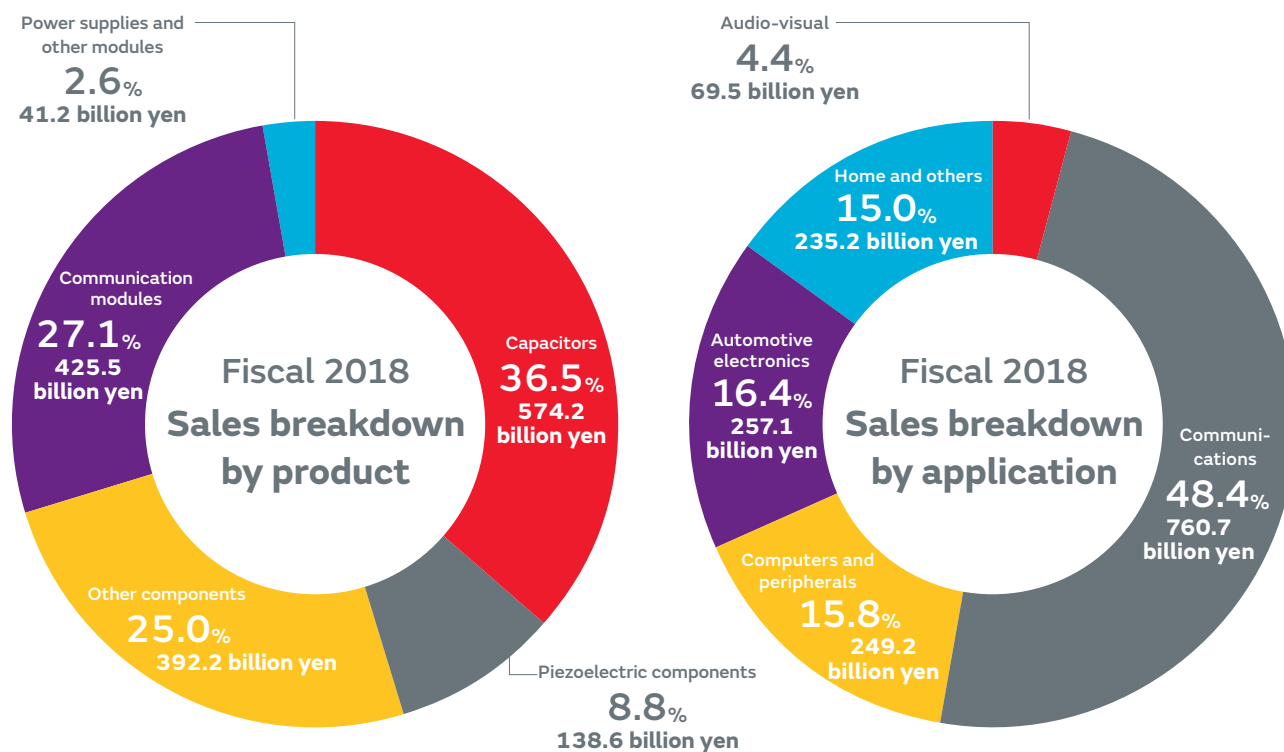


Murata's profile

Murata products are playing pivotal roles all around the world. Since our sales exceed one trillion yen and are generated from products with high shares in global markets, we have opportunities to communicate with many customers in a wide range of industries, which allows us to stay ahead of and anticipate customer needs.

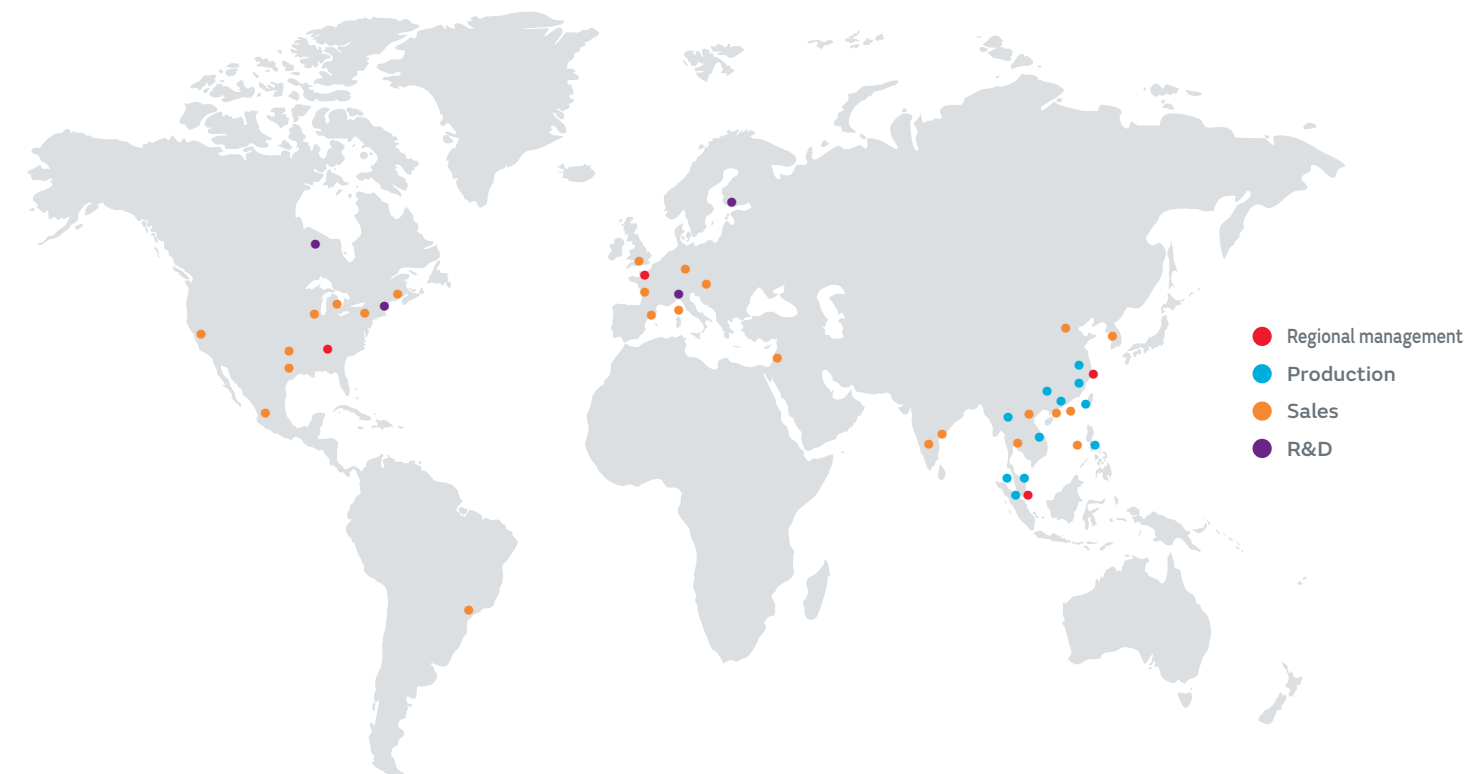
A diverse range of products for a diverse range of applications

Murata holds a large market share in a wide range of products, from our mainstay capacitors to filters, coils, sensors, batteries, and other components, and modules comprised of these components. The areas where our products are valued have expanded beyond our core electronics field, including mobile phones, computers, AV equipment, and home appliances, resulting in the increasing demand from areas such as automobiles, healthcare, and energy.



Global expansion and development

Murata's ratio of sales outside of Japan to net sales exceeds 90%. Murata's strength lies in our network owing to its global business expansion and development, enabling us to offer high-quality products and excellent services in locations all around the world.



Subsidiaries outside of Japan

64 companies

Number of employees outside of Japan

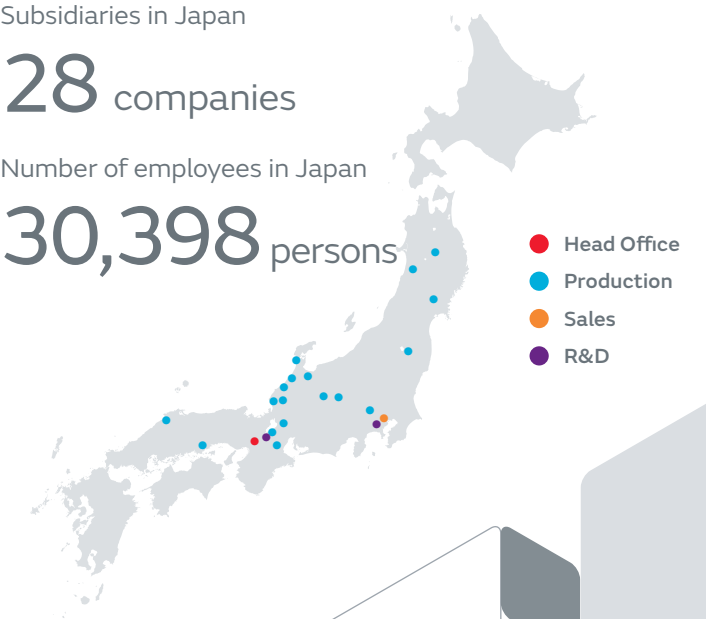
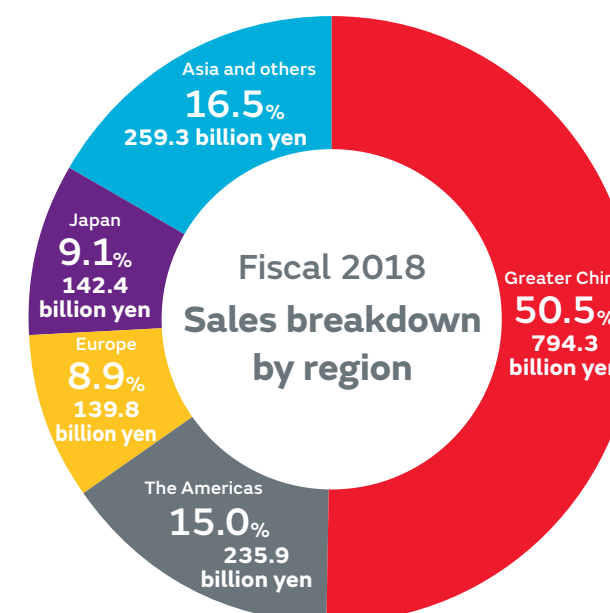
47,173 persons

Subsidiaries in Japan

28 companies

Number of employees in Japan

30,398 persons



Process of value creation

Treasure Murata Philosophy and pursue the unique qualities of Murata

We continue to value Murata Philosophy, even in a changing business environment. Employees around the world sharing Murata Philosophy will create innovation and new value by trusting and cooperating with each other to demonstrate collective strength.

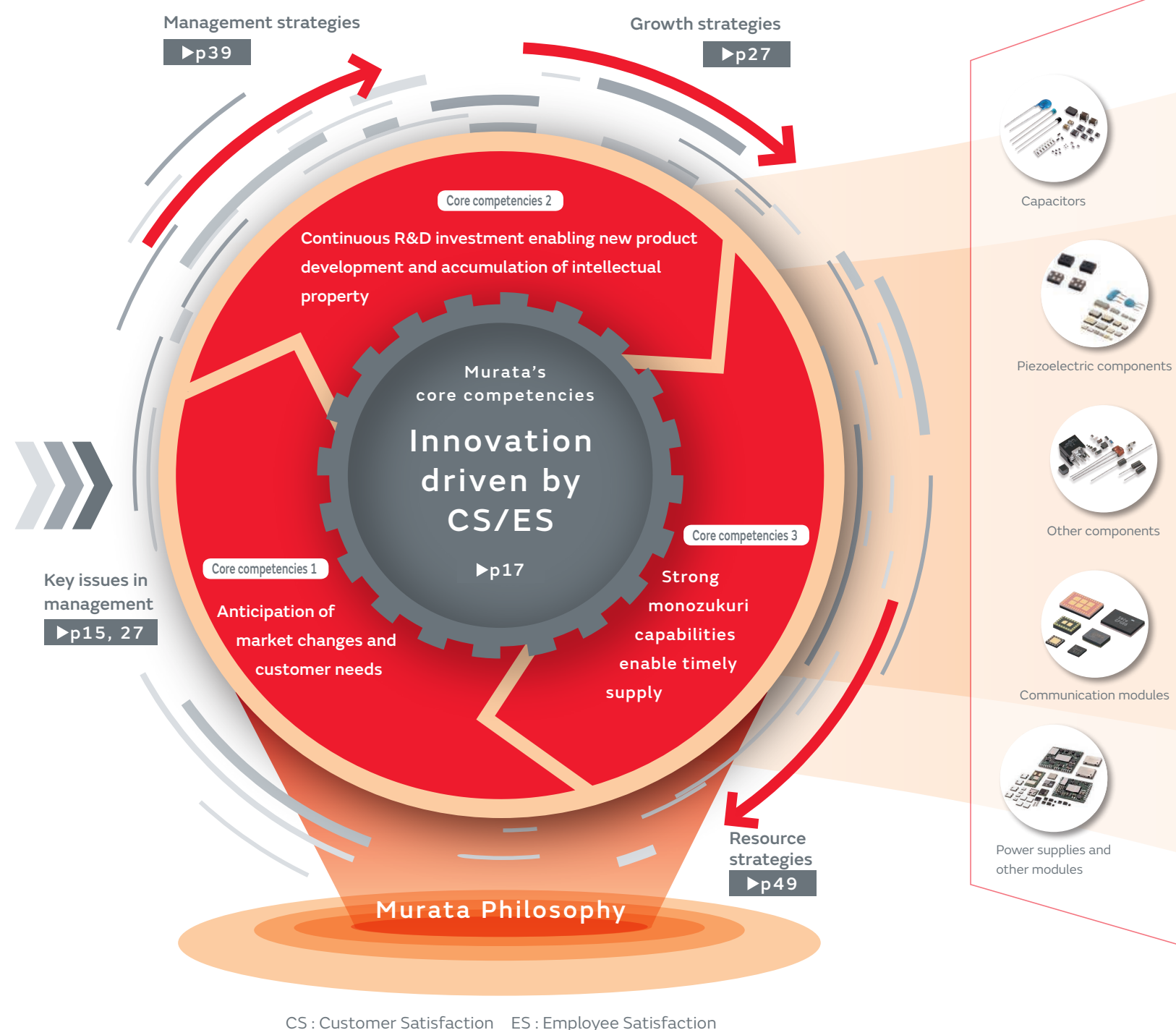
External environment

- Digitization of all types of objects
- The rise of IoT, AI and big data utilization
- Higher functioning and faster communication equipment
- Electric vehicles, ADAS (Advanced Driver Assistance System), and automated driving
- Enhancement of information security

Global social issues

- Climate change
- Resource depletion
- Human rights issues, etc.

Global social issues representing SDGs



Key markets

Communications market

Murata's vision for the future

Smartphones that are always close by. We will contribute to fulfilling the advanced needs of our customers through our technological capabilities and product appeal. We will also set our sights on providing integrated solutions for antennas and filters combined with RF modules in addition to our standard capacitors and noise suppression products in order to meet advanced demand arising from higher functionalities, multi-functionalization, and compatibility with the next-generation communications technology, 5G (the 5th generation of mobile communication systems) for equipment, whereby aiming to achieve further growth.

Applying Murata's strengths

- Preference toward smaller and thinner components and high density mounting of consumer MLCCs
- Higher frequency, superior composite performance, and miniaturization in response to the evolution of communications technology for piezoelectric components
- Low power consumption, high-speed data communication, and higher reliability toward an IoT society in connectivity modules

Automotive market

Murata's vision for the future

We aim for establishing a society where everyone can move freely with confidence while protecting the environment. To this end, we are now addressing several themes such as the advancement of electrification and automated driving, sensors for safe driving, and wireless modules for data communication between cars and the outside world. Sharing the value of "higher reliability" that brings our customers peace of mind, we will sustain our growth with a diverse lineup that leverages our strengths in areas such as sensing, communication, miniaturization, and noise suppression.

Applying Murata's strengths

- Higher reliability and high temperature/high humidity resistance in automotive MLCCs
- Utilization of sensors automotive safety and creation of comfortable space

Markets Murata challenge over the medium to long term

We will continue to challenge in Energy and Medical/Healthcare markets in a long-term perspective. In addition, we are seeing an expansion of customer needs in relation to IoT (Internet of Things) society. In response to these expanding needs, we are working to realize the provision of new value that integrates sensor and communication technologies.

What Murata wants to be

Murata's purpose is to explore our originality with intelligence, build a wider and deeper foundation for an electronics society, and contribute to enriching people's lives in the truest sense.

Innovator in Electronics

We continue to contribute to the advancement of society by creating innovative products and solutions

For that reason, we express what we should be by the phrase, "Innovator in Electronics." We are committed to being a leading innovator in the electronics industry and taking the initiative in working toward a better environment and society.

Murata's key issues originating from social issues

With the digitization of all types of objects, the potential for business opportunities that will lead to future growth is greatly expanding. Meanwhile, environmental and social risks are becoming increasingly serious, and in order for companies to grow sustainably, we believe that it is our duty to incorporate non-financial issues such as ESG into our management strategies and prioritize harmonization with Murata's stakeholders as we do business. Therefore, we believe that fiscal 2019 is the time for us to review Murata's relationship with social issues and the scope of contributions thereto. Accordingly, we have started identifying key issues (hereinafter "material issues") originating from social issues.

Basic policies on identifying material issues

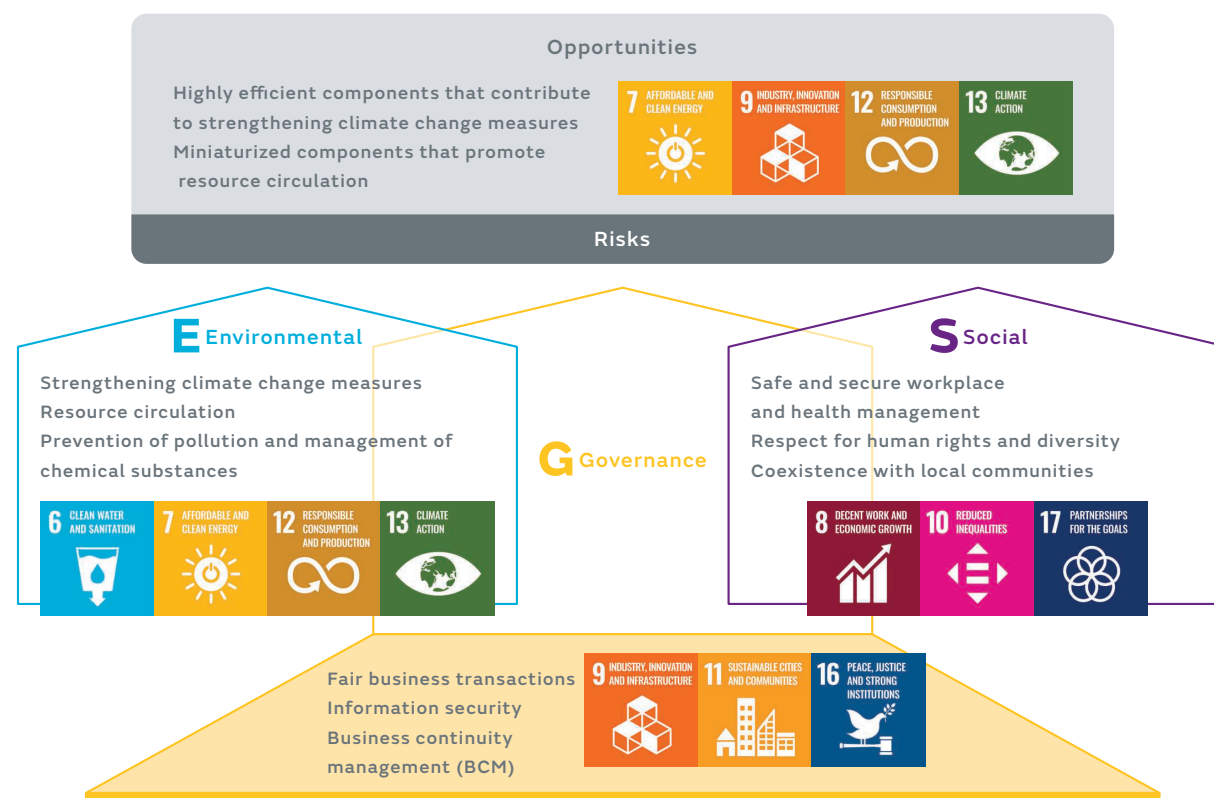
In our work on social issues thus far, Murata has adopted an approach of "taking the initiative for the better environment and society" defined by our identity "Innovator in Electronics." This identity shall

be shared and valued by all employees of the Murata Group around the world. We will continue to value this ideal. Murata's basic policy is to contribute to resolving social issues through its business operation.

Murata's material issues

We have defined the fields that we should focus on as issues of materiality. At the same time, we have identified key issues by classifying them into two aspects; resolution of social issues through business (opportunities) and handling of social issues in business processes (risks). We will continue to improve our corporate value by

contributing to the resolution of social issues through innovation generated by Murata's technologies as well as by constantly monitoring and improving the impact on society to be caused through our business activities.

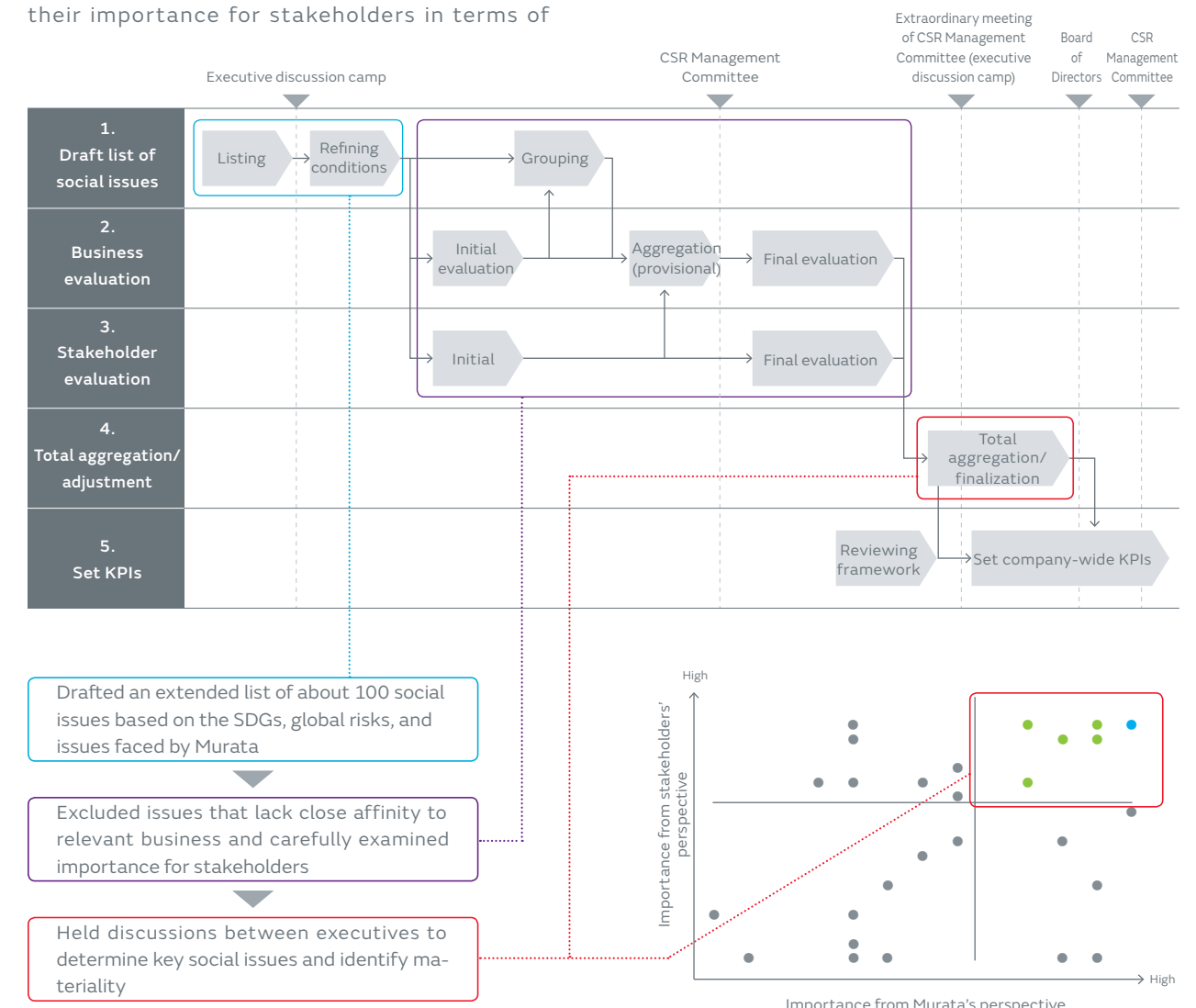


* For details on corporate governance, please see p.39.

