

HORIBA Report

2021-2022

Year ended December 31, 2021



Omoshiro-okashiku
Joy and Fun

おもしろおかしく



Omoshiro-okashiku
Joy and Fun

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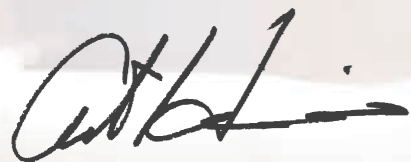


The corporate motto of HORIBA is Joy and Fun.
We believe taking interest and pride in the work
that occupies so much of our lives, and in the workplaces
where many of us spend a large part of each day,
will increase our satisfaction in life and
allow us to enjoy our lives even more.



Omoshiro-okashiku
Joy and Fun

Atsushi Horiba
Chairman & Group CEO



Achieve steady growth by taking on challenges with “HONMAMON*” technologies and human assets

*HONMAMON: HONMAMON is a Japanese word, used especially often in Kyoto, where HORIBA is located. The word describes authenticity and excellence.

2021 was a year in which HORIBA achieved great growth due to the results of our continual investment. As society changes dramatically, HORIBA’s products and solutions are being recognized by customers who understand “HONMAMON.”

Based on HORIBA’s exceptional technologies and human assets, we will continue to create new value and open up unexplored territory.

Realization of growth through balanced management

In 2021, while the world was still affected by the spread of COVID-19, economic activity gradually recovered in each region thanks in part to the progress of vaccination worldwide. When we look at economic trends, we see that the automotive industry is undergoing major changes in its industrial structure and the foundation of its core technologies. Meanwhile, the semiconductor and IT industries are booming like never before. In response to these trends in society, we have striven to make major changes to HORIBA’s automotive business, which has built an overwhelming presence in the industry. The cost of these efforts has been fully covered by our brisk business in the semiconductor segment. Sales, operating income, and ordinary income reached record highs for the fiscal year ended December 2021, and we were able to secure 14.3% of our operating profit margin. This greatly exceeded the results of not only fiscal 2020 but also 2019.

The world is changing at an unprecedented speed. Even before the spread of COVID-19, I have argued that it is vital for us to address how to deal with and survive these changes, since global currents can be expected to change drastically in the future.

HORIBA has achieved growth through balanced management that flexibly leverages management resources to continually invest in each business division. Also, even in the midst of change, HORIBA has taken many measures centered around balanced management strategies. As you can see from our 2021 results, the entire company has achieved significant growth by continually investing in five businesses with different markets, and nurturing each business to adapt to its target market.



Going ahead into unexplored territory by changing our business model.

Currently, the value of our business is expanding from products to solutions, and our business model is changing accordingly. Needless to say, it is important to utilize HORIBA's strengths in analysis and measurement technology to create high-precision products. Meanwhile, another essential value is providing the technology to properly handle and analyze samples, which are the target of analysis and measurement. In 2021, we established a new head office building for HORIBA Techno Service Co., Ltd., which is responsible for HORIBA's service business. The purpose of this building is to expand our contract test business, which is expected to increase in demand in the future. As soon as the new office building began operations, we were allowed to participate in the project which analyzed samples of the asteroid "Ryugu" collected by the asteroid explorer "Hayabusa 2." By contributing to Japanese national research projects in this way, we have gained the momentum to expand this business.

In 2022, the construction of the new facility of HORIBA FuelCon GmbH in Germany will at last be complete and it begins operation. We immediately decided to construct this new facility, where we manufacture fuel cell test equipment and water electrolysis cell/stack performance evaluation equipment, in 2019, the year following acquisition. I am convinced that this was the best timing, since demand related to hydrogen energy has recently increased sharply.

In this way, HORIBA is steadily preparing for future growth. The next step is not only to run new trains over existing tracks, but also to open up unexplored areas where the rails have not yet been laid. What we create from this perspective might be more dynamic than a new railroad or a new train. We believe that investment from a long-term perspective is vital for competing bravely on a new stage upon which we have never stood, and that this investment should be continued patiently.

Invest generously in human assets and pursue “HONMAMON”

When it comes to investment by companies, hardware aspects such as equipment and buildings, R&D investment, and corporate acquisitions tend to be the focus of attention. However, I think that the most important investment target is human assets. The recruitment and development of excellent human assets center around the R&D investment which determines the future direction of a company. Also, HORIBA has incorporated new technologies by continuing to acquire companies and businesses. I think that the most important thing about acquisition is how new personnel will demonstrate their abilities as members of HORIBA. Fortunately, the companies we have acquired came into our tent because they sympathized with HORIBA's attitude toward R&D and our corporate culture. Since HORIBA invests in them continually, many engineers understand us and continue to stand at the forefront with satisfaction.