Material issues identification process

About 100 specific social issues have been identified based on the SDGs, global risks, and issues faced by Murata. We scored these issues in accordance with their importance for Murata's business and their importance for stakeholders in terms of

both risks and opportunities. In addition, the CSR Management Committee (please see p40) chaired by Representative Director held repeated discussions and identified 11 key issues (material issues).



Future activities

We will determine the level that Murata should strive for in regard to the identified materiality, and the responsible departments and business divisions will cooperate with each other in order to make steady progress. We will strive to achieve integration

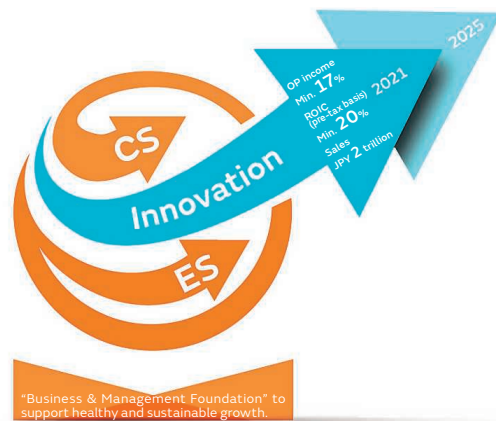
with management by ensuring PDCA cycles for these initiatives as a company and continuously improving both our activities and the frameworks that supports these activities.

Murata's core competencies

We will increase our collective strength by enhancing and connecting respective strengths together.

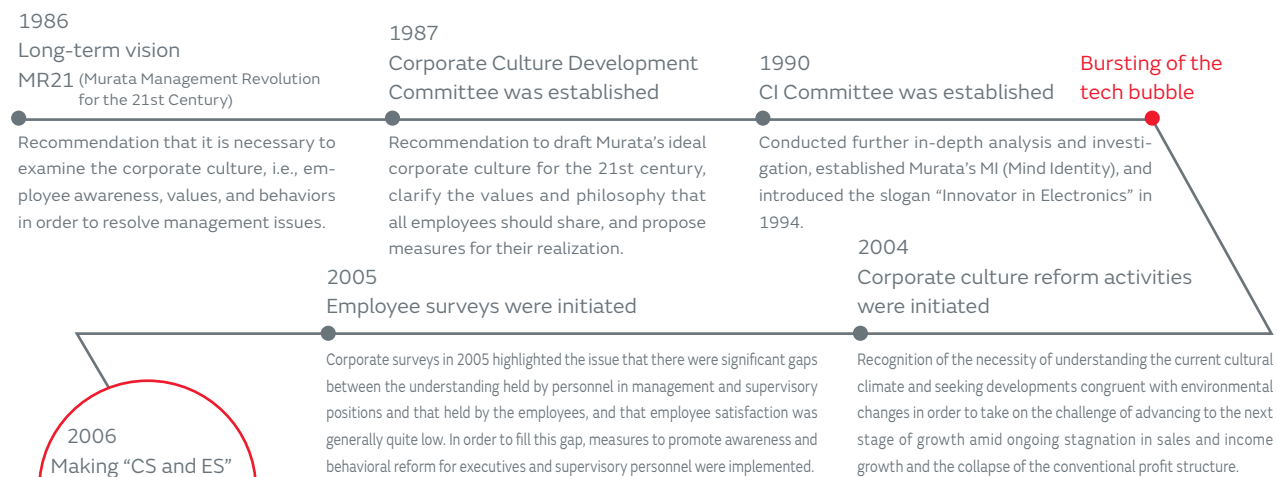
Since most of our sales are generated from products with high shares in global markets, we have opportunities to communicate with many customers in a wide range of industries, which allows us to stay ahead of and anticipate customer needs. Murata's strengths are in our global sales network, technological development capabilities, monozukuri (manufacturing) capabilities, and supply capabilities. We will increase our collective strength by combining these elements.

Core competencies Innovation driven by CS/ES



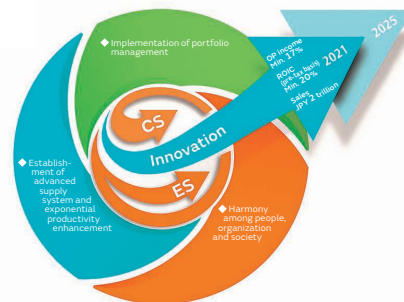
Murata's mission is to "contribute to the advancement of society," and we believe that Murata exists for this purpose. In order to realize this mission through the efforts of all employees, the values of "CS and ES" are regarded as critical aspects in our management. At Murata, CS means "to create and provide value that customers appreciate," and ES means "each and every employee feels rewarded and continues to grow through his or her work." We practice these values based on our desire to be a company that can realize them in our daily business.

Initiatives involving corporate culture after establishing the Murata Philosophy



Actions for understanding CS and ES

We started to hold executive training camps for executives to provide them with an opportunity to study and discuss CS and ES. Even now, all executives assemble and hold discussions once every fiscal quarter. In this Mid-term Business Plan, we solidified the idea that Murata's greatest value is how our CS and ES drive innovation.



Core competencies 1 Anticipation of market changes and customer needs

A network is in place to provide Murata's services and products anywhere around the world, including in Japan, Asia, the Americas, and Europe. Using "marketing by everyone" as our motto, we leverage

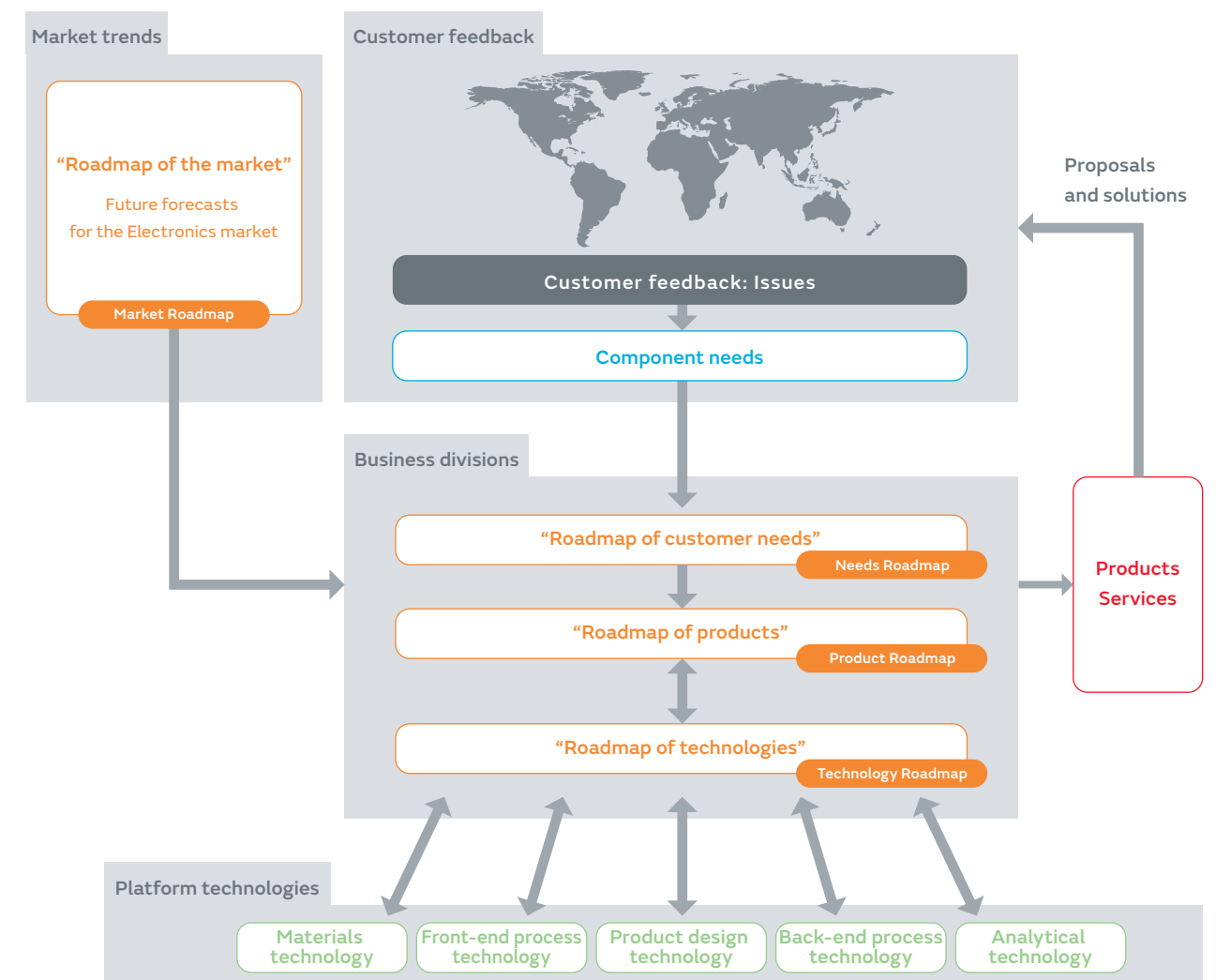
our global network to anticipate customer needs ahead of any other company, and each employee maximizes value offered to customers.

Formulation of roadmaps leveraging marketing capabilities

New technologies such as IoT, automated driving, AI in the 5G era will change not only individual electronic devices, but also transportation systems, cities, and society as a whole. We have strengthened our efforts to look to the future and provide optimal solutions that will meet customer needs by boosting cooperation among sales, marketing, development, and production in order to continue to provide customer value in this vastly changing business environment.

As one of those activities, we have formulated four

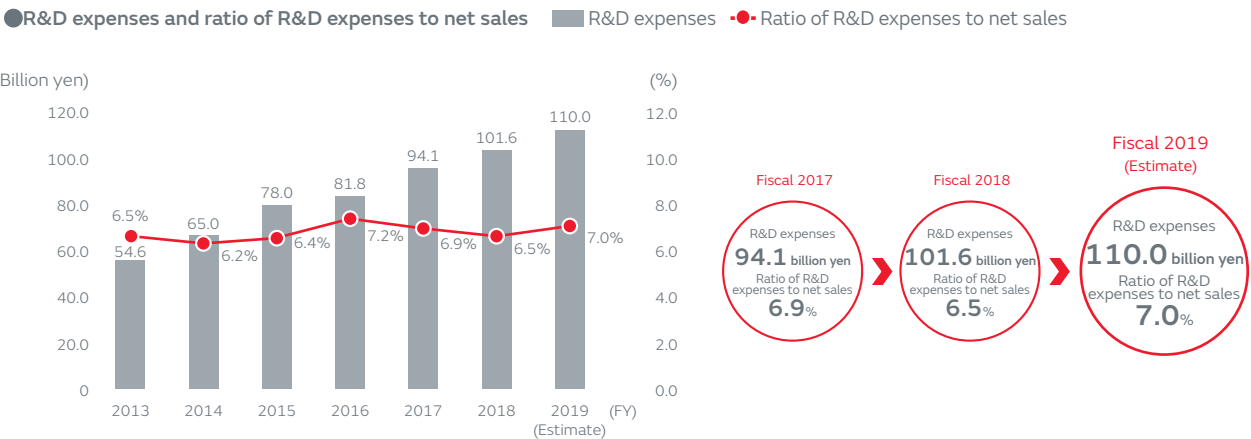
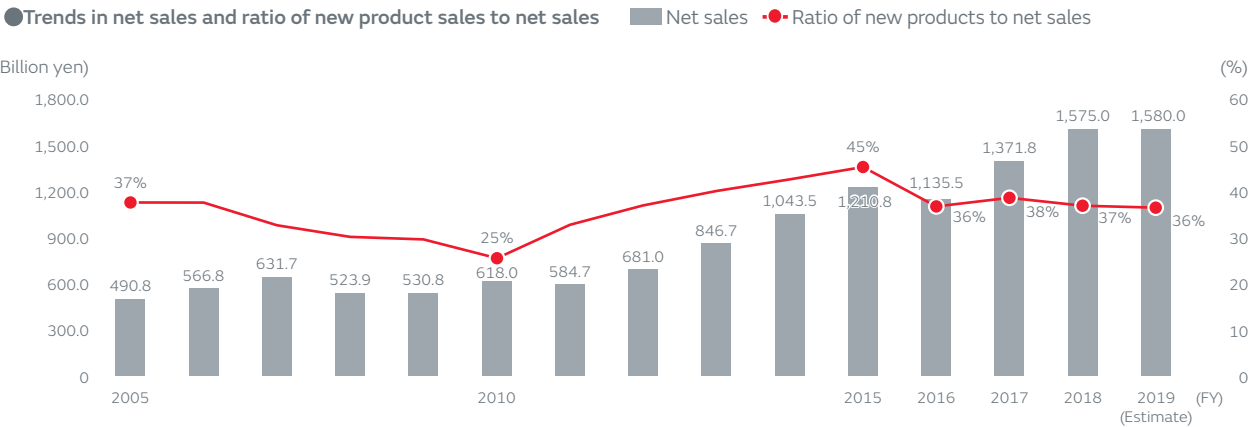
roadmaps. The Sales & Marketing Unit evaluated general trends in the market and produced Market Roadmap, and the sales and marketing departments in each area and the sales promotion department of the business divisions integrate this Market Roadmap with customer needs over the medium to long term, whereby composing Needs Roadmap. These are connected to Product Roadmap and Technology Roadmap by the development department. Roadmaps are revised every year and reconnected to R&D and product development.



Core competencies

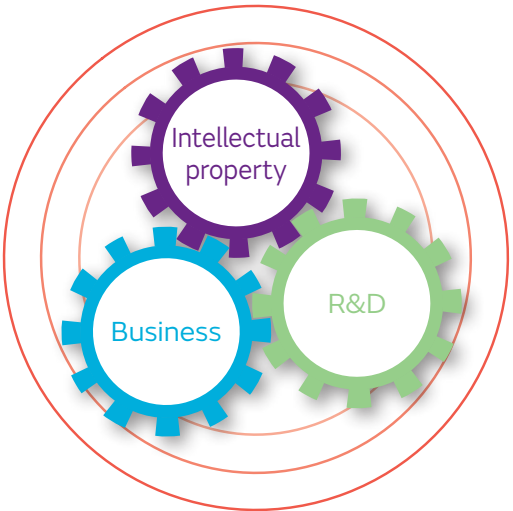
Core competencies 2 Continuous R&D investment enabling new product development and accumulation of intellectual property

Murata has built an integrated system of production from raw materials to finished products, and we have been independently developing technologies including materials technologies and fundamental technologies, and acquiring the expertise that other companies lack. Through continuous investment in technological development, we have sought to differentiate our products, and this has become one of Murata's core competencies.



Accumulation of intellectual property

Murata sees intellectual property strategy as a part of business and development strategies, and promotes intellectual property strategies and activities that are based on its business and development strategies. Each business division and development department has a representative and a patent leader, both of them promote intellectual property activities in cooperation with the Intellectual Property Department, those representatives and patent leaders play a central role in intellectual property activities. We also cultivate sense of intellectual property through various events such as rank-specific/professional education, workshops, and patent forums on intellectual property.



Trends in the number of patents owned by the Murata Group

The number of patents owned by Murata is increasing year by year both in Japan and in overseas. This is due to an increasing number of applications resulting from expansion in the technological field through M&As, and the inclusion of the number of patents that have been transferred. The reason for an increase in the number of foreign applications is

that our ratio of overseas sales has increased, and we have been proactive in filing new foreign applications. When moving forward with foreign applications, we utilize a PCT application to ascertain appropriate countries we should file with consideration for optimizing cost effectiveness.

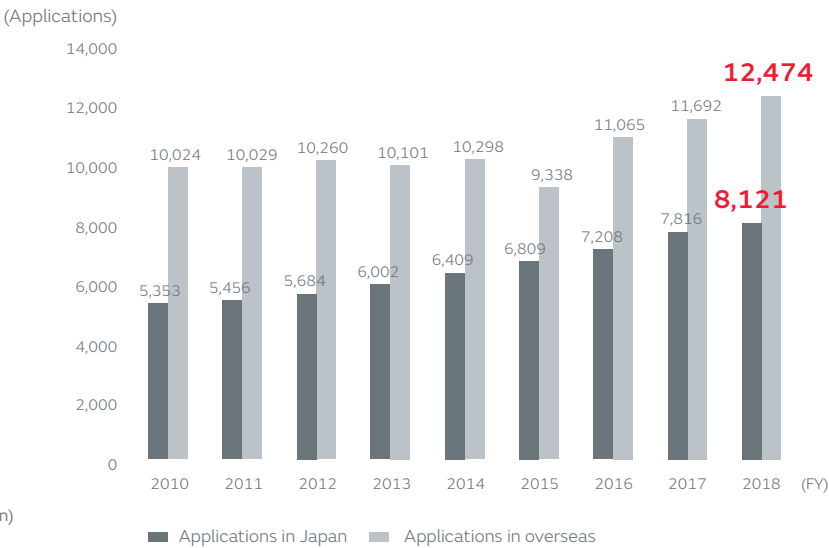
Ranking in PCT applications filed

World ranking

29th

Ranking among Japanese corporations

10th



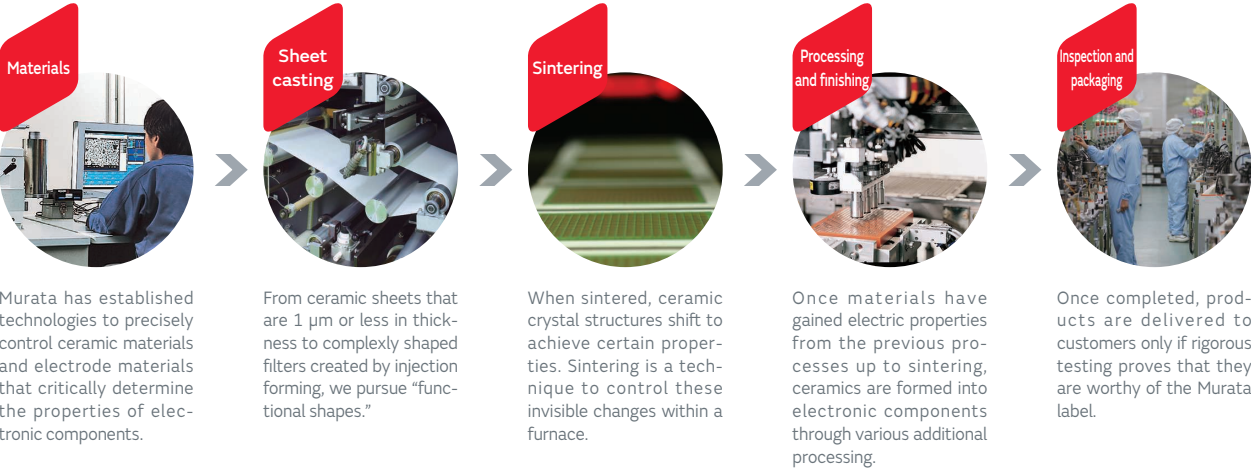
*Source: WIPO (World Intellectual Property Organization)
Patent Cooperation Treaty Yearly Review 2018

Core competencies 3 Strong monozukuri capabilities enable timely supply

All technologies are directly in line with our markets and customers. Murata internally develops materials, processes, products and production technology.

These are vertically integrated to realize the provision of value to customers in a quick and timely manner.

●Murata's monozukuri (manufacturing)



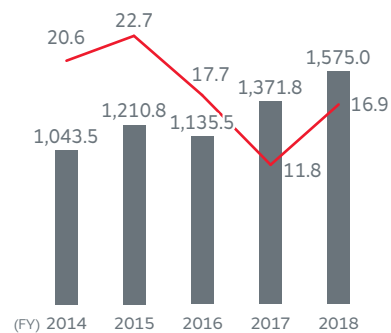
Consolidated financial and non-financial highlights

(FY)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating results											
Net sales (Millions of yen)	523,946	530,819	617,954	584,662	681,021	846,716	1,043,542	1,210,841	1,135,524	1,371,842	1,575,026
Operating income (loss) (Millions of yen)	(16,287)	26,730	77,485	44,973	58,636	125,891	214,535	275,406	201,215	163,254	266,807
Operating income / net sales (%)	(3.1)	5.0	12.5	7.7	8.6	14.9	20.6	22.7	17.7	11.8	16.9
Income (loss) before income taxes (Millions of yen)	(10,319)	34,658	82,062	50,931	59,534	132,336	238,400	279,173	200,418	167,801	267,316
Net income attributable to Murata Corporation (Millions of yen)	3,588	24,757	53,492	30,807	42,386	93,191	167,711	203,776	156,060	146,086	206,930
Shareholders' equity (Millions of yen)	784,342	800,857	821,144	808,542	860,963	955,760	1,123,090	1,229,159	1,354,819	1,456,600	1,603,976
Total assets (Millions of yen)	909,327	928,790	988,508	1,000,885	1,087,144	1,243,687	1,431,303	1,517,784	1,634,999	1,797,013	2,048,893
Net cash provided by operating activities (Millions of yen)	76,521	107,303	105,610	57,589	88,537	185,751	259,936	252,451	243,920	225,249	279,842
Net cash used in investing activities (Millions of yen)	(18,106)	(93,261)	(133,999)	(46,487)	(56,173)	(117,150)	(91,379)	(205,316)	(202,697)	(194,165)	(303,741)
Net cash provided by (used in) financing activities (Millions of yen)	(43,814)	(22,379)	(14,561)	(9,148)	(9,655)	(40,899)	(66,966)	(56,614)	(11,729)	(83,585)	51,546
Cash and cash equivalents at end of year (Millions of yen)	117,502	108,777	63,020	65,302	90,068	118,884	212,936	212,570	239,184	187,910	217,805
Average exchange rate (Yen/U.S. dollar)	100.54	92.85	85.72	79.07	83.11	100.24	109.94	120.14	108.42	110.86	110.91

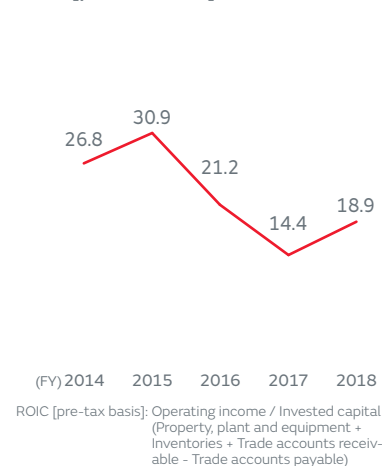
Indices											
Shareholders' equity ratio (%)	86.3	86.2	83.1	80.8	79.2	76.8	78.5	81.0	82.9	81.1	78.3
Basic earnings attributable to Murata Corporation per share (yen)	5.49	38.45	83.08	48.12	66.94	146.88	264.06	320.85	244.62	228.62	323.45
Net income attributable to Murata Corporation / shareholders' equity (%)	0.4	3.1	6.6	3.8	5.1	10.3	16.1	17.3	12.1	10.4	13.5
Shareholders' equity per share (yen)	1,218.11	1,243.78	1,275.27	1,276.85	1,359.65	1,504.84	1,768.33	1,935.35	2,122.83	2,276.82	2,507.11
Cash dividends per share (yen)	33.33	23.33	33.33	33.33	33.33	43.33	60.00	70.00	73.33	86.67	93.33
Capital expenditures (Millions of yen)	65,427	22,868	56,752	68,445	77,662	68,197	101,184	172,540	158,579	306,608	291,581
Depreciation and amortization (Millions of yen)	80,978	69,896	61,795	61,008	72,323	76,884	84,935	99,105	113,523	141,625	124,419
Research and development expenses (Millions of yen)	46,832	41,649	39,778	40,978	48,766	54,649	64,990	77,982	81,809	94,181	101,589

The consolidated financial statements are prepared in conformity with accounting principles generally accepted in the U.S.
The Company implemented a three-for-one common stock split, effective April 1, 2019. Information per share were calculated on the assumption that the relevant stock split had been implemented at the beginning of fiscal 2008.

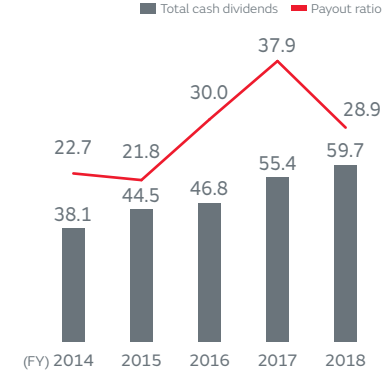
Net sales and ratio of operating income to net sales (Billion yen or %)
■ Net sales ■ Ratio of operating income to net sales



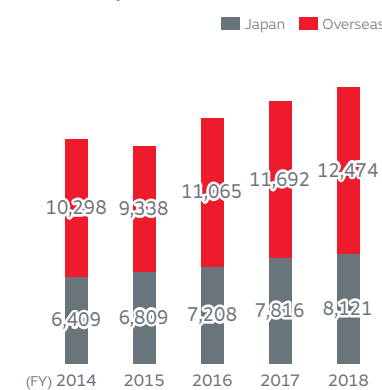
ROIC [pre-tax basis] (%)



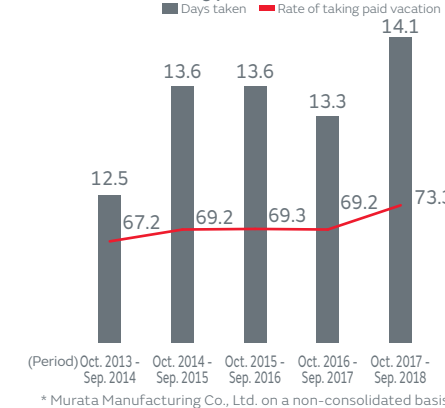
Trends in return to shareholders (Billion yen or %)
■ Total cash dividends ■ Payout ratio



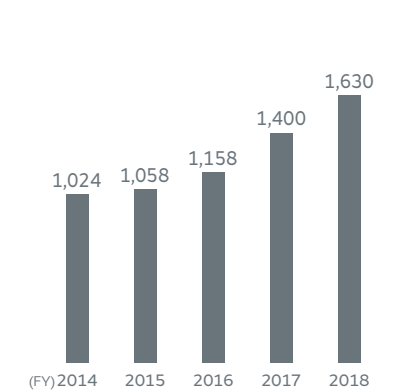
Number of patents owned (Applications)
■ Japan ■ Overseas



Average paid vacation days taken per person and rate of taking paid vacation (Day or %)
■ Days taken ■ Rate of taking paid vacation



Total GHG emissions (1,000 t-CO₂/year)



Message from the President

Working with electronics to envision the future
—Wishing the presence of Murata to be pride
and a source of joy in local communities—

Changes in the society surrounding us

Our mission is to contribute to the creation of a sustainable society

“We contribute to the advancement of society by creating innovative products and solutions.”

We, Murata employees, repeat to ourselves almost every day, and have cherished these words ever since our foundation. At Murata, more than ever before, we must keep this phrase in mind as we undertake the daily operations of our business. Diverse changes in society in recent years have caused me to embrace this thought.

In order to realize a sustainable society, corporations must gain society’s trust and contribute to solving various social issues such as the environment, health, and human rights. Our mission is to work toward solving these issues and contribute to the realization of a sustainable society through business activities.

Murata has a reliable track record of addressing social issues through business activities. The phrase “Innovator in Electronics” that we set forth as our corporate slogan not only expresses a literal interpretation of leading innovation in business, but also includes our approach toward the environment and society in a positive way and value creation through ingenious electronics development. Under the Murata Philosophy and our slogan, “Innovator in Electronics,” we have contributed to energy conservation through the efficient use of resources as a result of mono-zukuri (manufacturing) of light and compact products and supply of highly efficient modules, and to the advancement of society by creating innovative products for the communications and automotive markets.

Opportunities for Murata to make contributions will continue to expand in the future. In the electronics field, an IoT society where all types of objects are connected via communications networks is just around the corner, and IT solution services are already a requirement in all sorts of fields including households, medical, factory automation (FA), and infrastructure. This trend is expected to be further boosted by next generation communication technologies represented by 5G and LPWA. The evolution of communications technologies in high-speed communications, low latency, larger capacities, wide area communications, and multiple simultaneous connections brought about thereby will be likely to further accelerate the advancement of IoT society.

We are also seeing changes in the automotive industry that will have a significant impact on the world of electronics. The potential of semiconductors and communication functions will increase through electrification and automated driving, and automobiles are expected to move closer to being considered electronic or communication devices just like smartphones. Markets are expanding not only for automobiles, but in surrounding areas such as related services and infrastructure, further deepening the relationship between Murata and society.

In addition to this, we feel strongly that there is a great desire for our businesses to be operated in harmony with society more than ever, due to changes in both public values regarding corporate social responsibility and Murata’s influence on society resulting from the growth of our business. The Sustainable Development Goals (SDGs) set by the United Nations for the year 2030 are consistent with our activities and direction. In order for us to work together with society to achieve sustainable growth in the future, we must make conscious efforts to incorporate the resolution of social issues into our management strategies, which Murata can contribute to because of our adherence to perspective of the ESGs, as well as efforts to conduct business in harmony with our stakeholders. In light of these changes in society, we want to contribute to the advancement of society by operating our business from a perspective wider than ever before.



Chairman of the Board and President

Mid-term Direction 2021

Three-year initiative toward realization

To make these social contributions a reality, we have developed Mid-term Direction 2021. The three main pillars of this initiative are i) harmony among people, organization and society, ii) establishment of advanced supply system & exponential productivity enhancement, and iii) implementation of portfolio management. By implementing these measures one by one, we will make steady progress toward realization.

Among these three pillars, we must focus our efforts on “harmony among people, organization and society” in particular. This is the foundation for our efforts to solve social issues and achieve sustainable growth. In the current fiscal year, we have identified key issues (material issues) for Murata to address over the medium to long term originating from social issues. In identifying material issues, all executives gathered together to participate in a training camp and thoroughly discuss the relationship between business and the environment as well as Murata’s commitment to society. Through these discussions, we

came to the realization that “sustainable mono-zukuri (manufacturing) is what brings sustainable growth to Murata.”

First, from the perspective of the “environment,” we must consider the impact of our business processes as we seek for opportunities for business expansion. As long as a company operates business as a member of society, lack of consideration for this point will not only make a negative impact directly on the environment and affect the surrounding area, but it will also destroy the trust that we have cultivated and threaten the foundations on which we operate. Murata has been conserving energy, reducing greenhouse gases, reducing waste, and recycling resources mainly at each of our factories. By further strengthening and integrating these activities throughout the Company as a whole, we will implement strategic initiatives that are integrated into our businesses and build a foundation for sustainable growth together with society.

From the perspective of “society,” we will promote initiatives centered around the key concept of creating a safe and secure workplace through respect for human rights and diversity.

Diversity in Murata's human resources and organizational structure has been increasing as a result of recent business expansion and M&As. The ideal workplace we are aiming for is an environment where we can raise our value as a team backed by the leeway to express our own personal opinions and respect for each other's views while exchanging ideas, even among a diverse selection of members. Diversity and inclusion are indispensable values in promoting this initiative. For this reason, we will develop programs that promote communication within and between organizations, as well as enhance career paths that enable diverse contributions that leverage expertise. By integrating these new initiatives and our continuous efforts to build a safe and secure working environment, we will realize the creation of an ideal workplace.

In the second pillar, "establishment of advanced supply system & exponential productivity enhancement," which serves as the driving force behind building the foundation we are aiming for in the first pillar, we aim to evolve and improve the efficiency of work structures. One of the reasons for tackling this issue is a decrease in the working age population. In Japan, it is said that the increase in the number of employed workers will reach a plateau in the first half of the 2020s, and the problem of securing human resources may present a bottleneck for future business operations. As such, we must drastically improve productivity by changing work structures. Another reason is to incorporate state-of-the-art technologies in the realization of "next-generation monozukuri (manufacturing)" and further refine one of Murata's definitive strengths, "monozukuri (manufacturing) capabilities."

The construction of smart factories is essential for the realization of productivity improvements that are not just extensions of previous concepts. We will focus on introducing next generation facilities, manufacturing methods, and management techniques based on state-of-the-art IT technologies primarily in domains where productivity is expected to be improved to a great extent, whereby realizing higher level of work quality by utilizing relevant data in each process, enhancement of facility productivity, visualization of issues faced by facilities, and operational automation with robots and AGVs.

Murata is also focused on enhancing direct/indirect labor efficiency, utilizing all appropriate methods, including AI and RPA. Starting with considerations for the introduction of AI and RPA, we have been taking an inventory of operations, asking ourselves whether these operations are a source of Murata's competitive advantage. After selecting certain operations to focus on, we will proceed with the standardization and automation of work processes that employ IT.

The last of the three pillars is "implementation of portfolio management." This is an initiative to optimally allocate management resources for expanding business opportunities. From the perspective of the markets in particular, we want to contribute to the creation of more prosperous and more convenient future by investing our main management resources in the two markets of communications and automotive, capturing new opportunities and contributing to the further development of these markets.

In the automotive market, there is a high level of demand from customers for QCD and we will be required to provide long-term and stable supply. Accordingly, we must make efforts to focus our expertise more strategically. In addition, we are attempting to capture the market not only through automobiles themselves (In-Car) but also in areas that provide coordination with other automobiles and transportation infrastructure through communication technologies (Out-Car), whereby broadening our perspective on discovering new areas where Murata's strengths can be leveraged.

Acquiring and strengthening core competencies is also important. Without business operations that leverage core competencies that are inimitable for competitors, it will be difficult to achieve sustainable growth and there will be less necessity for Murata to take on that business within the market. We must also push forward the optimal allocation of management resources in carrying out this effort.

New determination upon our 75th anniversary

An unchanging approach

This year, Murata Manufacturing Co., Ltd. celebrated its 75th anniversary of foundation. Although there are many long-established companies in Kyoto, and it is said that a company hasn't fully come of age until it reaches its 100th anniversary, all Murata employees are proud of our achievement in being able to reach our 75th anniversary in the rapidly changing field of electronics.

Since our foundation, Murata's products have been used in a wide range of electronic devices, and we have seized on various customer needs, gained trust by supplying large amounts of electronic components, and accumulated both experience and a solid record of achievement. Murata's competence with "a global network and deep customer base," "technological development capabilities," and "monozukuri (manufacturing) capabilities" has been cultivated through 75 years of experience, and the "organizational cooperation" of Murata employees is a union of these strengths. Through the organic fusion of our definite strengths and strong organization/member capabilities, we can contribute to the realization of a prosperous and sustainable society.

There is a valuable quote from our founder that engraves the social responsibility that we are obligated to bear into our minds. That is the philosophy of "Wishing the presence of Murata to be pride and a source of joy in local communities."

In order for those around us to sincerely agree that we are fulfilling this philosophy, we must strive to maintain an integrated approach that is simple and honest, and continue to be a company that will be accepted by our surroundings. We want to once more reaffirm the identity of taking the initiative in working toward a better society, and earnestly tackle value creation in harmony with our stakeholders. Murata will continue to move forward together with our many stakeholders in order to achieve mutual prosperity.



Long-term vision (Vision 2025) and Mid-term Business Plan (Mid-term Direction 2021)

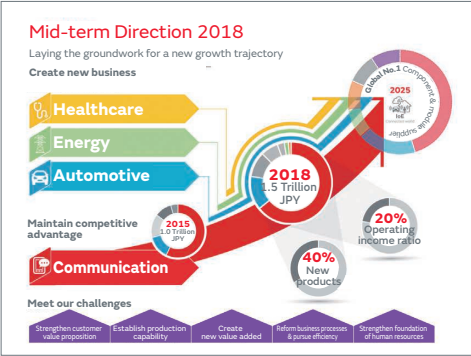
Murata has prepared the “Mid-term Direction” that includes actions to be taken over a three-year period for achieving the long-term vision and sustainable growth. In our previous integrated report, we briefly mentioned our mid-term plan for fiscals 2019 to 2021. Here, we will look back on the previous mid-term (Mid-term Direction 2018) and introduce details on the current mid-term (Mid-term Direction 2021).

Review of Mid-term Direction 2018

In Mid-term Direction 2018 (fiscals 2016 to 2018), we worked to solidify our foundations in the three promising markets of automotive, medical/healthcare, and energy while maintaining a competitive advantage in the communications market, one of our foundations, in order to “set out on a new growth trajectory” beyond the growth in reliance on the high-end smartphone market. We were able to grow our efforts in the automotive market to the extent that it became a foundational business along with communications.

We will position medical/healthcare and energy markets as challenges to take on from a long-term perspective in the next three years, and make continual efforts to this end.

	FY2016	FY2017	FY2018
Net sales	1,135.5 billion yen	1,371.8 billion yen	1,575.0 billion yen
Ratio of operating income to net sales	17.7%	11.8%	16.9%
Ratio of new product sales to net sales	36%	38%	37%



Long-term vision (Vision 2025)

Theme	Murata focuses on strengthening “Business & Management Foundation” in order to seize expanding business opportunities and realize Healthy & Sustainable Growth.
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Where Murata wants to be in 2025

■ Innovation driven by CS/ES

ALL Murata employees collaborate with one another, innovate, and create new value.

■ Global No.1 Component & Module Supplier

Murata aims to become the first-choice supplier in the target segments of each business while expanding the nature of value provision from parts to solutions.

■ Foundational markets, Challenging markets, Next New markets

Acquire and enhance core competencies, and achieve the following:

- ① Automotive as a foundational market following Communication market, as a pillar of profit.
- ② Continue to challenge in Energy and Medical/Healthcare markets.
- ③ Explore promising NEXT NEW markets.

Mid-term Direction 2021 (fiscals 2019 to 2021)

In the communications and automotive markets, a large wave of environmental change, which could be considered a paradigm shift, is just around the corner.

In order to attract business opportunities from these markets and achieve sustainable growth, it is necessary to strengthen the foundations of the organization and work structures in accordance with the expanded size of the company.

In the expanding markets, we will aim for healthy growth so that we can provide Murata’s value that satisfies customers and allow each and every employee feel rewarded as they continue to grow.

Numerical target of Mid-term Direction 2021

Mar. 2019	Ratio of operating income to net sales	16.9%
	ROIC (pre-tax basis)	18.9%
	Net sales	1.5 trillion yen
Mar. 2022	Ratio of operating income to net sales	Min. 17%
	ROIC (pre-tax basis)	Min. 20%
	Net sales	2 trillion yen

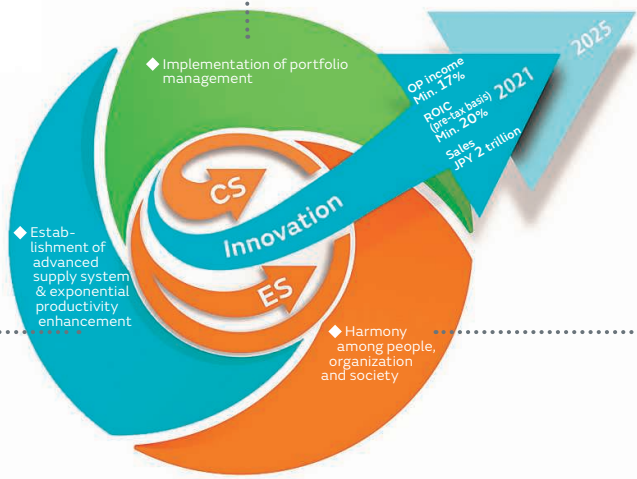
3 corporate-wide issues and mid-term basic policies for seizing expanding business opportunities and realizing Healthy & Sustainable Growth

Implementation of portfolio management

“Murata’s business portfolio is composed of ‘Global No.1’ products and we create additional customer value by designing and proposing specific technologies and products in combination.”

Basic policy

1. In order to respond to changes in the market environment, the key requirements are to identify promising businesses, acquire necessary management resources, and conduct optimal allocation. From a market perspective, Murata concentrates management resources into the Communication and Automotive markets.
2. Murata tackles new business creation with a long-term perspective. In the Energy and Medical/Healthcare markets, Murata continues to challenge in the identified business domains.
3. Murata acquires and strengthens core competencies that enable sustainable growth.



Harmony among people, organization and society

“Murata earns the trust of society, and is able to respond to changing business opportunities by improving its systems and organization in adapting to each employee’s growth and to business growth.”

Basic policy

1. Murata makes the company attractive to employees in order to support growth, and strengthens its organization to accommodate growth.
2. Murata renovates its organizational culture and business process to enable engendering of “trust and respect.”
3. Murata complies with regulations and laws. In addition, Murata operates its businesses in harmony with society.

Establishment of advanced supply system & exponential productivity enhancement

“While satisfying each customer’s QCDS, Murata achieves dramatic improvement in capital and labor productivity and a stable supply system that responds to demand fluctuation.”

Basic policy

1. Murata enhances direct/indirect labor efficiency, utilizing all appropriate methods, including AI and RPA.
2. Murata learns best practices from internal organizations and other companies, and optimizes and horizontally expands on them.
3. Murata prepares development and production structures ahead of fluctuating demand.
4. Murata flexibly responds to demand fluctuation by ascertaining in a timely manner the flow of information and goods throughout the supply chain and organizations and sites.
5. Autonomous overseas factories collaborate with and support one another, and we strengthen all Murata Monozukuri capabilities.

Director of
Components
Business Unit

Senior Executive
Vice President
Toru Inoue



Looking ahead at growth markets, we will pursue further miniaturization, increased functionality, and higher reliability.

Our key terms for growth are “5G” and “EVs, V2X, and automated driving”

The key terms that have recently been on the rise in the component industry include “5G” for the communications market and “EVs, V2X, and automated driving” for automobiles. For 5G, it is naturally important to consider which applications will become mainstream as data volume increases significantly, but the evolution of smartphones and all kinds of wearable devices will continue to centralize on becoming smaller and thinner and featuring increased functionality, and capacitors will be required to accommodate larger capacities. In addition, EVs, V2X, and automated driving require high reliability in products that will never fail even in harsh environments such as high temperatures, high humidity, high voltage, and high currents.

In recent years, while the smartphone market has reached a plateau, the number of multilayer ceramic capacitors (MLCCs) used per phone is increasing, especially in high-end models. Specifically, feature phones, otherwise known as “dumbphones,” contained about 200 MLCCs, but this has increased to about 1,000 in high-end smartphones, which has boosted overall shipment quantities.

The same applies to automobiles that are featuring more and more electronic parts, which is why Murata focuses on actually disassembling

and investigating the interiors of automobiles. We are aware that the number of MLCCs, which was less than 3,000 per vehicle in conventional automobiles, has increased to 5,000 in standard HVs, and has reached more than 10,000 for EVs that are equipped with a selection of ADAS functions. Furthermore, by understanding the reasons and ways that electronic components are used in automobiles through the study of manufacturer’s design concepts, we can offer further strength in making proposals to our customers.

Our current share in the MLCC market is about 40%. A major factor in acquiring this high market share is the fact that we can complete everything from development to manufacturing internally. In other words, everything from ceramic material selection to production facilities and manufacturing process technology is taken care of by our own internal framework. As a result, customer requests can be quickly led forward into development, and products can be supplied at a lower cost due to various cost reduction options.

Leveraging technology and accommodating smaller sizes and larger capacities

With regard to electronic components, in recent years customers have desire to procure each individual component from several different companies

in order to diversify their procurement risks. As this trend gains momentum, we can leverage Murata’s strengths in being able to complete everything from development to manufacturing internally, and fully demonstrate our superiority in the ability to supply large quantities quickly and at lower costs in accordance with the customer’s product cycle.

Meanwhile, in order to meet the market’s growing needs for “smaller size, larger capacity” and “high reliability,” we are also focusing on providing increased variations of non-ceramic capacitors made from materials other than ceramics. One variation is a polymer aluminum electrolytic capacitor that can replace conventional tantalum capacitors and is available in smaller sizes and larger capacities. Another variation is a film capacitor that uses organic material for dielectrics, and this capacitor which is currently under development is unique in that it can be used even at high temperatures exceeding 100°C. Silicon capacitors are not only smaller and thinner, but can also be used at high temperatures, so they have the added value compatible with unique specifications required in the automotive and medical fields.

In addition to capacitors, inductors and EMI suppression filters for automobiles are also gaining momentum. Higher currents produce wider ranges of noise, and the high frequency of 5G technology will generate a range that is different from conventional noise. It will be essential to strengthen measures to handle this factor. Murata provides noise diagnoses to customers from electromagnetic anechoic chambers constructed in locations around the world, and creates a cycle in which information about noise obtained therefrom is utilized in new product development.

In the automotive market, our most important market together with communications, whereas we previously satisfied customer needs by screening consumer products such as smartphones and providing partial changes to designs, we are now focusing on fully reexamining the required specifications for automobiles from step one as we move into development.

Increase market share for automobiles and further improve production efficiency

Murata’s financial performance in recent years has been steadily expanding. However, it was necessary to increase capital expenditures and accumulate a stockpile of products to meet demand fluctuations

as a result of the fact that a large percentage of sales were dependent on a specific market in this process, and this factor presented a risk.

Balanced business development that does not concentrate heavily on a specific market is necessary in responding to this issue. As such, we must reconsider both our customer mix and our market mix in order to increase our share in the automotive market in addition to the communications market, and develop a production plan that maximizes the operating rates of facilities.

Meanwhile, we must ask ourselves how much we can raise our production efficiency in response to further increases in demand. We are currently developing a smart factory concept that employs MLCCs to address this situation, and are making drastic improvements in operations, all the way from input instructions to monozukuri (manufacturing) and shipping.

Of course, our human resources are the foundation for these initiatives. We believe that Murata’s greatest strength is that each and every one of our employees is diligent and attentive in their work, down to the smallest details. For example, it is natural for any one of our employees to think about how many years it will take to recover the funds when considering a capital expenditure. In addition to the results of corporate climate reforms that we have implemented over the past 10 years, we have cultivated a culture where our employees can express opinions that extend beyond the boundaries of our business, and have steadily nurtured a consciousness for taking on new challenges. We are dedicated to achieving a renewed recognition of our unique strengths and capturing new business opportunities in “5G,” and “EVs, V2X, and autonomous driving.”



Director of
Module
Business Unit

Senior Executive
Vice President

Norio Nakajima



As we enter the 5G era, we will further refine Murata's strengths.

The arrival of the 5G era will bring new sources of added value

Today, we are on the verge of major changes and business opportunities, the likes of which have never been seen before. First, there is the arrival of the "5G era," which will see service launched in countries around the world between this year and next year. There is also the "automobile evolution," including automated driving and connected cars.

The characteristics of 5G are "ultra-high speed and large capacity, low latency, and multiple concurrent connections," of which "low latency" is particularly notable. In a low latency environment, it will become possible to send data to the cloud instantaneously, and receive the results of various processed tasks in real-time. In other words, the burden on the device side will be reduced, so we will probably see the emergence of edge devices, structured in a simple way to suit applications without being restricted by the form of devices like smartphones.

This will naturally affect our business model, which is based on developing and selling out modules for smartphones and other specific industries. In the 5G era, I think that the scope of our customers will expand to include industries that we have not traditionally traded with, and we may expect recurring revenue-type business opportunities with more added value, which can continuously generate revenues even after sales

have been made. It is also important that we respond to the "automobile evolution," and I think the communication module technologies that we have developed thus far will be utilized in areas such as navigation and collision prevention radar. We must focus on developing products that are more reliable, from the selection of materials to the durability of their structure.

Murata's technological capabilities being utilized precisely because of the high barriers in the high frequency environment

The arrival of the 5G era is an excellent opportunity for us to further develop our strengths and identify new added value. Murata is already developing communication modules equipped with all the functions required by 5G, specifically modules that incorporate small L-shaped antennas, filters, power amplifiers, and transceivers. These products are notable for using the multilayer resin substrate "MetroCirc™," which facilitates a flexible bending process for L-shaped parts. The millimeter waves used by 5G move in a very straight line, so four modules are required to transmit radio waves in all directions with existing substrates, whereas this MetroCirc™ enables coverage using two modules. Furthermore, a strength of the LCP (liquid

crystal polymer) used in MetroCirc™ is that it is made with special materials that limit radio wave loss to low levels, even for high frequencies. As the radio wave frequencies used in 5G become higher in the future, we will be able to further differentiate ourselves from competitors with this technology.

The "I.H.P. SAW filter" is one product that will enable us to clearly differentiate ourselves from competitors in the 5G era. Murata holds a 50% share of the global market for SAW filters, which are used for selecting specific frequencies. The "I.H.P. SAW filter" is small and low-cost, while also acting as a steep and low-loss filter for high frequency waves, which was previously difficult to achieve.

As edge devices made in a variety of ways emerge in the future, the technology that Murata has developed in pursuit of high performance in a miniature form will increasingly demonstrate its strength. It is difficult to predict what kind of edge devices will be popular in the market, but we believe there may be an increased range of business opportunities as our unique product development system, in which development and manufacturing are used to support our priority of product technologies where product design is determined by identifying customer needs, becomes a strength.

Implementing multifaceted portfolio management from a medium- to long-term perspective

The overreliance on specific markets will be an issue in our Modules segment. There are only two ways to resolve this issue: reduce our reliance on these markets, or clearly differentiate our technologies from those of competitors. At Murata, we are implementing portfolio management that focuses on areas where growth is expected in the future, namely communications, automobiles, IoT, and energy, whereby developing core technologies and products based on a medium- to long-term perspective.

In terms of specific areas, even in the battery business, which has been struggling somewhat, demand for cylindrical cells, for example, is increasing for applications in areas such as power tools, which are increasingly becoming cordless, and gardening tools, which are moving from gasoline engines to electric power sources. There is also stable demand for micro batteries, which are

very economical, robust, and safe, for applications in areas such as medical devices and healthcare equipment, in addition to in-vehicle applications.

In the future, we can expect to see the emergence of the favored form of next-generation battery, fully solid state batteries, which are very heat-resistant and safe. Murata's advantage in regard to fully solid state batteries lies in the utilization of our multilayer technology, developed for MLCCs (multilayer ceramic capacitors). At present, the energy density of solid state batteries is lower than lithium-ion batteries, so first we would like to increase our share of the market for wearable devices, which consume a small amount of power.

On the other hand, we are also strengthening our energy-related products, which are centered on batteries. Our energy management systems, which we are now supplying for general household use, are safe and long-lasting module products that are expected to contribute to in-house consumption of electricity, an area where demand is likely to increase in line with the end of the feed-in tariff system for solar power generation.

In order to achieve our unchanging mission to be an "Innovator in Electronics" with a product line-up suited to the demands of the times, we will keep our feet on the ground as we continue focusing on developing original technologies and products.



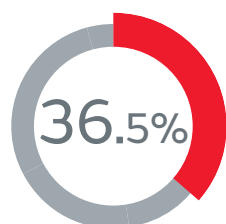
Capacitors



Multilayer ceramic capacitors

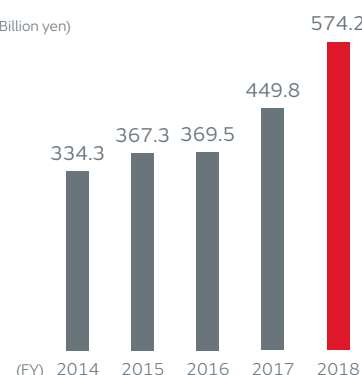
Main products

Multilayer ceramic capacitors, Polymer aluminum electrolytic capacitors, Silicon capacitors, High temperature film capacitors for automotive, etc.



Net sales
574.2 billion yen
YoY
Up **27.7%**

Net sales (Billion yen)



Operating results

In fiscal 2018, sales of multilayer ceramic capacitors for car electronics, the main product in this category, were strong as vehicle electrification progressed and demand increased in a broad range of applications, including applications in smartphones in Greater China, computers and peripherals. As a result, overall net sales were 574.2 billion yen (up 27.7% year-on-year).

Initiatives in the capacitor business

In fiscal 2018, the use of electronics increased in areas such as automobiles, and demand for capacitors rapidly increased. In response to robust customer demand, Murata has endeavored to increase production capacity, while also revising our product portfolio and increasing the amount we supply. In addition, we made requests to customers to revise the sales prices of chip multilayer ceramic capacitors (MLCCs), and allocated the proceeds to investment funds for strengthening production capacity. There is significant uncertainty regarding the direction of the global economy in fiscal 2019, which will also affect our capacitor business, but over the medium-term, we can expect new demand for applications in communications infrastructure, along with the spread of 5G, in addition to increased demand for compact large-capacity products for use in communications devices and highly reliable products for use in automobiles. We will allocate management resources to products that address this demand and develop new products, while also implementing initiatives to enhance productivity by promoting the use of smart factories.

In addition, we will enhance our range of capacitors to address the diverse needs of our customers, add non-ceramic products such as film capacitors, silicon capacitors to our portfolio, and offer new proposals with high reliability suitable for usage environments in the automotive and healthcare/medical markets.

Chip multilayer ceramic capacitors for consumer

The chip multilayer ceramic capacitor (MLCC) is an electronic component with external electrodes electrically and mechanically bonded to a substrate, attached to repeatedly stacked internal electrodes and ceramic dielectrics such as titanium oxide and barium titanate. It is a highly reliable nonpolar capacitor with high withstanding voltage and insulation resistance, superior frequency and heat-resisting characteristics, and long service life.

MLCCs are employed in mobile devices and home appliances as well as IT devices and network infrastructure equipment as they can temporarily store and discharge electricity, absorb noise in signals, extract signals with certain frequencies, and block direct current and pass alternating current only. MLCCs are also used for applications for which high reliability is required, including automotive, medical, and aerospace equipment. In particular, 600 to 1,000 MLCCs are used in one high-end smartphone. Even low-end or midrange models use 300 to 600 MLCCs per unit.

Regarding consumer MLCCs, to meet market demands particularly for those smaller in size, various products have been developed and have become highly competitive capacitors. Recently, the main product size has shifted from 1005M (1.0X0.5 mm) to 0603M (0.6X0.3 mm) and for wearable devices and small modules, consideration for adoption of 0201M (0.25X0.125 mm), the smallest size commercialized in 2014, has been increasing. Since market needs are expected to grow further for smaller components and high-density mounting, Murata will continue to improve its ceramic material pulverization and multilayer technology and propose new product design and easier to use solutions.

Chip multilayer ceramic capacitor for automotive

For automotive MLCCs, stricter regulations have been set out than those of consumer MLCCs in the areas of product material selection, design standards, product performance, and process management to achieve higher reliability and longer product life, even though materials and processes are generally the same as those in consumer MLCCs.

MLCCs have been increasingly adopted for safety applications such as airbags and ABS in addition to hybrid and electric vehicles that have become increasingly widespread, and production of these packages is rapidly increasing. Moreover, components employed by many customers are becoming smaller and the main size is shifting to 1005M (1.0X0.5 mm) from 1608M (1.6X0.8 mm). Also, these satisfy requirements of temperature cycling tests and high temperature and high humidity load tests

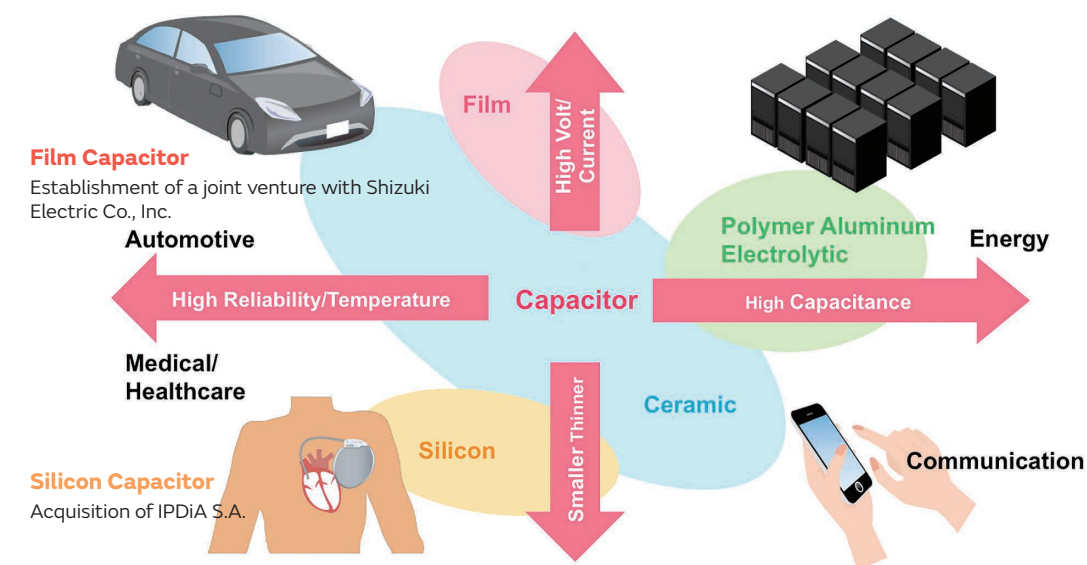
at 150°C, a step up from the previous guarantee of 125°C. Furthermore, more products meet requirements specific to in-vehicle applications regarding static electricity and surge tests (ISO7637-2). Recently, products which can be used in higher temperature environments are in demand.

To respond to tough market demands as stated above, Murata has developed more reliable materials, ensured product design margins, and established strict inspection standards for the production process to realize highly reliable products suited to use environments. In 2017, Murata succeeded in commercialization of lead type resin-coated MLCCs resistant to 200°C, and customers are considering adoption. Furthermore, various types of MLCCs according to the use environments have been commercialized, such as water-repellent products and MLCCs with metal terminals jointed.

Also in automotive MLCCs, Murata will continue to create new value for society by developing ceramic materials and improving process and inspection technologies toward creating smaller, more highly reliable and higher performance components.

Moreover, there is a strong desire in the automotive market for the stable supply of Murata's highly reliable components, and to respond to such expectations as the market leader, we are making maximum equipment investment at domestic and overseas plants. Murata will continue to deliver products with safety and security by identifying customers' product and supply needs as a continuously trusted company.

Murata capacitor field



Strategy by product: Components

Net sales **1,105.0** billion yenYoY Up **19.6%**

Piezoelectric components



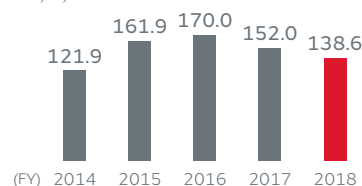
SAW filters

Main products
SAW filters, Ultrasonic sensors, Resonators,
Piezoelectric sensors, Ceramic filters, etc.



Net sales
138.6 billion yen
YoY
Down **8.8%**

Net sales (Billion yen)



Operating results

In fiscal 2018, sales of SAW filters declined owing to a decline in sales volume of high value added products for smartphones and lowered prices. As a result, overall net sales were 138.6 billion yen (down 8.8% year-on-year).

SAW filters

SAW devices are an essential component for eliminating communications noise to provide a smooth experience for enjoying online content on a smartphone. Murata's SAW devices, with the state-of-the-art technologies, are actively working inside various communication terminals including smartphones.

Murata has continued to lead the industry for a long time by making use of the R&D structures which can create unique technologies, and distribution channels seamlessly supporting the entire world. At present, Murata holds the largest production capacity in the industry, and has secured a global share of 50% of the SAW device market for communications applications.

With the 2020 Tokyo Olympic Games, 5G services with transmission speeds 100 times or more faster than current technologies will be fully commercialized, and the birth and expansion of new applications and communications devices is expected. With this trend, increasingly smaller and higher frequency SAW devices with superior composite performance will be a requirement. In response to this market demand, Murata will create compact products with superior features as soon as possible by utilizing proprietary I.H.P. technologies, TC-SAW technologies, advanced circuit simulation technology, etc. In addition, in terms of our future product line-up, we shall contribute to the development of society and industry by continuing efforts to differentiate our products from those of competitors and offer better products.

Operating results

For fiscal 2018, this segment achieved substantial sales growth due to growth in demand for MEMS sensors for automotive electronics, despite sluggish sales of high frequency coils for high-end smartphones. Recording sales from the lithium-ion battery business also contributed to success, with the acquisition process being completed in September 2017. As a result, overall net sales were 392.2 billion yen (up 21.7% year-on-year).

Lithium-ion batteries

Murata's lithium-ion batteries are classified into three types: laminated, cylindrical, and coin type batteries. Laminated type batteries are mainly employed for mobile devices including smartphones as sizes can be freely changed owing to the laminate film exterior material. Murata's gel electrolytes have safety characteristics because they are leakage-free and do not easily swell compared to liquid electrolytes used by other companies. On the other hand, cylindrical type batteries have advantages particularly in high output applications widely used for gardening tools, power tools, electric bicycles, cleaners, and other fields. The use of coin type batteries for automotive applications and in the medical field is increasing, as their strengths of compactness and high reliability are utilized.

The competitive environment is expected to become increasingly fierce in the lithium-ion battery business, but Murata will address market needs by supplying products that combine safety and high output. In addition, by integrating storage battery modules equipped with cylindrical cells with power converter technology, etc. to provide an energy management system centered on the housing and industrial markets, we will promote utilization of natural energy.

In the future, we are planning mass production of fully solid state batteries, which are expected to act as next-generation batteries. We shall develop our business primarily around applications in areas such as wireless earphones and wearable devices, by applying the manufacturing technologies that we developed for multilayer ceramic capacitors.

EMI suppression filters

EMI suppression filters are electronic components that suppress unnecessary radio waves (noise) emitted by electronic devices. Noise is restricted by law and voluntary regulations in different countries, so measures to combat noise using EMI suppression filters are necessary to comply with these laws and regulations. Available types of EMI suppression filter include ferrite bead and other inductor types, LC composite filters and other built-in load capacitance, and common mode choke coils, and they are used in different ways in accordance with the type of noise

and conditions of the circuit.

In the in-vehicle system market, which we are focusing on as a growth market, electric vehicles and self-driving technology continues to advance, so the number of EMI suppression filters used in cars is expected to continue increasing in the medium-term, and we will further enhance our range of products for the in-vehicle system market. In addition, in the communications market, new types of noise that differ from previous types will be generated by 5G, so we will expand our range of filters specialized for different applications, to address new demand. Furthermore, we shall utilize our expertise gained in collaborative measures to combat noise at electromagnetic anechoic chambers in locations around the world to effectively develop and propose new products, while also offering solutions for combating noise tailored to different applications by utilizing our design support simulation software, as we look to become an "EMI solutions provider" that adapts to the times.

MEMS sensors

Murata MEMS sensors are highly reliable, stable, and precise even when used in difficult environments, owing to the combination of Murata's proprietary processing technologies, namely 3D-MEMS technologies, with design technologies and advanced circuit technologies. Many customers have favored these characteristics of Murata MEMS sensors, and they have been widely adopted in applications in automobiles, industrial devices, and medical devices.

In the automotive field, which is growing rapidly, the use of stability control gyro sensors and acceleration sensors is increasing in line with the trend toward mandating the installation of safety systems to protect lives. In addition, preparing for the advent of the self-driving society in the coming years, support for safe driving and self-driving-related technology development is advancing on a global basis, resulting in an increasing range of business opportunities for us to utilize the strengths of Murata MEMS technologies as demand grows for locators to measure vehicle location, position, and direction of travel with greater precision.

In response to these market needs, Murata Manufacturing Co., Ltd., which has strengths in monozukuri (manufacturing), acquired the former VTI Technologies Oy (now Murata Electronics Oy), a Finnish company that we acquired in 2012, which has advanced technological capabilities related to MEMS development, thereby enabling us to offer more advanced products. We are also developing new products and increasing the supply capabilities of our factories in a timely manner. In the future, we will swiftly identify market needs and offer MEMS sensors that continue to be trusted and favored by our customers.

Other components



Lithium-ion batteries

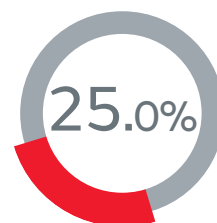


EMI suppression filters



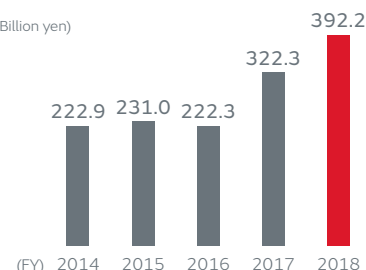
MEMS sensors

Main products
Inductors (coils), EMI suppression filters,
Connectors, MEMS sensors, Thermistors,
Lithium-ion batteries, etc.



Net sales
392.2 billion yen
YoY
Up **21.7%**

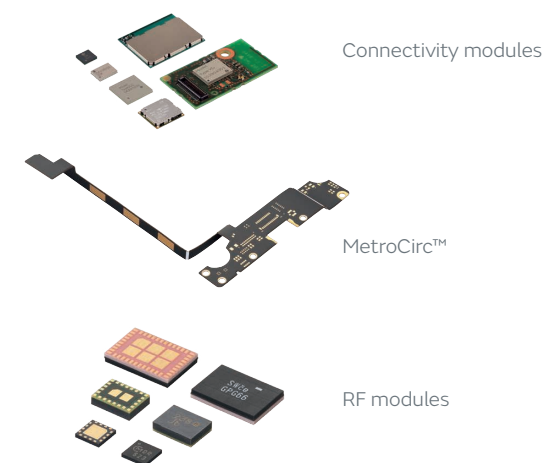
Net sales (Billion yen)



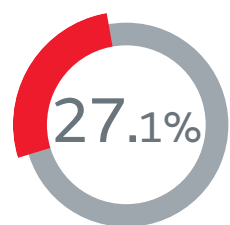
Strategy by product: Modules

Net sales **466.7** billion yen
YoY Up **5.1**%

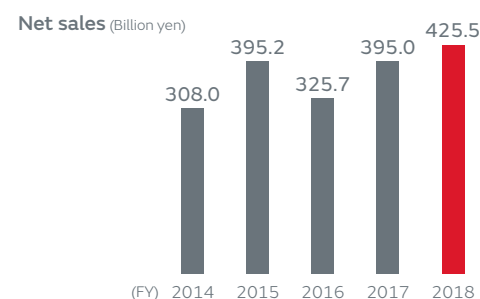
Communication modules



Main products Connectivity modules, MetroCirc™, RF modules, etc.



Net sales
425.5 billion yen
YoY Up **7.7**%



Operating results

For fiscal 2018, sales in multilayer resin substrates achieved substantial growth as they were used in a new model of high-end smartphone. In addition, sales in modules for communication equipment also increased. As a result, overall net sales were 425.5 billion yen (up 7.7% year-on-year).

Connectivity modules

Connectivity modules are compound components for wirelessly accessing the Internet or other devices from various devices.

These are used in various types of familiar devices such as smartphones, tablets, digital cameras, home appliances, and car navigation systems, and in various settings, including enabling users to download and upload photos and music from the Internet, and call hands-free while driving.

With the 2020 Tokyo Olympics, 5G services will be launched in Japan. 5G includes communications using microwaves on sub-6GHz bands and millimeter wave bands, namely 28GHz and 39GHz. Murata can offer high-property modules that use proprietary multilayer resin substrates to keep transmission loss low on millimeter wave bands.

Additionally, in an IoT society where all types of objects around us are connected to the Internet, various types of devices will have wireless communication functions. Murata will promptly supply products that are easy for customers to use for automobiles and edge devices for various applications, by utilizing design technologies with high reliability for smaller and higher performance products alongside software technologies to enhance connectivity, while contributing to the development of an IoT society as our mission in creating the future of electronics.

MetroCirc™

MetroCirc™ is a thinner multilayer resin substrate comprising LCP (liquid crystal polymer) sheets with exceptional RF characteristics in many layers which facilitates a flexible bending process.

It is possible to design circuits by inserting copper foil sheets between LCP sheets, and these circuits are used as transmission wires, coils, and other functional components in smartphones, wearable devices, and other applications, contributing to smaller, thinner, and higher performance devices.

Millimeter waves and other high frequency waves are used in 5G, for which service will be launched this year and next year, so it may be expected that MetroCirc™ will be used in substrates for millimeter wave modules, millimeter wave transmission lines, and other applications that utilize the low transmission loss properties at high frequencies that is a feature of MetroCirc™.

In addition, we believe that there will be more opportunities for customers to favor MetroCirc™ as the frequencies used become higher, because this will further highlight MetroCirc™'s competitive superiority in terms of transmission loss compared with competing technologies.

Looking ahead, it is likely that customers will face

more issues related to high frequency communications as the number of devices using 5G increases.

MetroCirc™ will contribute to resolving customers' issues, through the combination of high performance materials and Murata's unique ideas, developed based on our multilayer technology.

RF modules

Murata's RF modules are multifunctional and high performance electronic component units that realize an analogue high frequency circuit that controls communications among wireless devices by integrating various key devices.

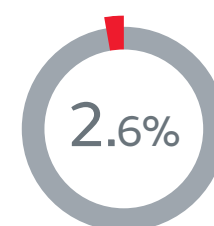
This module is comprised of passive devices such as SAW filters which demultiplex high frequencies and LC filters, high power amplifiers in transmission, low distortion amplifiers in reception, antenna changeover switches, and other semiconductor devices, and is actively used for various types of wire-

less devices including smartphones and tablet PCs.

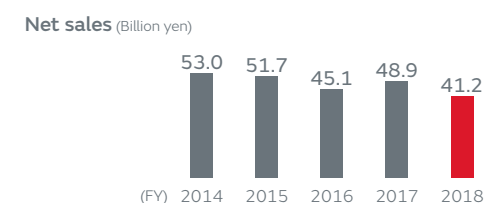
Murata, which internally develops various key devices that form the basis for module configuration and package technologies for modularization, is able to carry out integrated production. As a result, Murata has a strong competitive advantage in terms of business speed, production capability, and quality, in addition to performance.

With the arrival of 5G, RF modules for realizing dual connectivity in addition to multiple frequency bands and carrier aggregation will become necessary. In addition, the modularization of electronic components is expected to advance in line with the miniaturization and increased functionalities of wireless devices. Murata will promptly identify future market and customer needs, while also leveraging our competitive advantages to propose RF modules most suitable to customers, as we aim to be a company selected by customers.

Power supplies and other modules



Net sales
41.2 billion yen
YoY Down **15.6**%



Operating results

For fiscal 2018, sales of power supplies mainly for office equipment decreased. As a result, overall net sales were 41.2 billion yen (down 15.6% year-on-year).

Power supply modules

Changes in the business portfolio of power supply module business are currently underway. Murata continues in its process to divest the conventional custom power supply business and aims to develop high value added products by utilizing Murata's strengths as differentiating factors.

Murata's power supply modules featuring high reliability, high efficiency, and high power density are used for markets including servers, datacom, communications devices, in-vehicle systems, and industrial electrical equipment.

In the future, 5G service will be common in the communications device market where data traffic will increase from the expansion of big data. Also, in the in-vehicle system market, as the range of electronic components grows with higher functionality, highly efficient, compact power supplies with higher power density will increasingly become requirements.

To meet these market demands, Murata will provide compact power supply modules developed by integrating power circuit technologies, RF technologies, self-manufacturing of key devices, and highly reliable packaging technologies accumulated over many years. In addition, by providing highly efficient, high power density power supply systems as solutions that combined power supply modules and batteries, we will contribute to both increased functionality and energy saving of electronic devices.

Corporate governance

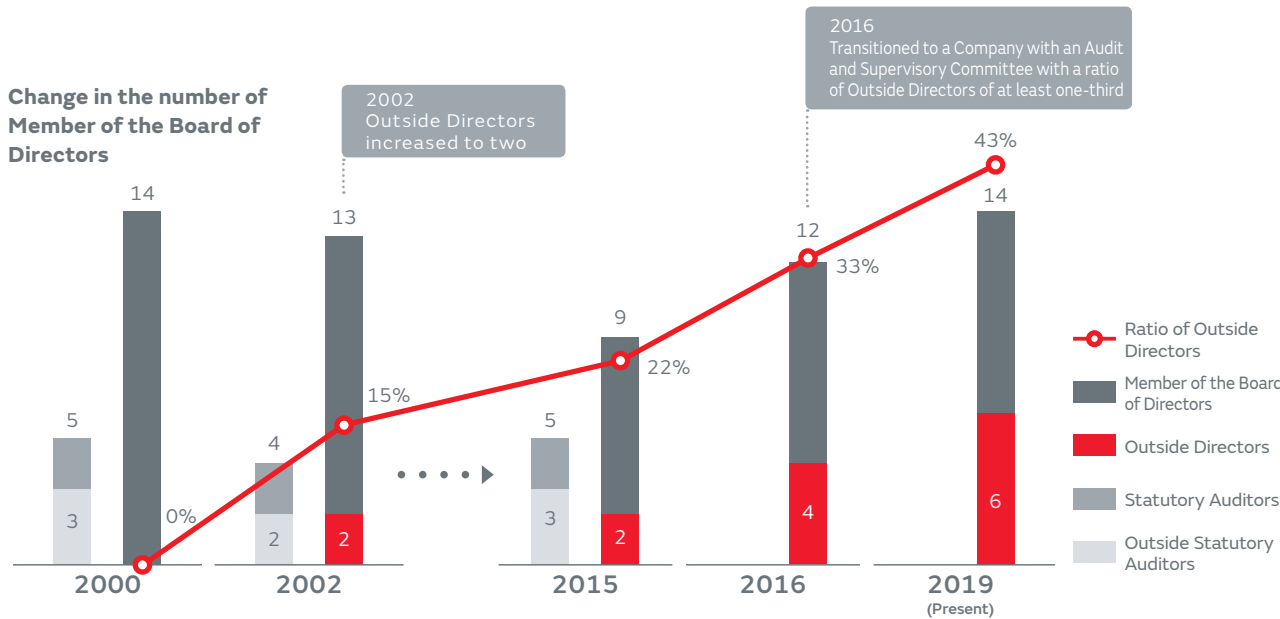
Our basic views and initiatives to date on corporate governance

Murata considers corporate governance to be one of the highest priorities in management, and we work constantly to establish and operate optimal management systems that will realize sound corporate growth and development while taking into consideration every stakeholder.

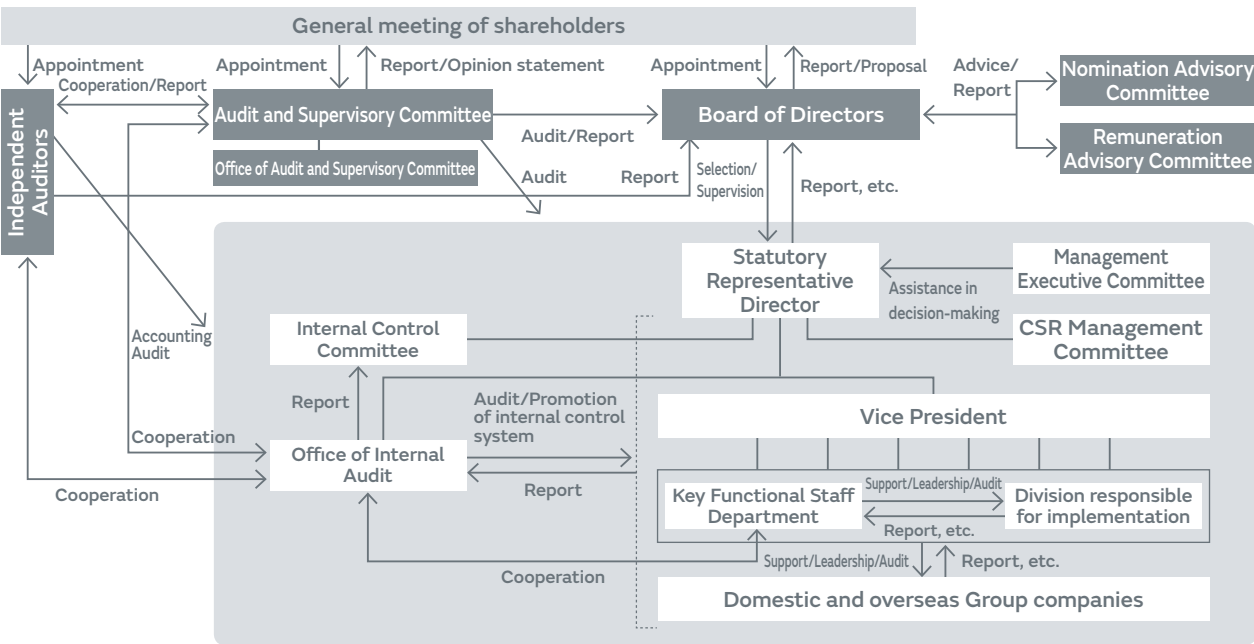
Based on the idea that it is important to adopt “perspectives from outside the Company,” we first appointed Outside Statutory Auditors in 1971 and Outside Directors in 2001. In recent years, we have enhanced the diversity of Outside Directors and increased the ratio of Outside Directors. After transition to a Company with an Audit and Supervisory Committee in 2016, the ratio of Outside Directors is at least one-third. In addition to appointing outside executives, we are making efforts to strengthen our corporate governance by steadily taking measures as below, in order to strengthen executive and supervisory functions and increase the transparency of management.

History of initiatives to strengthen corporate governance

2000	● Established a Vice President system and declared the appointment of Outside Directors ● Established the Management Executive Committee
2001	● First appointed Outside Directors *In 2002, the number of Outside Directors was increased to two. *In 1971, we first appointed Outside Statutory Auditors. (We have had full-time Outside Statutory Auditors in the past.)
2002	● Established the Corporate Ethics Policy and Code of Conduct
2004	● Abolished the Directors’ retirement benefits system ● Established the Remuneration Advisory Committee ● Established the Internal Control Committee and the Audit Office (currently Office of Internal Audit)
2006	● Established the basic policy on the internal control system
2007	● Established the CSR Management Office
2008	● Established the CSR Committee (currently the CSR Management Committee)
2015	● Established the Corporate Governance Guidelines ● Established the Nomination Advisory Committee
2016	● Transitioned to a Company with an Audit and Supervisory Committee *Outside Directors represent more than one-third of the Directors.
2017	● Introduced a restricted share remuneration plan



Structure of corporate governance system



- Board of Directors**
The Board of Directors decides on our basic management direction and particularly important matters for execution, and supervises duties implemented by Member of the Board of Directors.
 - Audit and Supervisory Committee**
The Audit and Supervisory Committee audits duties implemented by Member of the Board of Directors and may state their opinions in relation to appointment and remuneration of Member of the Board of Directors at General Meetings of Shareholders.
Three of the Member of the Board of Directors who are Audit and Supervisory Committee Members possess a considerable degree of knowledge in the areas of finance and accounting. The Committee has one full-time member who shares information concerning the status of operations and corporate finances with part-time members.
 - Nomination Advisory Committee/Remuneration Advisory Committee**
These Committees have been established as advisory bodies for the Board of Directors in order to enhance its independence, objectivity, and accountability in relation to the nomination and remuneration of executives.
The members of these committees are selected by the Board of Directors from among Members of the Board of Directors, and include multiple Independent Outside Directors.
 - Management Executive Committee**
The Management Executive Committee has been established as a deliberative body to assist the Board of Directors and the Representative Director in making decisions. It is made up of executive Member of the Board of Directors and Member of the Board of Directors who concurrently serve as Vice Presidents, creating a system for deliberation on management issues specified by the Company regulations.
 - CSR Management Committee**
The CSR Management Committee has been established to continuously and systematically promote CSR management and further entrench CSR within the Company and serves as a main office to handle issues outside the Company.
 - Internal Control Committee**
The Internal Control Committee is responsible for the maintenance and continual improvement of the system to secure the appropriateness of company operations (the internal control system) and evaluates the status of maintenance and operation of the system.
 - Vice President**
In order to realize more rapid management judgments and more flexible execution, a Vice President system has been introduced, and our Vice Presidents execute their duties with authority and responsibilities.
- Composition of the Board of Directors and other main committees (as of June 27, 2019)**
- | | Number of members | Inside Director | Outside Director | Chairman, Committee Chairperson |
|---------------------------------|-------------------|-----------------|------------------|---------------------------------|
| Board of Directors | 14 | 8 | 6 | Inside Director |
| Audit and Supervisory Committee | 4 | 1 | 3 | Inside Director |
| Nomination Advisory Committee | 4 | 2 | 2 | Inside Director |
| Remuneration Advisory Committee | 4 | 2 | 2 | Outside Director |

Adoption of “Company with an Audit and Supervisory Committee” as a governance system

Murata Manufacturing Co., Ltd. adopted the Company with an Audit and Supervisory Committee structure as a corporate governance system.

In a Company with an Audit and Supervisory Committee, a Board of Directors may delegate decisions on important matters for execution to Executive Directors. By delegating each decision on matters for execution to Executive Directors, more rapid management judgment and more flexible execution can be realized, while the Board of Directors can focus on discussion and monitoring relating to management policy and business strategy, leading to enhancement of the functions of the Board of Directors.

In addition, Members of the Board of Directors who are Audit and Supervisory Committee Members hold voting rights on agendas at the Board of Directors and rights to express their opinions as the Audit and Supervisory Committee concerning appointment and remuneration of Member of the Board of Directors at General Meetings of Shareholders. We believe that this ensures strong supervisory functions by Executive Directors.

Corporate governance

Analysis and evaluation of effectiveness of the Board of Directors

The Company endeavors to improve the effectiveness of the Board of Directors by conducting an analysis and evaluation of the effectiveness of the Board of Directors as a whole once a year and discloses an overview of the procedure and results.

Analysis and evaluation process

A questionnaire for all Member of the Board of Directors and interviews with Outside Directors were conducted and the analysis and evaluation were conducted through multiple discussions in the Board of Directors, making reference to the results of the questionnaire and interviews.

Through conducting the questionnaire and interviews, various confirmations were carried out regarding the composition of the Board of Directors, agenda items submitted to meetings, status of deliberation, personal participation of Director, and other matters regarding the operation of the Board of Directors. In fiscal 2018, the implementation, tallying, analysis, etc. of the questionnaire was carried out by a third party.

Results of analysis and evaluation

The Board of Directors of the Company has been assessed to be functioning with sufficient overall effectiveness in consideration of its duties and obligations. The major details are provided below.

- An atmosphere that enables free expression of opinion is being cultivated and broadminded and constructive discussions and exchanges of opinion are taking place.
- The composition of the Board of Directors, the selection of agenda items and the supervisory functions of Outside Directors are being carried out with adequate effectiveness.

Note, there was an opinion related to the enhancement of risk management and the strengthening of the monitoring of business execution in relation to management policy and business strategy.

Based on these evaluation results, the Company will continue working to further improve the effectiveness of the Board of Directors.

Nomination of candidates for Members of the Board of Directors

Nomination policies

In consideration of the business content, scale, and management environment, etc., of Murata, personnel with knowledge, experience, and qualities that can contribute to enabling the Board of Directors to function (determination of basic management principles and important business execution, as well as supervision of execution of duties of Member of the Board of Directors) are nominated as candidates for Member of the Board of Directors taking into account the balance and diversity in the expertise, experience, and capabilities of the overall Board of Directors as a whole.

Additionally, in nominating candidates for Outside Directors, the Company seeks personnel across a wide and diverse range and works to secure candidates who satisfy the independence standards of the Tokyo Stock Exchange and Murata Manufacturing Co., Ltd.

In particular, with regard to candidates for Members of the Board of Directors who will be Audit and Supervisory Committee Members, as noted above, the Company nominates personnel with a wealth of knowledge and experience regarding management administration and business operations who have qualities that can contribute to improvement in the soundness and transparency of management and audit the business execution of Member of the Board of Directors from a fair and objective standpoint. At least half of the candidates for Members of the Board of Directors who are Audit and Supervisory Committee Members nominated by the Company are Outside Directors.

Nomination procedures

The Nomination Advisory Committee considers criteria for the nomination of candidates for Members of the Board of Directors, independence standards for Independent Outside Directors, nomination of candidates for Members of the Board of Directors, and nomination of candidates for Representative Directors and executive Members of the Board of Directors, and reports its findings to the Board of Directors.

The Board of Directors determines the nomination of candidates for Members of the Board of Directors based on the reported findings of the Nomination Advisory Committee. Nominations for candidates for Members of the Board of Directors who will be Audit and Supervisory Committee members are subject to approval by the Audit and Supervisory Committee.

Remuneration for Member of the Board of Directors

Policies regarding remuneration

With respect to remuneration for Member of the Board of Directors, Murata Manufacturing Co., Ltd. makes it a basic policy to provide a system and level of remuneration that is considered suitable for executive-level managers of a globally competitive electronic equipment and component manufacturer in order to ensure recruitment of human talent considered to be excellent based on a comparison with same-industry competitors, to raise the morale and motivation to improve financial results, and to contribute to the maximization of corporate value.

Remuneration for Member of the Board of Directors who are not Audit and Supervisory Committee Members is made up of (i) monthly remuneration, (ii) bonus with the aim of giving a short-term incentive, and (iii) share-based remuneration with the aim of making them further share values with our shareholders by giving a medium- to long- term incentive.

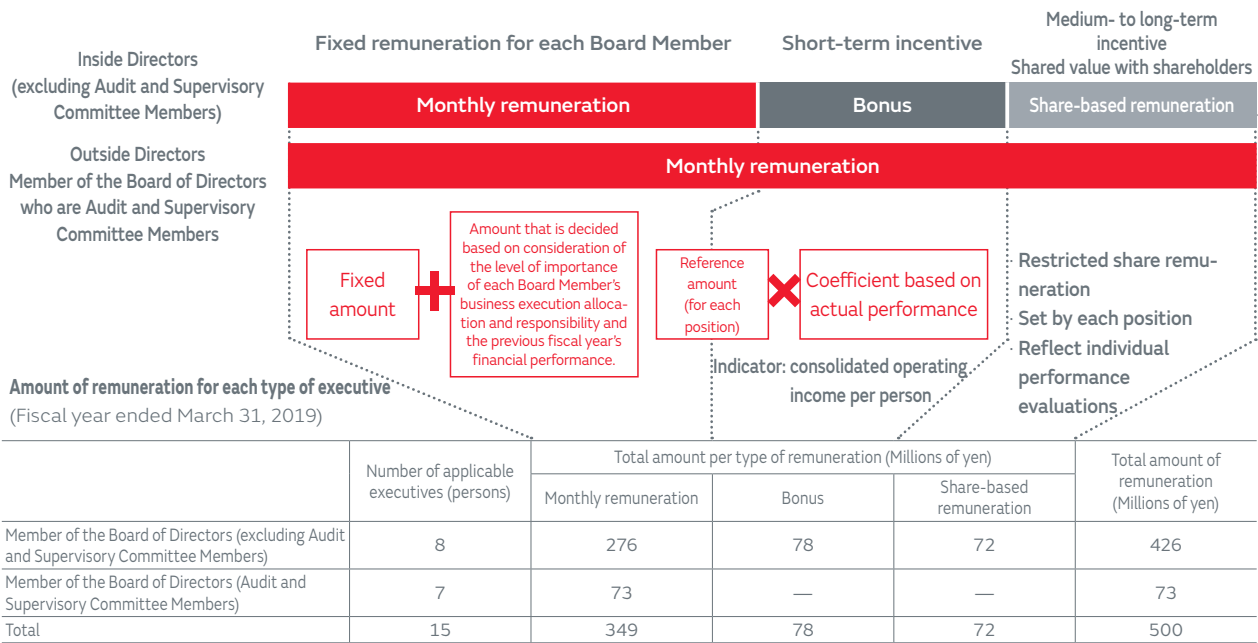
The remuneration paid to Outside Directors who are not Audit and Supervisory Committee Members and to Member of

the Board of Directors who are Audit and Supervisory Committee Members is only monthly remuneration. The amount paid to each Board Member who is an Audit and Supervisory Committee Member is decided as a fixed individual remuneration through discussion by the Members of the Board of Directors who are Audit and Supervisory Committee Members.

Procedures for determining remuneration

Remuneration Advisory Committee deliberates on the remuneration system and levels for Member of the Board of Directors and reports its findings to the Board of Directors. The Board of Directors decides on the standards regarding remuneration for Member of the Board of Directors based on the report from the Remuneration Advisory Committee.

Specific remuneration amounts are calculated in accordance with the remuneration standards. Individual remuneration of Members of the Board of Directors who are not Audit and Supervisory Committee Members is decided upon consultation with the Remuneration Advisory Committee.



(Notes) 1. The above number includes three Members of the Board of Directors who are Audit and Supervisory Committee Members who retired during the fiscal year ended March 31, 2019.
2. The total number of persons receiving compensation is cumulative. The actual number of persons eligible for compensation is 14.
3. The cumulative total number of Outside Directors is seven, and the actual number of persons eligible for compensation is six.
4. Out of the total shown above, total compensation, etc., provided to six Outside Directors, is 70 million yen.

Internal control system

The Board of Directors of Murata Manufacturing Co., Ltd. has defined a basic policy regarding the maintenance of a system to secure the appropriateness of company operations (internal control system). Based on this, the Company works to appropriately maintain and operate the internal control system.

The Murata Manufacturing Group shares Murata Philosophy that acts as a fundamental management policy, and in order to embody it, we have defined a fundamental policy and code of conduct, which have been distributed across the Group. In addition, we have established regulations and procedures regarding decision making. Based on these, deliberations are made regarding the business operations of subsidiaries, in addition to sharing various

information regarding business operations of the Murata Manufacturing Group. Divisions that supervise the various business functions (general administration, personnel, accounting, etc.) of the Murata Manufacturing Group define frameworks, processing procedures, and judgment standards for duties to ensure that duties within the Murata Manufacturing Group are performed appropriately and efficiently, in addition to providing appropriate direction to subsidiaries as required. As an independent body, the Internal Audit Department (Office of Internal Audit) evaluates and monitors whether or not duties within the Murata Manufacturing Group are conducted appropriately and efficiently, adhering to laws and regulations and the internal regulations, etc. of the Company.

Summary of the Criteria for Independence

- (1) The person is not an executive of the Company or its current subsidiary or a company that was a subsidiary within the past three years.
- (2) The person is not currently a major shareholder or an executive of a major shareholder.
- (3) The person is not an executive of a company, etc., that is currently a significant client or supplier or was a significant client or supplier within the past three years with the Company or its current subsidiary.
* "Significant client or supplier" refers to one with which the Company has transactions of 2% or more of consolidated net sales of the Company or of the client or supplier.
- (4) The person is not an executive of an organization that has received within the past three years a donation or grant of over 10.00 million yen per annum from the Company or its current subsidiary.
- (5) The person is not an executive of a company or a subsidiary of that com-

- pany, that employs or has employed within the past three years a Board Member, Statutory Auditor, or Vice President of the Company or its current subsidiary.
- (6) The person does not have any significant transaction relationship with the Company, such as a consulting or advisory agreement, and has not had a significant transaction relationship in the past.
 - (7) The person is not an executive of the Independent Auditor of the Company.
 - (8) The person is not the spouse or a relative within the second degree of kinship, etc., of a Board Member, Statutory Auditor, or Vice President of the Company or its current subsidiary.
 - (9) The person does not carry the risk of creating a constant substantial conflict of interest between the Company's general shareholders as a whole for reasons other than those considered in (1) through (8) above.



Executives
(As of October 1, 2019)

Members of the Board of Directors * indicates Representative Director

Tsuneo Murata 1

Chairman of the Board and President*
Nomination Advisory Committee Member (Committee Chairperson)
Remuneration Advisory Committee Member
Tsuneo Murata has been involved in the running and management of business and sales divisions in and outside of Japan, accumulating a wealth of experience and a solid record of achievement.

Toru Inoue 2

Member of the Board of Directors*
Toru Inoue has been involved in business management, planning, and accounting, accumulating a wealth of experience and a solid record of achievement.

Norio Nakajima 3

Member of the Board of Directors*
Norio Nakajima has been involved in technology development and business management, accumulating a wealth of experience and a solid record of achievement.

Hiroshi Iwatsubo 4

Member of the Board of Directors
Hiroshi Iwatsubo has been involved in technology development and business management, planning, and sales, accumulating a wealth of experience and a solid record of achievement.

Yoshito Takemura 5

Member of the Board of Directors
Nomination Advisory Committee Member
Yoshito Takemura has been involved in accounting and financial duties, planning, and business management in the USA and Greater China, accumulating a wealth of experience and a solid record of achievement.

Ryuji Miyamoto 6

Member of the Board of Directors
Remuneration Advisory Committee Member
Ryuji Miyamoto has been involved in legal, human resources, and other administrative duties, accumulating a wealth of experience and a solid record of achievement.

Masanori Minamide 7

Member of the Board of Directors
Masanori Minamide has been involved in accounting, financial and corporate planning duties, and business management in Southeast Asia, accumulating a wealth of experience and a solid record of achievement.

Hiroaki Yoshihara 8

Outside Director
Nomination Advisory Committee Member
Hiroaki Yoshihara has worked as an executive and consultant at an international consulting firm, has extensive experience solving management problems for global companies, and has specialized insight in accounting.

Takashi Shigematsu 9

Outside Director
Nomination Advisory Committee Member
Takashi Shigematsu has extensive experience and insight as an executive in the manufacturing industry and the automotive industry in particular.

Takatoshi Yamamoto 10

Outside Director
Takatoshi Yamamoto has extensive experience of corporate analysis of companies in and outside of Japan as a securities analyst, particularly in regard to the electronics industry, and has specialized insight in finance and accounting, in addition to a wealth of experience related to global corporate management.

Yoshiro Ozawa 11

Member of the Board of Directors
Audit and Supervisory Committee Member (Full-time/Committee Chairperson)
Yoshiro Ozawa has been involved in accounting, finance, and personnel affairs in and outside of Japan, and has extensive experience and insight in these fields.

Hiroshi Ueno 12

Outside Director
Audit and Supervisory Committee Member
Remuneration Advisory Committee Member (Committee Chairperson)
Hiroshi Ueno has abundant experience and insight in government administration of such fields as tax and finance, as well as operation of Antimonopoly Act.

Hyo Kambayashi 13

Outside Director
Audit and Supervisory Committee Member
Hyo Kambayashi has been engaged in affairs concerning financial auditing, internal control advising, risk management, and strengthening governance for many years as a certified public accountant and executive and has extensive experience and insight in corporate accounting, auditing and internal control.

Yuko Yasuda 14

Outside Director
Audit and Supervisory Committee Member
Remuneration Advisory Committee Member
Yuko Yasuda has engaged in introducing, assessing, and developing CEOs and evaluating the effectiveness of the Board of Directors for many years as a Japan Director at companies that search for corporate executive candidates, and she has extensive experience and insight in fields concerning executive personnel assessment, development and corporate governance.

Vice Presidents

25, of whom six concurrently serve as Member of the Board of Directors

Senior Executive Vice Presidents	Vice Presidents
Toru Inoue	Toshikazu Sasaki
Norio Nakajima	Shinji Nomura
	Takaharu Sakai
Executive Vice Presidents	Noriyuki Kubodera
Satoshi Sonoda	Hiroichi Kawahira
Hiroshi Iwatsubo	Toshihiko Okamoto
Yoshito Takemura	Yoshihiro Yamada
Norio Sakai	Toshinobu Yamazaki
Masahiro Ishitani	Tatsuo Bizen
	Harunobu Sano
Senior Vice Presidents	Shogo Hashimoto
Kenichi Mizuno	Yoshitaka Tanino
Hideki Maruyama	
Ryuji Miyamoto	
Nagato Omori	
Ken Tonegawa	
Masanori Minamide	



Interview with
Outside Directors

Achieve further leaps as a global company with
strength in a strong governance structure

We have asked Mr. Hiroaki Yoshihara, an Outside Director who has worked on enhancing Murata’s governance for years, and Ms. Yuko Yasuda, who was newly appointed as an Outside Director and Audit and Supervisory Committee Member last year, to discuss Murata’s current situation and issues.

manufacturing sites, and through the tours, I experienced the precision in the manufacturing process only capable at Murata, as well as the magnitude of the business scale.

What is expected of Outside Directors

Yasuda: What I value the most is to watch over the execution status and provide support, while maintaining objectivity. Especially because I am the first female Director, I personally would like to contribute to supporting the success of women from the perspective of diversity. In addition, I hope to provide support for operating corporate governance appropriately in line with global standards and developing leadership based on my experience of working on services for Boards of Directors and development of leaderships at a global consulting firm.

Yoshihara: Actually, when I was asked to be appointed as an Outside Director by Mr. Yasutaka Murata, the former President, he passionately told me, “I would like to develop Murata into a company truly valued on a global stage, while maintaining Murata’s strengths. I would like your support in accomplishing this.” I remember very well feeling Murata’s strong will to become a true global leader at that time. The role that is expected of me, who has been working on solving management issues at global organizations over the years, is to provide meaningful support in terms of both management’s decision-making and execution processes, so that Murata can execute high quality growth strategies. With Murata’s ratio of sales outside of Japan to net sales exceeding 90%, we must identify and evaluate management issues and risks from a global perspective.

Issues regarding governance

Yasuda: I was impressed by the fact that ideals for corporate governance, as well as the stance of Murata Manufacturing Co., Ltd., are well thought out. I have the impression that the Company is diligently working on the Corporate Governance Code, such as by making regular opportunities for the Representative Directors and Outside Directors to directly communicate with each other. In addition, the effectiveness of the Board of Directors is evaluated humbly and strictly.

If I must point out an issue, I would suggest disclosing these honest initiatives to external parties more proactively. In recognition of the fact that we are globally focused, Murata should disseminate not only its excellent technologies and innovations, but also its sincere efforts toward governance as a company.

Yoshihara: I believe Murata is in a period of transition. While our business has grown rapidly on a global scale with the sales tripling over the past 10 years, the current management environment contains a complex mixture of risks and opportunities, including uncertain international circumstances and acceleration of technological innovations such as the IoT, AI, and 5G.

In light of this management environment, I believe Murata largely has four issues regarding governance. First of all, to continuously review and evolve its business portfolio with an awareness of competitive advantage; second, to further strengthen its R&D capabilities for creating breakthroughs in the market; third, to strengthen recruitment and development of diverse human resources who can succeed globally; and fourth, to establish smarter supply chain management and management foundations on a global scale, including monozukuri (manufacturing) and demand forecasting. I believe there are great expectations from our stakeholders as to how much we can continuously improve our corporate value over the medium to long term by formulating and executing management strategies toward these issues.

How Murata should be as a company going forward

Yasuda: I would like Murata to continue maintaining its stance of achieving growth through its unique technologies and products. Amid technological innovations, I believe many issues still remain in new businesses. In addition, I hope Murata will further strengthen its efforts toward sustainable growth while recognizing issues found in past PMI (post-merger integration: the integration process af-

ter the completion of a merger or acquisition).

Inheritance of the Murata Philosophy is also important. The past management teams have valued the intentions of the founder, practiced them by demonstrating leadership, and strived to instill the Murata Philosophy across the Company. I would like the Company to continue valuing the Murata Philosophy based on the spirit of foundation, and share it with companies that newly became subsidiaries through mergers and acquisitions.

Yoshihara: To be honest, I believe Murata is already an excellent company at the moment. In the 75 years since its establishment, Murata has grown and developed in the global market while valuing the strong passion engrained in the Murata Philosophy. With companies being expected globally to contribute to resolving social issues including the SDGs, Murata’s corporate goal of being an “Innovator in Electronics,” which aims to contribute to the achievement of people’s enriched lives in a true sense, is the representation of the Company proactively working to fulfill these expectations.

What stakeholders expect from companies evolves along with the times. What Murata is expected to be is to continuously improve its corporate value by recruiting and developing diverse human resources, having each and every employee strongly recognize the Murata Philosophy, and achieve innovations and breakthroughs in perpetuity in all processes of global organizations toward contributions to solving social issues with strong passion in daily work, in order to meet those expectations.



Mr. Hiroaki Yoshihara
Outside Director
Nomination Advisory Committee Member

Ms. Yuko Yasuda
Outside Director
Audit and Supervisory Committee Member,
Remuneration Advisory Committee Member



Basic view

In order to minimize loss by emergence of risks and improve sustainable corporate value of the entire Group by managing various internal and external risks related to business activities, Murata periodically carries out initiatives to classify and evaluate risks, take preventative measures, and reduce loss in case of emergency.

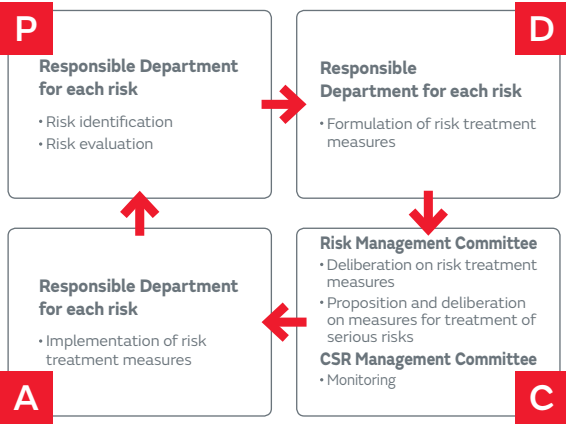
Promotion structure

Murata Manufacturing Co., Ltd. has established a Risk Management Committee as a subordinate body of the CSR Management Committee chaired by the Representative Director. This committee is chaired by a Vice President and comprises Directors from departments of General Affairs, Personnel & Industrial Relations, Corporate Communications, Intellectual Property, Environmental Affairs, Information Systems, and Legal Affairs. Together, the committee members study ways to address risks Company-wide. We have also established the Information Security Subcommittee and BCM* Subcommittee as subordinate organizations to study and take measures to address particular risks.

*BCM (Business Continuity Management)
Management activities that are operated on an ongoing basis to formulate, maintain, and renew the BCP (Business Continuity Plan), to allocate budget and resources for business continuity, to take preventative measures, and to conduct, check, and continually improve education and training for permeating initiatives.

Understanding risks

Responsible Department for each risk identifies and evaluates risks that Murata actually faces and will possibly face in the near future and formulates treatment measures twice a year. The Risk Management Committee deliberates those contents, and, if necessary, instructs additional measures. Each risk is classified in accordance with its frequency and impact so that management understands more important and urgent risks to take appropriate risk treatment measures.



Our initiatives

● Information security

For Murata to continue to grow, it is essential to protect information that is a Company asset, which includes technological knowhow and other confidential corporate information. Accordingly, by establishing an organization for information security, we are working to carry out development and implementation of information security measures throughout the Company.

Apart from establishing the Information Security Policy and the Information Security Management Regulations, in order to have all executives and employees in and outside of Japan understand information security and correctly handle information, we have distributed the Information Security Guidebook, which was published in three languages (Japanese, English, and Chinese), issued e-mail magazines regarding information security, and conducted internal training.

In addition, in order to prevent leakage of Murata's confidential corporate information and personal information, as well as stoppage of corporate activities due to cyberattacks, we have implemented anti-malware measures in computers and services throughout the Company, reviewing and controlling access of Internet communications, and vulnerability diagnoses and relevant responsive measures. Furthermore, we are promoting responses and measures to cope with cyberattacks that change by the day by globally monitoring a variety of logs and establishing response frameworks against incidents that could become security accidents.

● Countermeasures against natural disasters

A major natural disaster has the potential to bring business to a stop for extended periods. Consequently, Murata takes various measures to ensure that business continues with minimal damage and that we can provide customers with a stable supply of products. We have established a Business Continuity Plan (BCP), ensured earthquake resistance and safety for buildings and production facilities, constructed backup frameworks for our communications and information systems, and implemented stockpiling.

In procuring materials, we have made efforts to implement speedy initial responses by making databases of suppliers and production locations of materials and establishing initial response systems and initial response flows in anticipation of risks so that procurement activities do not stop when risks such as natural disasters materialize. Furthermore, with regard to important materials, we have secured multiple vendors and confirmed the BCP response status at suppliers as measures for stable procurement. We are promoting initiatives such as securing inventory in consideration of the recovery period that is expected to be required when risks materialize.

In addition, by regularly carrying out disaster drills and business continuity drills, we are working on verification of the effectiveness of our initial response and its continual improvement, enhancement of crisis response capabilities, and detection of improvements to be made to BCP.



Corporate Ethics Policy and Code of Conduct

In July 2002, Murata Manufacturing Co., Ltd. established the Corporate Ethics Policy and Code of Conduct. In April 2007, this was revised in light of CSR. Murata pledged and declared its intention to work as one in doing what needed to be done for stakeholders and society.

This revised edition of the Corporate Ethics Policy and Code of Conduct has been distributed to Murata Manufacturing Co., Ltd. and its affiliates in Japan. We have also created English and Chinese versions, which were distributed to all our locations outside of Japan in September 2007, adjusted to take into account laws and ordinances and social systems of their respective locations, and which have been distributed to all our employees.

Working toward the construction of a global compliance system

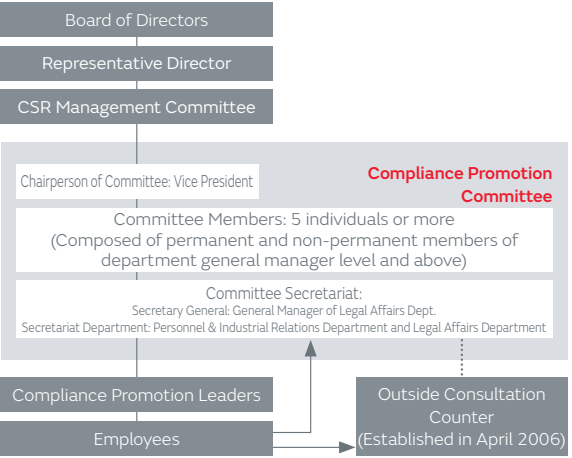
In May 2014, Murata Manufacturing Co., Ltd. established the "Basic Policy for Prevention of Cartels and Bribery." Although cartels and bribery are also prohibited in the "Corporate Ethics Policy and Code of Conduct," as a company that develops its business globally, we again disseminated Murata's basic stance on cartels and bribery throughout Murata Manufacturing Group.

Creating a compliance promotion system

Murata Manufacturing Co., Ltd. has established a Compliance Promotion Committee, a subordinate body of the CSR Management Committee chaired by the Representative Director. We are deliberating on, and making decisions regarding, the basic direction for revisions to the Corporate Ethics Policy and Code of Conduct, and the draft and implementation of publicity activities.

The decisions made by the Committee are deployed to the entire Group through compliance promotion managers assigned at affiliated companies in and outside of Japan.

Compliance promotion system (As of April 1, 2019)



Whistle-blowing system and consultation hotlines

Murata has established an internal hotline to take whistle-blowing reports and consultations if an act within Murata that violates or could violate the Corporate Ethics Policy and Code of Conduct is discovered.

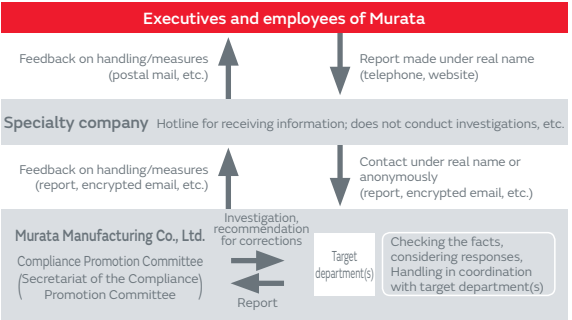
In addition, we have established an environment that makes whistle-blowing easier by also setting up an outside hotline to take these kinds of whistle-blowing reports and consultations for the prevention, early detection, and prompt handling of compliance violations.

Taking whistle-blowing reports and consultations, and checking, investigating, and responding to them

When a whistle-blowing report or consultation about compliance is received by the internal or outside hotline, the Compliance Promotion Committee, the Chairperson of the Committee, and the Secretariat of the Committee lead the response. Coordinating with relevant departments as necessary, they check and investigate as far as possible all the facts and the relevant laws and regulations. On that basis, the existence or nonexistence of a compliance violation is recognized and response measures such as recommendations for correction are taken as necessary.

When reports are received under a real name, feedback on the progress and results of checking and investigation is given appropriately while taking care to ensure the whistle blower does not unjustly face negative consequences as a result of blowing the whistle.

Process of receiving whistle-blowing reports and providing feedback



Technologies

For Murata to continue to create new value, we must keep innovating technologies constantly. Murata has built an integrated system of production from raw materials to finished products and is developing technologies into platforms so that we can independently research, develop, accumulate, and apply a fundamental technology base to product development. In addition, we proactively collaborate with outside parties with the aim of creating new markets and innovations.

Introduction of the R&D framework

Murata has built an integrated system of production from raw materials to finished products. The Company's research and development activities also range from materials development to product design technology development, production technology development, software development, and analytical technology development. We strive to improve group-wide development efficiency by developing acquired elemental technologies as platforms and rolling them out across the Group. We also actively conduct joint research with external research institutions and are acquiring new technologies in anticipation of the future.

In the Components segment, we are driving the development of multilayer ceramic capacitors, noise suppression products, timing devices, sensor devices, RF components, batteries, etc., with the key words of miniaturization, slimming-down, and higher heat resistance. In the Modules segment, we are driving the development of communication modules, power supply modules, multilayer resin substrates, etc., with the key words of miniaturization, higher

functionalities, multi-functionalization, and lower power consumption. In the Communication Modules segment, we are promoting the development of technologies to meet needs in safety and energy management, particularly in the automotive market. In the Research and Development Department, we are developing new technologies and products especially for the automotive, energy, healthcare/medical, and IoT markets, with the goal of cultivating new markets and driving innovation.





















Murata's research and development framework consists of the Corporate Technology & Business Development Unit, Production Engineering Unit, Components Business Unit, Module Business Unit, and Medical Products Department. The business units and business promotion departments are mainly engaged in technological development for product types that they oversee, and the development of new products. The Corporate Technology & Business Development Unit and Production Engineering Unit mainly focus on technological development for new business creation, as well as the development and platform creation of elemental technology.

Platform technologies and core technologies

Murata has five platform technology domains, and each platform technology is comprised of several core technologies. Each core technology has been

refined over a long period within Murata, and has become a source to differentiate from competitors and create technological innovations.

Platforms

Materials technology	 Materials design	 Materials processing				
Front-end process technology	 Laminating & stacking	 Printing	 Sintering	 Nano & thin film fabrication	 Surface finishing	 Precision mechanical processing
Product design technology	 High frequency design	 Device design	 Embedded	 High reliability design	 Circuit design	 Simulation
Back-end process technology	 Packaging	 Measurement	 Automation	 Industrial engineering		
Analytical technology	 Materials characterization	 Failure analysis				

Materials technology

Materials technology is the technology to simulate and model material composition, crystal structures, and electrical properties, as well as to disperse and combine these materials while controlling ceramic particle sizes and crystal structures.

al materials, structural engineering, and software; technology to design systems by utilizing both circuit design and embedded software design; technology to achieve high reliability under harsh environmental conditions; technology to optimize parts compositions in order to achieve high efficiency and small circuits; and simulation technology to analyze electromagnetic fields, heat, and stress.

Front-end process technology

Front-end process technology includes the technology to laminate and align small and uniform crystal particles by forming them into dielectric sheets in a submicron size or less with high precision; technology to thinly and accurately form internal electrodes and wirings on ceramic sheets using methods such as screen printing; technology to create ceramics with desired crystal structures by precisely controlling temperature and atmosphere; technology to form thin films on a submicron level using lithography and etching; technology to improve surface properties of electronic components while controlling electrochemical parameters using plating technology; and technology to form highly precise and complex structures using injection forming and press forming.

Back-end process technology

Back-end process technology includes the technology to achieve miniaturization and high reliability of devices through high-heat resistance connections and air-tight sealing; technology to quickly and accurately measure electronic properties and other characteristics of products; technology to design equipment that transports extremely small products in different shapes at high speed and with low damage; and technology to improve productivity by analyzing manufacturing methods and scientifically managing them.

Product design technology

Product design technology includes the technology to design RF components and modules while considering complex electromagnetic couplings and circuit constants within the circuit; technology to achieve high performance and small devices using function-

Analytical technology

Analytical technology includes the technology to physically and electronically evaluate material compositions through non-destructive analysis, heat analysis, organic and inorganic analysis, and surface analysis; and technology to identify the cause of failures occurred in materials and products through the abovementioned analytical methods.

Close Up!

Murata develops millimeter wave (60GHz) RF antenna module contributing to the creation of next-generation high-speed wireless networks

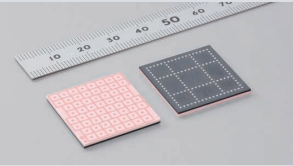
In recent years, the need is growing for faster Internet communication in line with the increase in bandwidth required by Internet contents such as ultra-high definition (HD, 4K) video, augmented reality (AR), and virtual reality (VR). On the other hand, constructing wired networks that cover wide areas requires enormous amounts of cables and labor, and the costs of constructing and maintaining this infrastructure are also considerable.

To respond to these needs, Murata has commercialized and begun mass-production of an RF antenna module that realizes broadband communications required for creating the next-generation high-speed wireless networks.

Thanks to the use of an independently developed LTCC* substrate which realizes stable communications quality as well as high heat resistance and high moisture resistance, it performs well in outdoor applications such

as in the base stations of telecommunications carriers. Furthermore, the new module is anticipated to be utilized in a wide range of applications such as for communication between mobile phone base stations including next-generation 5G wireless communication, for communication between wireless LAN hotspots, and for use in wireless communication networks in smart cities.

Murata will contribute to the creation of next-generation networks by developing various communication modules with an eye to the response to even faster wireless LANs and the next-generation 5G wireless communication standard.



* Abbreviation of Low Temperature Co-fired Ceramics: Refers to ceramics fired at temperatures of 1,000°C or lower

Human resources

Murata regards “employee motivation and growth,” which is the driving force of innovation, as the most important value regarding human resources. Employee growth and innovation will be achieved by creating an environment in which collective strength as Murata is demonstrated by diverse employees working autonomously and cooperating as a team.

Recruiting diverse personnel

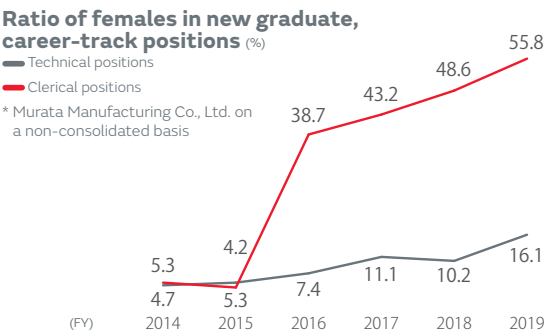
Murata regards diversification of methods to approach potential recruits and improving the quality of recruitment interviews as an important issue, with the aim of recruiting human resources who will support Murata’s growth.

Recruiting international students from Greater China

As our business grows, it is becoming important to recruit personnel who can connect and deepen businesses in Japan and China. Accordingly, we have strengthened our efforts to recruit Chinese international students who live in Japan. Multiple locations in China have cooperated together to conduct joint briefing sessions and interviews within Japan by local Chinese employees. As a result, the number of recruits increased significantly, to roughly triple the number in a typical year. We will analyze this year’s results and continue our efforts more strategically.

Supporting the success of women

We have set a female ratio target for recruiting new graduates for career-track positions. By conducting a variety of recruitment activities specifically targeting female recruits, such as conducting “Seminars for Rikejo (Rikejo is woman who majors in science)” at each university, distributing “Pamphlets for Rikejo,” and holding “Job fair” with only female recruiters, we achieved a ratio of 16.1% for technical and 55.8% for clerical positions in fiscal 2019. Because we have been able to stably recruit women with a ratio of at least 40% for clerical positions, we have determined that we are beyond the phase in which initiatives should be implemented with a set target. Going forward, we will promote initiatives by focusing on recruitment targets for female students in technical positions.

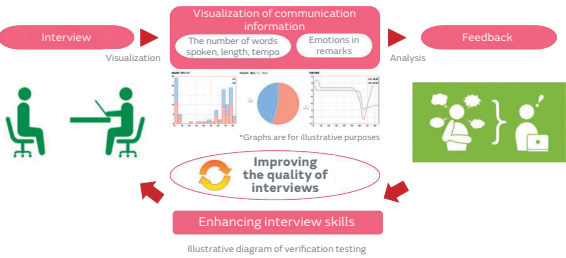


Improving the quality of interviews by using NAONA

Improving the quality of interviews is an important factor in recruiting diverse human resources. We have begun to introduce NAONA, a sensing data platform developed at Murata, to recruitment interviews. NAONA visualizes communication* by sensing factors such as the number of words spoken at interviews, tempo, and emotional values. We have learned through verification testing that promotion of mutual understanding between applicants and interviewers at interviews is affected by the way interviewers communicate.

Going forward, we will implement interviewer training programs with the aim of improving interviewers’ skills, referencing NAONA’s data. Through these initiatives, we will conduct interviews of higher quality.

*NAONA conducts edge processing on the device side, and deletes the original data after converting the contents of conversations into voice characteristic data. Accordingly, it does not record the contents of conversations or personal data on servers.



Developing human resources globally

Murata calls for improvement of Ability to grow by individual employee, Ability to Foster by superior, and Ability to Nurture by Company to foster in its Policy on Human Resource Development. Based on this policy, Murata implements measures to create a corporate culture for growing and developing together.

Promotion of global talent management

Due to the expansion of production and mergers and acquisitions outside of Japan, the ratio of employees outside of Japan has reached 60%. Accordingly, it has become our urgent mission to strengthen human resources development not only in Japan, but also globally. Consequently, we have held global human resources meetings since fiscal 2013 in order to discuss and execute various measures including promotion of talent management along with staff in charge of human resources at offices outside of Japan.

Setting Global Leadership Competency (GLC)

- Clarifying required competencies for global leaders of Murata

Establishing leader development programs for the next generation

- Creating a structure in which matters regarding leader development is shared throughout the world with programs at the Head Office and each region
- Participation by employees from all over the world in programs at the Head Office

Introducing global unified evaluation system for managers

- Introducing a system that incorporates GLC in order to instill a culture that values human resource development

Going forward, we will continue to disseminate GLC as globally shared human resource requirements while applying it to global human resource development and allocation of the right people in the right positions.



Human resource development through regional cooperation

We recommend initiatives in which our Group companies cooperate to develop human resources, promoting growth through mutual learning.

In fiscal 2007, we established a job rotation system that seeks to put the right person in the right place on a global level. As of fiscal 2018, this system has dispatched a total of 517 local employees at locations outside of Japan to Japan or to subsidiaries in other countries.

Another activity conducted by region is the “Murata ASEAN Alliance” (MAA). MAA began with the purpose of strengthening value creation capabilities by further enhancing the strengths each company has. In the beginning, we conducted mutual visits among Singapore, Malaysia, and Thailand, enabling them to learn from each other’s examples and incorporate them. Later, more countries such as Philippines and Vietnam joined, conducting initiatives to improve competencies of personnel, organizations, and functions strategically. Specifically, we are conducting leadership development programs and jointly developing programs in which next-generation leaders in the ASEAN region can learn the shared values of Murata and gain business execution capabilities as leaders.

Going forward, we will continue personnel rotation on a global scale so that Murata as a whole can achieve improved cooperation.



Creating an environment in which employees can work comfortably

Murata’s growth foundation is based on each and every employee across the world working safely and vibrantly, both in terms of physical and mental health. Accordingly, we are implementing the following measures.

Health and Productivity management

In order to sincerely engage in nurturing employees’ physical and mental health, which is a foundation of a company, amid the changing business environment, we established the Murata Healthy Management Plan in fiscal 2019 as a medium-term policy.

In Japan, we have strived to secure full-time occupational physicians, and we currently have 14 physicians in place. In addition, we have completed combining the health insurance cooperatives and established an environment to practice collaboration with the health insurance cooperative. With the President’s health declaration as the first step, we will aim to nurture the health of employees and their families and create workplaces in consideration of workability. We have established a system for healthy management, practicing and evaluating health measures based on scientific analysis, enhancing stress management, and improving health literacy as our pillars of initiatives.

Health and safety

We have promoted health and safety activities in order to create a workplace environment in which employees can work comfortably. While the number of industrial accidents has improved since fiscal 2017, it has not decreased dramatically. We have recognized some issues to be addressed as a company, including the fact that safety education is not sufficiently keeping up with the rapid increase in the number of employees as a result of a drastic expansion of business due to mergers and acquisitions, as well as a shortage of managers and supervisors.

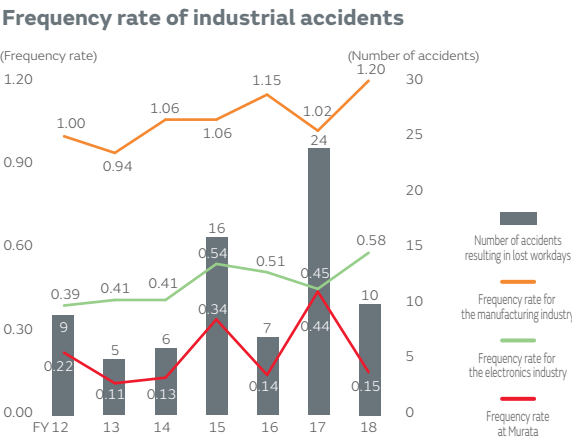
Accordingly, we will deploy measures from various aspects going forward, including holding of health and safety events, fostering of safety culture through

the Health and Productivity management approach, improvement of the health and safety training system, review of the risk assessment system, implementation of safety evaluations by outside consultants, and development of staff to take responsibility for the next generation. We will aim for a workplace environment in which health and safety comes first and improvement of employees’ sensitivity toward dangers and risks, through both “obligation of safety consideration” whose responsibilities lie with management and “obligation of self-health” whose responsibilities lie with the employees themselves.

Promoting work style innovation

In order for Murata to sustainably develop going forward, it is essential to further improve productivity and create an environment in which value creation can be conducted by employees who are healthy both physically and mentally, working for the appropriate number of hours. We believe we can achieve an environment in which diverse human resources can work actively with a sense of fulfillment by promoting a work style that does not rely easily on overtime work. To this end, Murata Manufacturing Co., Ltd. has introduced a remote working system to improve productivity, implemented measures to improve work process and workplaces, and created opportunities to exchange opinions on work styles at the workplace.

Additionally, in April 2019, the Company opened “the Kaede nursery” in Nagaokakyo City and “the muRata Yumenomori nursery” in Izumo City as company-run nurseries. They are aimed at supporting a smooth return to work for employees that took maternity or childcare leave, and supporting diverse work styles for employees who wish to work while raising their children.



Culture of leveraging diverse individual strengths and collaboratively working together

Murata regards diversity and inclusion as accepting and leveraging not only visible diversity such as gender, age and race, but also invisible qualities and strengths such as thoughts, knowledge, experiences, and viewpoints. We are implementing initiatives to develop a culture focused on mutual trust and cooperation.

Instilling the Murata Philosophy that connects diverse individuals

We are working on instilling the Murata Philosophy in order to create a foundation for diverse individuals to demonstrate their abilities in teams.

In February 2019, we collected examples of practicing the Murata Philosophy at a global meeting. At many locations, thoughts were given to which element of the Murata Philosophy is valued in each employee’s work. For example, Kanazu Murata Manufacturing Co., Ltd. offered an example of introducing a new system in cooperation with a business partner. As a result of mutual efforts, they achieved streamlining and energy-saving in material intake, production, and shipping work, creating a win-win relationship. Looking back, this was an achievement stemming from the “scientific approach” and “together with all our stakeholders” in the Murata Philosophy.

In addition, when we welcome new employees who have joined Murata as a result of recruitment or mergers and acquisitions, we value cultivating the understanding of and empathy toward the Murata Philosophy. We have worked to instill the Murata Philosophy at companies that joined the Group in recent

years through mergers and acquisitions, such as Ise Murata Manufacturing Co., Ltd. and Tohoku Murata Manufacturing Co., Ltd. We will have the entire Group recognize the importance of sharing common values and promote these activities in order to create new value through cooperation between individuals.



Interview

“What the Murata Philosophy and Primattec’s philosophy both strive to achieve”

Because I was fond of Primattec’s philosophy, I could not bring myself to read the Murata Philosophy for a while. Because I had thought a company’s philosophy is the judgement criteria for everything about work rather than something superficial, I could not take the change in philosophy lightly. When I participated in a training with this feeling in mind, I saw an executive from the Head Office speak his thoughts on the Murata Philosophy with a strong passion. Learning that Murata also has people who feel strongly passionate about the company’s philosophy like myself, I decided to carefully read the Murata Philosophy again.

I realized there are several things in common between the Murata Philosophy and Primattec’s philosophy, which are “to create innovative products and solutions,” “to create and provide new value that has not existed so far,” and “to enrich oneself and others.” I particularly like “together with all our stakeholders, thankful for the increase in prosperity,” which stresses a humanizing element. I truly felt that the two companies, which were separate companies, are facing the same

Ise Murata
Manufacturing Co., Ltd.
(former Primattec Inc.)
Toshikazu Amaoka

direction. With this passion, I made a speech about the feeling of gratitude as the employee representative at the recruitment ceremony this year. I hope I was able to convey a part of the vision engrained in the Murata Philosophy to the new employees. By understanding the Murata Philosophy together with my colleagues, I would like to utilize our respective experience and knowledge under the shared values.

Environment

To pass onto our children a bountiful mother Earth, and to ensure sustainable co-existence and shared prosperity for Murata and other citizens of our planet, we are committed to environmental protection activities centered on an Environmental Committee and Global Warming Prevention Committee covering all environment-related departments. In addition to reducing the environmental impact of our business activities, we have positioned environmental protection as one of our priority risk treatment measures in the process of long-term value creation.

Climate change policies

To date, Murata has established in-house standards for energy saving, and is developing measures to combat climate change through proactive investment in energy-saving systems.

Murata has also been highly evaluated by external institutions. We were awarded by CDP^{*2} in recognition of our third-party accreditation for greenhouse gas (GHG^{*1}) emission volumes and our proactive disclosure initiatives.

However, greenhouse gas emission volumes have been increasing rapidly due to increased production amid the recent expansion of operational scale, as well as engagement in large-scale mergers and acquisitions and development of new businesses. To halt and roll back the upward momentum in greenhouse gas emissions, we have set up a Global Warming Prevention Committee chaired by a Member of the Board of Directors, and promoted initiatives to conserve energy with the aim of achieving the greenhouse gas reduction target based on the Science Based Targets (SBT^{*3}) approach.

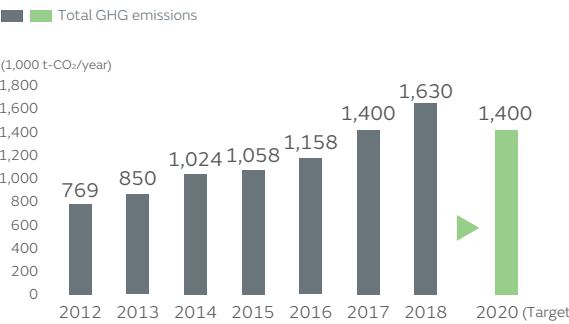
Going beyond conventional energy-saving measures centered on facility investment, we have also set up a new energy management system that combines proprietary sensor and IoT technologies, and have begun to optimize energy use within production processes.

We will also participate in the Japan Climate Leaders' Partnership, a grouping that ambitiously addresses climate change issues in Japan. Drawing on external expertise, we will launch our own in-house activities and consider the establishment of businesses that contribute to global climate change policymaking through collaborations with enterprises participating in this group.

These initiatives will be discussed in greater detail on our website.

^{*1} Greenhouse gas: Refers to gases that cause the greenhouse effect.
^{*2} Carbon Disclosure Project: An international NGO (non-governmental organization) that investigates, evaluates, and discloses initiatives on the environment conducted by companies and cities.
^{*3} Science Based Targets: Scientific targets based on quantitative data regarding long-term scenarios for reducing greenhouse gases.

Trends of total GHG emissions



In fiscal 2018, energy conservation and streamlining efforts enabled us to reduce approximately 40,000 t-CO₂.

At the same time, factors including the incorporation of new business sites as a result of mergers and acquisitions in fiscal 2017 saw us generating total greenhouse gas emissions^{*4} of approximately 1.63 million t-CO₂ in fiscal 2018, a result that exceeded our target figure of 1.4 million t-CO₂ that we aim to achieve by 2021 based on SBT.

Taking these results into consideration, we will examine a variety of measures to enable us to achieve our SBT-based targets across the entire company, including new business sites acquired through mergers and acquisitions. These measures will include the introduction of renewable energy and carbon pricing in addition to energy conservation, and we will accelerate our implementation of such measures.

Third party accreditation^{*5}

Amid requirements for companies to implement initiatives against climate change, Murata believes that managing the amount of greenhouse gas emissions with reliable data certified by a third party and disclosing highly trustworthy data is our first step. Accordingly, we receive a third party accreditation regarding the amount of greenhouse gas emissions each year. In addition, we also receive certification on solar power generation, as we are proactively working on introducing it.

^{*4} Calculation method of total GHG emissions
^{*5} Third party accreditation
<https://www.murata.com/en-global/about/csr/environment/warming>

Introduction of renewable energy

Murata is working on increasing the ratio of renewable energy in the electricity consumed as a result of its business activities. As a global company, we have proactively promoted introduction of solar power generation, not only in Japan but also in other areas such as China. In fiscal 2018, electricity derived from renewable energy, including our solar power generation facilities, amounted to approximately 23 million kWh of electricity in total, which contributed approx-

imately 15,500t-CO₂ to our greenhouse gas reduction efforts. We will continue to consider introducing renewable energy globally with the goal of contributing to environmental load reduction. Furthermore, we are preparing a business launch utilizing an energy storage system so that we can contribute to expansion of renewable energy not only within the Company but also across society as a whole.

Topic

Release of All-in-One Energy Storage System

In June 2019, we began sales of All-in-One Energy Storage System that integrates a storage battery with FORTELION*, an olivine-type iron phosphate lithium-ion battery, and a power conditioner, so that users can have safety and peace of mind in case of emergency. By charging the storage battery with electricity generated from solar panels, the product can be utilized for a variety of purposes including emergency electricity supply and response to in-house consumption needs due to the end of FIT (feed-in tariff).

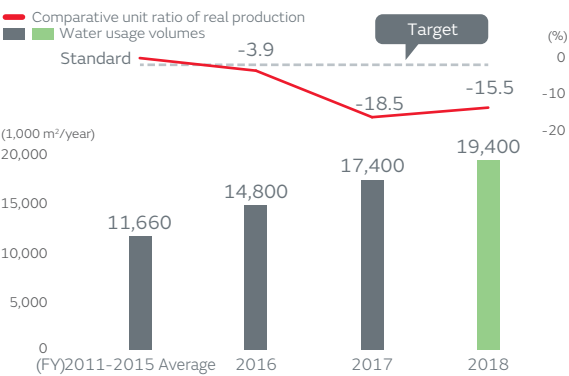
* FORTELION is a trademark of Murata Manufacturing Co., Ltd.
https://solution.murata.com/ja-jp/products/ess_residential

Water resource management

Murata encourages efficient use of water resources in its business activities. Based on the fiscal 2019-2021 mid-term target^{*1}, we are working to reduce our water usage in order to achieve targets set by each business site and department. In addition, we are putting in place measures for water risk affecting business activities.

^{*1} CSR Activities: Targets and Results
<https://www.murata.com/en-global/about/csr/activities>

Trends for water use and unit of real production



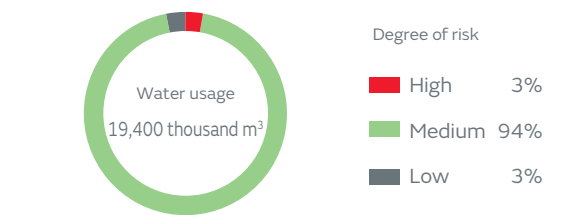
A 14% improvement against the fiscal 2016-2018 mid-term target (improved the average water usage in unit ratio of real production between fiscal 2016-2018 by 3% (compared to the average of fiscal 2011-2015)) enabled us to meet our targets. In fiscal 2019, at Toyama Murata Manufacturing Co., Ltd., we are installing equipment for processing wastewater for reusing it in production processes, which will enable us to reduce our water usage by 500,000 tons over the course of a year.

Responding to water risk

Using disclosure materials made available by WRI Aqueduct^{*2}, WBCSD Global Water Tool^{*3}, and public and other authorities, we are evaluating water risk (risk of drought and flooding) after establishing in-house standards for appraisal. Drought risk for each business site is evaluated using three grades (high, medium, and low). Looking at water usage volumes by the appraisal grade, we concluded that 97% of sites were at locations where overall drought risk was low or medium. There were no business sites at a high risk of flooding, assessed in terms of frequency of flood occurrence and extent of impact. Going forward, we will conduct our activities with a view to setting CBWT^{*4}, which is a water target based on regional specifics and issues in the basin.

^{*2} Water risk evaluation tool developed by World Resources Institute (WRI)
^{*3} Water risk evaluation tool developed by World Business Council for Sustainable Development (WBCSD)
^{*4} Context-based Water Target (CBWT)

Water usage by water stress region

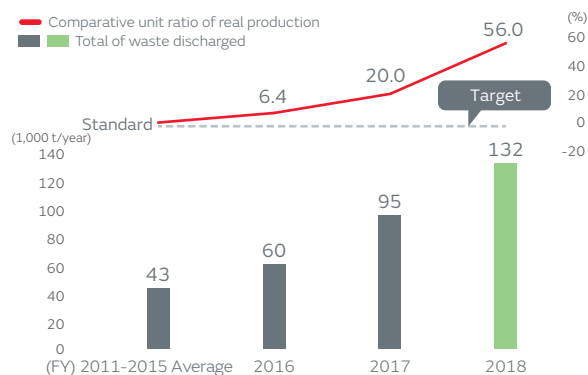


Waste management

Murata is engaged in waste management following basic policies of compliance, curbing generation, and zero emissions (zero landfills). Based on the fiscal 2019-2021 mid-term target*, we are working to reduce volumes of waste discharged in order to achieve targets set by each business site and department. Recently, we have been promoting resource recycling activities regarding the issue of plastics in particular.

* CSR Activities: Targets and Results
<https://www.murata.com/en-global/about/csr/activities>

Trends for waste emissions and unit of real production



Despite measures taken to reduce waste including the rationalization of usage volumes of solvents, we fell 29% short of the fiscal 2016-2018 mid-term target (improve the average waste emissions in unit ratio of real production between fiscal 2016-2018 by 3% (compared to the average of fiscal 2011-2015)). The reason for this was a dramatic increase in production volumes for lines with higher waste per basic unit values, in line with business expansion.

On the basis of this result, we are promoting introduction of wastewater processing facilities for in-house treatment of the 15% of total waste that is fluid, and plan to complete them during fiscal 2019.

Initiatives to recycle waste plastic

In recent years, there has been a growing need for initiatives to recycle plastic in response to restrictions on the import of waste in China and other Asian countries as well as ocean pollution. Especially in Japan, the amount of waste that cannot be recycled and goes to landfills has increased rapidly due to China's waste import restrictions. Given this situation, Murata regularly exchanges information with materials manufacturers and considers recycling methods that can produce higher quality raw materials than at present, in order to maintain "zero emissions."

Management of chemical substances

Murata is committed to supplying products with minimal impact on the global environment, to usher in a sustainable social system.

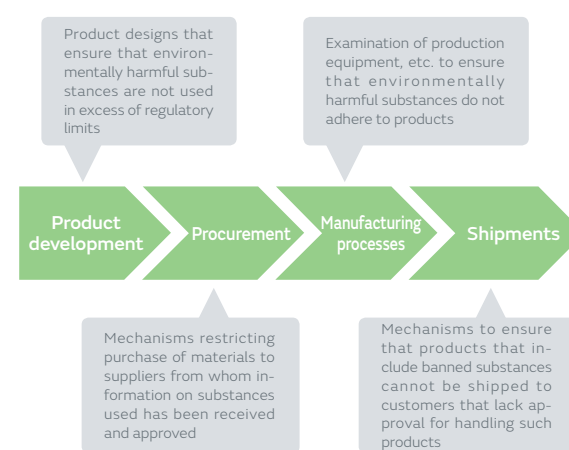
In addition to complying with legal and regulatory regimes such as the RoHS Directive and the REACH regulations, we have established in-house standards that incorporate global trends and customer requirements regarding environmentally harmful substances. Through the management system profiled below, we are taking aggressive measures to reduce or prevent use of environmentally harmful substances in our products.

Murata is also taking preemptive measures ahead of amendments of legislation regarding environmentally harmful substances.

Under the current RoHS Directive, use of 10 kinds of chemical substance in electronics and electrical equipment sold within the European Union is subject to restrictions. Among them, use of four types of specific phthalic acid esters were additionally restricted in the amendment implemented July 22, 2019. Acting in advance of the amendment of the RoHS Directive, Murata had prohibited the use of specific phthalic acid esters in newly developed products from July 2017. In addition, packaging materials and tools that come in contact with the products during the process of manufacturing and logistics are also subject to management, in order to prevent contamination by contact.

Through such measures, reducing use of environmentally harmful substances is another way in which Murata puts the safety of society, local communities and customers first.

Management of environmentally harmful substances at Murata



Partnerships

In order to keep Murata an indispensable part of society, we strive to strengthen our partnerships by valuing the connections with not only our customers but also our suppliers and local communities. We are building solid trusting relationships by communicating Murata's approach to our entire supply chain, and are involved in community outreach activities so that our local communities will be proud to have Murata's presence.

Promotion of CSR procurement with emphasis on partnerships with suppliers

"...being trustworthy and, together with all our stakeholders, thankful for the increase in prosperity." This is a passage from the Murata Philosophy.

The ideas on which we place the utmost importance in doing business with our suppliers are summarized here.

With "equitability, fairness, and transparency" as the philosophy of our procurement activities, Murata has been cultivating partnerships aimed at coexistence and mutual prosperity with our suppliers, based on the Purchasing Policies^{*1}. These ideas will not change in the future, and we will fortify them further in order to achieve mutual prosperity with our stakeholders. In addition, we will proactively work on reducing CSR risks in our procurement supply chain, such as prohibiting child labor, forced labor, and discrimination by gender or religion, and responsible mineral procurement.

At present, Murata is mainly working on the following three aspects of CSR procurement.

- ① We request our suppliers to comply with the Murata CSR Charter which is based on the Murata Philosophy, and the summarized Our Expectations of Suppliers^{*2}, which is based on the Murata CSR Charter.
- ② At the time of opening an account, we request our suppliers to sign a CSR Agreement and agree to implement activities that are compliant with the Code of Conduct of the Responsible Business Alliance (RBA).

- ③ From 2017, we began using the Checklist for CSR Compliance Status, which enables our suppliers themselves to self-assess their CSR compliance status, visualize problems, and share the results with Murata. By having discussions on these problems and corrective measures between the two parties, we aim to make more efficient and fundamental solutions. We have regularly conducted these activities each year, and plan to continue their implementation going forward.

In order to implement these measures effectively, Murata believes that it is important not to impose CSR compliance activities unilaterally but to cooperate with our suppliers based on the partnerships we have cultivated so far.

In recent years, we have been expected to expand the scope of these CSR activities not only to companies with whom we have relationships but also across the entire supply chain. Based on the spirit of the Murata Philosophy, Murata will continue to build long-term trust and strong partnerships by aiming for coexistence and mutual prosperity with our suppliers, while further expanding and enhancing our CSR procurement and realizing the supply chain that assures our stakeholders of safety.

*1 Purchasing Policy
<https://www.murata.com/en-global/about/procurement/policy>
 *2 Our Expectations of Suppliers
<https://www.murata.com/en-global/about/procurement/expectations>

How CSR procurement works



Promoting “Responsible Minerals Procurement”

Serious human rights violations have become a social problem in mineral procurement, and interests in responsible minerals procurement are rising.

Murata regards this as part of our corporate social responsibility (CSR) efforts, and conducts surveys and provides information in compliance with the industry standards based on our responsive policies. Furthermore, as an internal framework, the CSR Management Committee, chaired by a Representative Director, shares information with top management on activities, progress, and any issues regarding responsible minerals procurement, and makes any decisions.

Due to the EU’s Conflict Minerals Regulation that will become effective in 2021 and growing awareness of human rights issues, the scope of responsible minerals procurement is being further extended to more risks, regions, and minerals. Murata is currently preparing our response to these developments in cooperation with industry peers. We are planning to provide stakeholders with supply chain information based on industry standards regarding new areas such as the response status to new risks including OECD Annex II risks and OFAC Regulations, usage of minerals produced in Conflict Affected and High-Risk Areas (CAHRAs), and cobalt usage status. With regard to some products, we have already initiated efforts for a transparent supply chain for cobalt.

In response to requests from our customers for our supply chain information, we provide information using the CMRT (Conflict Minerals Reporting Template) issued by the RMI (Responsible Minerals Initiative). We also regularly conduct surveys on our suppliers to keep the information updated. We continue to carry out our efforts to reduce risk and make our supply chain transparent by working together with our suppliers for improvement. This entails reviewing reported information in line with the internal standards prescribed based on the OECD Due Diligence Guidance and carrying out corrective measures, and so forth.

Murata Manufacturing Co., Ltd. is also a member company of the Responsible Minerals Trade Working Group at Japan Electronics and Information Technology Industries Association (JEITA), and of the RMI. By joining organizations that take the initiative in the industry, we are proactively working on issues that

are difficult to solve as an individual company, such as creating industry-wide frameworks.

We also participate in the JEITA-sponsored Responsible Minerals Sourcing Inquiry Briefings as a lecturer.

Despite the increasing difficulty of responding to the expansion and changes in various requirements, Murata will continue to actively address these issues. We will also ensure the transparency of our supply chain and to soon realize CSR procurement including responsible minerals procurement by closely cooperating with our customers, suppliers, and the industry, etc., more than ever.

We will continue to assure our stakeholders of safety and security by advancing and realizing these initiatives.

Responsive policies for responsible minerals procurement

- 1 Working within the framework of CSR procurement activities based on the Murata Manufacturing CSR Charter.
- 2 Building a management framework in accordance with the OECD Due Diligence Guidance.
- 3 Using the above mechanisms, we continue our efforts to use low-risk components and materials to promote responsible procurement of minerals used by Murata, such as to prevent financing of armed groups through our minerals supply chain including gold, tin, tantalum, tungsten, and cobalt, and to protect human rights and promote fair trade. Also, refusing to conduct procurement from companies that are clearly involved in conflicts or human rights violations.
- 4 Conducting sensible and efficient procurement in a sincere manner, based on industry standards, and in close collaboration with industry organizations.
- 5 Sharing information regarding minerals that are obtained through the supply chain with partner companies as quickly as possible.

Activities to contribute to society and local communities

Basic policies for activities to contribute to society and local communities

Murata desires to be a company whose presence in local communities is considered the pride and joy of those communities. Making effective use of its resources (employees, expertise, facilities and funds), Murata constantly makes contributions to society and local communities.

Toward achieving harmony among people, organization and society

Based on the above-mentioned basic policies, we are primarily engaged in activities to “assist with nurturing children who will forge the future,” “environmental conservation,” and “activities to support local communities,” in order to achieve “harmony among people, organization and society,” which is one of the three issues of Mid-term Direction 2021.

Assist with nurturing children who will forge the future

As a monozukuri (manufacturing) company, we conduct activities in an attempt to convey what is interesting about scientific technologies to children, such as providing science education, environmental education, and lessons for elementary and junior high school students, factory tours, and accepting participants of workplace experience, with the aim of assisting the development of human resources who will be able to create innovations in the future. During fiscal 2018, we carried out 236 activities in total.

Example: “Visiting class” by Murata Electronics (Malaysia) Sdn.Bhd.

At Murata Electronics (Malaysia) Sdn.Bhd., we held lessons for fifth and sixth graders at two elementary schools in Perak.



Conducted science education for 33 students at Belanja Parit Elementary School



Held a music box workshop for 31 students at Seri Iskandar Elementary School

Environmental conservation

By formulating its Green Basic Policy, each of our subsidiaries and business sites is engaged in greening activities, forest conservation activities, environmental conservation activities, and other activities that harmonize with local cultures and nature. During fiscal 2018, we carried out 21 activities in total.

Activities to support local communities

At our subsidiaries and business sites both in and outside of Japan, Murata provides support for local communities that fits their specific needs and characteristics.

<https://www.murata.com/en-global/about/csr/people/society>

Example: Multicultural symbiotic support by Izumo Murata Manufacturing Co., Ltd.

There are currently 4,698 foreigners who live in Izumo City due to a recent increase in Japanese Brazilians being deployed to work at Izumo Murata Manufacturing Co., Ltd. from cooperating companies (an increase of 2.4 times over the past five years). We donated equipment, including printers, desks, and chairs for students, to the Japanese Initial Intensive Class established by the Izumo City Board of Education in fiscal 2019, with the aim of assisting in teaching Japanese to their children.



Academic support activities

The Murata Science Foundation was established in 1985 to contribute to the advancement of science and technology through academic promotion. The Foundation provides grants to research activities contributing to the improvement and development of science and technology and the solutions to various problems in the humanities and social sciences, and encourages international exchange among researchers. In fiscal 2017, the Foundation began providing grants to overseas universities.

During fiscal 2018, the Foundation provided a total of 358 million yen grants in Japan, comprising 154 research project grants, 40 study group grants, and 105 cases of dispatch assistance outside of Japan, and provided a total of 10 million yen outside of Japan for 20 research project grants. The cumulative grants since the establishment of the Foundation amount to 3.5 billion yen.

Topic Began to offer lessons to experience programming “Move, teacher Robot!!”

Murata has been holding lessons since 2006, with the aim of having children who will forge the future enjoy and take an interest in engineering jobs that will support monozukuri (manufacturing). Furthermore, we began to offer lessons providing programming education through experience that nurtures logical thinking for fifth and sixth graders in anticipation of programming education becoming mandatory in 2020 academic year. Through this visiting class, we will help students “acquire a programming mindset - ability to think logically,” which is a performance goal set in the government curriculum guidelines for elementary schools.





Analysis of operating results and financial situation

Review of fiscal 2018

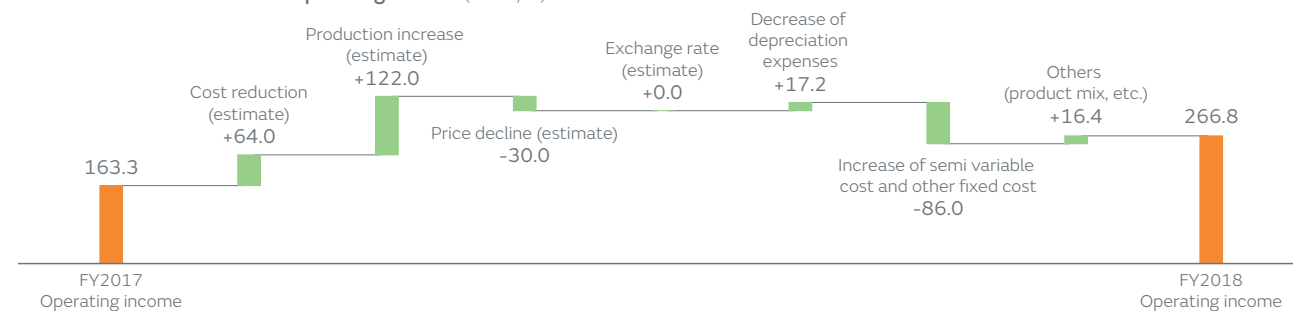
In fiscal 2018, there was an increase in the number of electrical equipment installed in automotive electronics due to improvements in vehicle environmental performance and safety, generating higher demand for electronic components. Until the third quarter there was growth in demand, mainly for component products used in various applications. For example, the increasing functional sophistication of smartphones and PCs led to growth in the number of components used per end product. In the fourth quarter, however, demand for components fell slightly partly because of reduced smartphone sales.

By focusing on promising markets, Murata increased net sales by 14.8% year-on-year to 1,575.0 billion yen in fiscal 2018. This growth was achieved due not only to

the drastic growth of multilayer ceramic capacitors, Murata's core product group, but to the consolidation of the lithium-ion battery business, whose acquisition process was completed in September 2017.

Operating income was 266.8 billion yen, up 63.4%, income before income taxes was 267.3 billion yen, up 59.3%, and net income attributable to Murata Corporation was 206.9 billion yen, up 41.6% from the previous fiscal year. Negative factors such as increased production-related costs to meet demand and the impairment loss related to property, plant and equipment were more than canceled by the effects of the production increase as well as cost reduction initiatives, lower depreciation and amortization, and continued launch of new products.

Actual increase/decrease in operating income (Billion yen)



Sales by product

(Billion yen)

	FY2017 results	FY2018 results	Increase/decrease	Reasons for increase/decrease
Capacitors	449.8	574.2	+124.4 (+27.7%)	Chip multilayer ceramic capacitors were strong in a broad range of applications including products for automotive electronics where vehicle electrification is progressing, and those for smartphones and PCs, generating a significant sales increase.
Piezoelectric Components	152.0	138.6	-13.4 (-8.8%)	Sales of SAW filters declined owing to a decline in sales volume of high value added products for smartphones and a decline in prices.
Other Components	322.3	392.2	+69.9 (+21.7%)	Substantial sales growth was achieved as demand for MEMS sensors for automotive electronics increased, and sales in the lithium-ion battery business acquired in September 2017 were added, despite a decrease in demand for coils for high-end smartphones.
Communication Modules	395.0	425.5	+30.5 (+7.7%)	MetroCirc™ and modules for communication equipment used for new high-end smartphone models grew and increased sales, despite short-range wireless communication modules for high-end smartphones decreased.
Power Supplies and Other Modules	48.9	41.2	-7.6 (-15.6%)	Sales decreased due to a decrease in demand for office equipment.
Total Product Net Sales	1,368.0	1,571.7	+203.7 (+14.9%)	



Consolidated Balance Sheets

(Millions of yen)

	End of FY2017 March 31, 2018	End of FY2018 March 31, 2019
Assets		
Current assets	810,260	933,941
Cash	168,902	181,956
Short-term investments	30,747	69,781
Marketable securities	20,790	27,364
Trade notes receivable	2,895	4,053
Trade accounts receivable	256,140	271,566
Allowance for doubtful notes and accounts	(1,159)	(1,510)
Inventories	290,257	349,315
Prepaid expenses and other	41,688	31,416
Property, plant and equipment	705,229	856,453
Land	64,772	68,133
Buildings	467,427	536,781
Machinery and equipment	1,104,592	1,250,288
Construction in progress	97,090	109,057
Accumulated depreciation	(1,028,652)	(1,107,806)
Investments and other assets	281,524	258,499
Investments	87,288	66,697
Intangible assets	54,347	47,526
Goodwill	76,914	78,389
Deferred income taxes	36,346	42,065
Other	26,629	23,822
Total assets	1,797,013	2,048,893
Liabilities		
Current liabilities	261,812	259,771
Short-term borrowings	13,500	23,007
Trade accounts payable	94,074	75,491
Accrued payroll and bonuses	38,041	43,485
Income taxes payable	24,968	38,315
Accrued expenses and other	91,229	79,473
Long-term liabilities	77,985	184,582
Bonds	—	99,813
Long-term debt	742	594
Termination and retirement benefits	67,843	75,789
Deferred income taxes	7,675	6,673
Other	1,725	1,713
Total liabilities	339,797	444,353
Equity		
Murata Corporation's Shareholders' equity	1,456,600	1,603,976
Common stock	69,444	69,444
Capital surplus	120,596	120,702
Retained earnings	1,336,208	1,493,697
Accumulated other comprehensive loss	(16,052)	(26,273)
Unrealized gains on securities	7,576	46
Pension liability adjustments	(16,995)	(21,574)
Foreign currency translation adjustments	(6,633)	(4,745)
Treasury stock, at cost	(53,596)	(53,594)
Noncontrolling interests	616	564
Total equity	1,457,216	1,604,540
Total liabilities and equity	1,797,013	2,048,893



Consolidated Statements of Income

(Millions of yen)

	FY2017 April 1, 2017 - March 31, 2018	FY2018 April 1, 2018 - March 31, 2019
Net sales	1,371,842	1,575,026
Cost of sales	926,929	974,808
Selling, general and administrative	187,602	231,822
Research and development	94,057	101,589
Operating income	163,254	266,807
Interest and dividend income	2,854	3,519
Interest expense	(581)	(422)
Foreign currency exchange loss	(7,299)	(2,401)
Gain on bargain purchase	6,442	—
Other - net	3,131	(187)
Income before income taxes	167,801	267,316
Income taxes	21,749	60,357
<Current income tax>	<48,538>	<65,036>
<Deferred income tax>	<(26,789)>	<(4,679)>
Net income	146,052	206,959
Less: Net income (loss) attributable to noncontrolling interests	(34)	29
Net income attributable to Murata Corporation	146,086	206,930



Consolidated Statements of Comprehensive Income

(Millions of yen)

	FY2017 April 1, 2017 - March 31, 2018	FY2018 April 1, 2018 - March 31, 2019
Net income	146,052	206,959
Other comprehensive income (loss), net of tax		
Unrealized gains on securities	1,449	320
Pension liability adjustments	(1,343)	(4,579)
Foreign currency translation adjustments	(1,925)	1,874
Other comprehensive income (loss)	(1,819)	(2,385)
Comprehensive income	144,233	204,574
Less: Comprehensive income (loss) attributable to noncontrolling interests	(20)	15
Comprehensive income attributable to Murata Corporation	144,253	204,559



Consolidated Statements of Shareholders' Equity

(Unit: shares, millions of yen)

	Number of common shares issued	Common stock	Capital surplus	Retained earnings	Accumulated other comprehensive loss	Treasury stock	Controlling interests	Noncontrolling interests	Total equity
Balance at March 31, 2017	675,790,776	69,377	114,290	1,241,180	(14,219)	(55,809)	1,354,819	515	1,355,334
Purchases of treasury stock at cost						(53)	(53)		(53)
Disposal of treasury stock			6,272			2,266	8,538		8,538
Net income				146,086			146,086	(34)	146,052
Cash dividends				(51,058)			(51,058)		(51,058)
Other comprehensive loss, net of tax					(1,833)		(1,833)	14	(1,819)
Restricted stock compensation	23,505	67	34				101		101
Equity transaction with noncontrolling interests and other								121	121
Balance at March 31, 2018	675,814,281	69,444	120,596	1,336,208	(16,052)	(53,596)	1,456,600	616	1,457,216
Cumulative effect adjustment from the adoption of Accounting Standards Update No. 2016-01				7,850	(7,850)		—		—
Purchases of treasury stock at cost						(33)	(33)		(33)
Disposal of treasury stock			3			1	4		4
Net income				206,930			206,930	29	206,959
Cash dividends				(57,579)			(57,579)	(6)	(57,585)
Other comprehensive loss, net of tax					(2,371)		(2,371)	(14)	(2,385)
Restricted stock compensation			103			34	137		137
Equity transaction with noncontrolling interests and other				288			288	(61)	227
Balance at March 31, 2019	675,814,281	69,444	120,702	1,493,697	(26,273)	(53,594)	1,603,976	564	1,604,540

(Note) The Company implemented a three-for-one common stock split, effective April 1, 2019.
Number of common shares was calculated on the assumption that the relevant stock split had been implemented at March 31, 2017.



Consolidated Statements of Cash Flows

(Millions of yen)

	FY2017 April 1, 2017 - March 31, 2018	FY2018 April 1, 2018 - March 31, 2019
Operating activities		
Net income	146,052	206,959
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation and amortization	141,625	124,419
Losses on sales and disposals of property, plant and equipment	1,620	3,284
Provision for termination and retirement benefits, less payments	(771)	(504)
Deferred income taxes	(26,789)	(4,679)
Gain on bargain purchase	(6,442)	—
Changes in assets and liabilities		
Increase in trade notes and accounts receivable	(30,135)	(16,852)
Increase in inventories	(47,268)	(59,250)
(Increase) decrease in prepaid expenses and other	(11,970)	10,120
Increase (decrease) in trade notes and accounts payable	24,873	(24,140)
Increase in accrued payroll and bonuses	970	5,474
Increase in income taxes payable	17,784	13,521
Increase (decrease) in accrued expenses and other	10,433	(4,108)
Other - net	5,267	25,598
Net cash provided by operating activities	225,249	279,842
Investing activities		
Capital expenditures	(306,608)	(291,581)
Payment for purchases of marketable securities, investments and other	(13,016)	(25,792)
Maturities and sales of marketable securities, investments and other	57,131	28,853
(Increase) decrease in long-term deposits and loans	1,081	(1,169)
(Increase) decrease in short-term investments	98,424	(16,417)
Acquisition of businesses, net of cash acquired	(33,648)	(563)
Other - net	2,471	2,928
Net cash used in investing activities	(194,165)	(303,741)
Financing activities		
Net increase (decrease) in short-term borrowings	(32,618)	9,507
Proceeds from long-term debt	403	42
Repayment of long-term debt	(353)	(259)
Proceeds from issuance of bonds	—	99,813
Dividends paid	(51,058)	(57,579)
Other - net	41	22
Net cash used in financing activities	(83,585)	51,546
Effect of exchange rate changes on cash and cash equivalents	1,227	2,248
Net increase (decrease) in cash and cash equivalents	(51,274)	29,895
Cash and cash equivalents at beginning of year	239,184	187,910
Cash and cash equivalents at end of year	187,910	217,805
Additional cash and cash equivalents information		
Cash	168,902	181,956
Short-term investments	30,747	69,781
Short-term investments with the original maturities over 3 months	(11,739)	(33,932)
Cash and cash equivalents at end of year	187,910	217,805



Company overview

Trade name	Murata Manufacturing Co., Ltd.
Date of incorporation	December 23, 1950 (established in October 1944)
Common stock	69,444 million yen
Locations	Head Office 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555
	Branch Tokyo Branch, Shibuya-ku, Tokyo
Subsidiaries in Japan	28
Subsidiaries outside of Japan	64



Stock information (As of March 31, 2019)

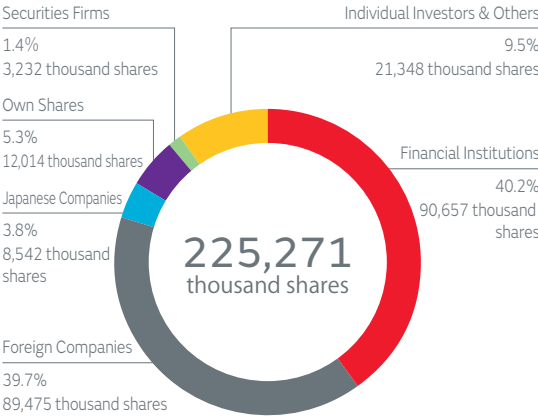
Stock data

Number of shares outstanding	225,271 thousand shares
Number of shareholders	62,402

Stock exchange listing

Domestic	Tokyo Stock Exchange First Section
Overseas	Singapore Exchange

Ownership breakdown



Major shareholders

Name	Number of shares (unit: one thousand)	Ownership (%)
Japan Trustee Services Bank, Ltd. (Trust Account)	14,591	6.8
The Master Trust Bank of Japan, Ltd. (Trust Account)	11,970	5.6
JP Morgan Chase Bank 380055	9,335	4.4
Nippon Life Insurance Company	7,361	3.5
SSBTC CLIENT OMNIBUS ACCOUNT	5,411	2.5
The Bank of Kyoto, Ltd.	5,260	2.5
Meiji Yasuda Life Insurance Company	5,240	2.5
Japan Trustee Services Bank, Ltd. (Trust Account 5)	4,117	1.9
The Shiga Bank, Ltd.	3,551	1.7
Mizuho Bank, Ltd.	3,000	1.4

(Note) The Company holds 12,014 thousand shares of its own stock. As these shares do not confer voting rights, they are excluded from the above table.

Other significant matters concerning shares

The Company implemented a three-for-one common stock split, effective April 1, 2019, and number of shares outstanding increased to 675,814 thousand shares.



Status of incorporation into ESG indices

The Company has been incorporated into multiple indices as a company proactively engaged in ESG. We will continue our proactive initiatives and information disclosure going forward.



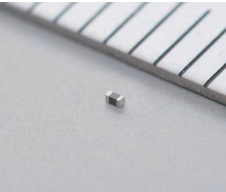
One year at Murata

In fiscal 2018, which was the last fiscal year of Mid-term Direction 2018, we strengthened our efforts in three focus markets (automotive, energy, and medical/healthcare), in addition to the communication field, which has been the pillar of our growth, so that we can continue sustainable growth in the future. In addition, we invested capital expenditures of 291.6 billion yen in order to respond to rapidly increasing demand for components, striving to establish and enhance our medium- to long-term production structure.

Product-related news

Commercialization of industry first GHz band 0201 inch size BLM03EB_SH series noise suppression filter for automotive

<https://www.murata.com/en-global/products/info/emc/emifil/2018/0514>



Achieved real-time sensing by utilizing the IoT and sensor technology
Developed safety monitoring system for workers at construction sites



Began sales of m-FLIP, a productivity improvement solution that visualizes non-performance factors in plant facilities utilizing IoT technology

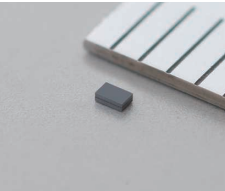
High drain & extended temperature lithium coin batteries development for IoT devices

<https://www.murata.com/en-global/products/info/batteries/micro/2018/1015>

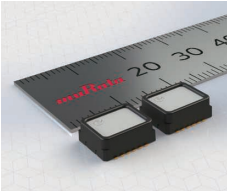


Murata develops world's smallest 32.768 kHz MEMS resonator

<https://www.murata.com/en-global/products/info/timingdevice/mems-r/2018/1004>

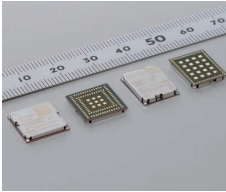


Developed a 3-axis inclinometer incline sensor that achieves high precision sensing under harsh conditions



Murata develops some of world's smallest LPWA (Cat.M1/NB-IoT) modules

<https://www.murata.com/en-global/products/info/connectivitymodule/lpwa/2019/0402>



April 2018

May

June

July

August

September

October

November

December

January 2019

February

March

Corporate news

Awarded the 2018 Ministry of Education, Culture, Sports, Science and Technology (MEXT) Minister Prize for Science and Technology (development division)

Three persons from Murata Manufacturing Co., Ltd. were awarded the Ministry of Education, Culture, Sports, Science and Technology (MEXT) Minister Prize for Science and Technology (development division) for "the development of high frequency signal transmission circuits and electronic devices."

Murata's Cheerleaders take on role as Ambassadors for Supporting Culture and Tourism in Kyoto

<https://www.murata.com/en-global/about/newsroom/news/company/csrtopic/2018/0802>

The Murata Cheerleaders took on role as Ambassadors for Supporting Culture and Tourism in Kyoto.



The 35th anniversary of Murata Science Foundation

<https://www.murata.com/en-global/about/newsroom/news/company/general/2018/0717>

Murata Science Foundation celebrated its 35th anniversary of establishment, and achieved the highest number and amount of research grants in its history.

Notice regarding stock split and partial amendment of article of incorporation

https://www.murata.com/-/media/webrenewal/about/newsroom/news/irnews/irnews/2019/0131b/20190131_e.ashx?la=en

Each share of common stock on the record date of Sunday, March 31, 2019 was split into three shares in order to expand the investor base by lowering the stock price per investment unit and increase the liquidity of the Company's stock.

Murata opened company-run nurseries for the purpose of supporting diverse work styles

<https://www.murata.com/en-global/about/newsroom/news/company/general/2019/0304>

In April 2019, Murata opened a combined childcare facility comprising Sakuranbo nursery, which is an authorized nursery, for the purpose of alleviating the issue of children on waiting lists in Nagaokakyo City, Kyoto, and Kaede nursery, which is a company-run nursery, for the purpose of supporting diverse work styles.

New building-related

Murata Energy Device Wuxi Co., Ltd. opened a new production building

<https://www.murata.com/en-global/about/newsroom/news/company/general/2018/0808>



Okayama Murata Manufacturing Co., Ltd. opened a new production building

<https://www.murata.com/en-global/about/newsroom/news/company/general/2019/0319>





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