HORIBA describes the diversity of human assets as stained glass, and is proud of the results achieved by various activities such as our “Stained Glass Project,” which promotes diversity. We believe that promoting the diversity of human assets is not just about gender and the recruitment of so-called global human assets, but also about utilizing the uniqueness and strengths of individuals. Each person understands their strengths, plays an active role in the fields where those strengths can be utilized, and becomes a leading expert who can compete in the world. HORIBA aims to become a group of “HONMAMON.”

HORIBA appreciates personnel who take on challenges, even if they fail, rather than those who avoid challenges because they are afraid of failure. We evaluate the ideas, processes, and enthusiasm that they bring to challenges, and do not judge them only by their success or failure. Most people will avoid challenges if they are evaluated only on the consequences of failure. I encourage HORIBARIANS* to confront issues to which they do not always have an answer, and to find a valuable answer by trial and error, rather than finding the correct answer to a question by looking to textbooks. Fostering the wisdom and creativity of each individual is the most important factor for development of human assets in a company. Because customers who understand “HONMAMON” can recognize the value of HORIBA, we can obtain a high market share in industries that require high-quality products and services, such as automotive and semiconductors. Human power is important for meeting the expectations of our customers. And HORIBARIANS are human assets, by which we mean they are not “materials” but “assets.” Needless to say, it takes at least five to ten years to develop excellent human assets, and we have been generously investing in human asset development since our founding. For example, the world is currently focusing on

*HORIBARIANS: All HORIBA workers are regarded as family and called HORIBARIAN as a nickname.

hydrogen as a clean energy source to replace fossil fuels. Over the past ten years, when no one was focused on hydrogen, HORIBA had human assets who pursued hydrogen technology and developed related analyzers. The organizational restructuring that took place in the beginning of 2022 was made with the ambitious appointment of personnel and R&D investment in mind, in order to build a new business model.

Take up the challenge and overcome the rough seas of changing tides

HORIBA has identified three fields to focus on in its Mid- to Long Term Management Plan MLMAP 2023. These three fields are: Energy & Environment, which is expected to become a huge market in the future, Bio & Healthcare, which is the most important for humankind, and Materials & Semiconductor where the market environment is very favorable, and where we are accelerating business development.

In the unexplored territory of business, a company cannot survive with strategies that are solely focused on the interests of the country or region to which it belongs. HORIBA is expanding globally by taking advantage of overseas acquisitions, and therefore we have business and technical core locations around the world. Utilizing the technologies and ideas of each location in various parts of the earth, will multiply value and it will create even further value. We will continue to create such a rich cycle of value creation and open up new fields.

Our corporate motto is “Joy and Fun.” If you devote yourself to your work like a hobby, which you enjoy during your leisure time, you can come up with original ideas and discover new worlds. In addition, my “Joy and Fun” is to take on challenges. The more difficulties you face, the greater the sense of accomplishment you feel when you succeed. We will always take on challenges and steadily overcome the rough waves of changing tides. I ask for your continued understanding and support in 2022.

May 2022

Atsushi Horiba
Chairman & Group CEO



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Editorial Policy

We create the HORIBA Report to gain the interest of institutional investors who take a long-term perspective, and to allow them to gain a better understanding of HORIBA. We also believe that HORIBA’s stakeholders can obtain benefits stemming from our growth, and that they take the same long-term perspective as institutional investors. We want to provide our stakeholders with a tool to help understand HORIBA. That tool is the HORIBA Report.

- **Regarding our use of the term "human assets"**
HORIBA considers employees to be valuable assets and refers to them as "human assets" in principle.
- **Regarding our use of the term "owners" (shareholders)**
HORIBA fully recognizes the importance of its shareholders and frequently refers to them as "owners."
- **Regarding our use of HORIBA and HORIBA, Ltd.**
In this HORIBA Report, the HORIBA Group of companies is described as HORIBA and the parent company as HORIBA, Ltd.
- **Market Share in the HORIBA Report**
Market shares stated in this report are HORIBA’s estimates as of fiscal 2021.
- **Change in Revenue Recognition Standard**
HORIBA, Ltd. and its domestic consolidated subsidiaries had formerly recognized revenue mainly on a shipping-date basis. However, starting from fiscal 2016, HORIBA, Ltd. and its domestic consolidated subsidiaries changed their revenue recognition method to recognize revenue on a completion-date-of-installation or delivery-date basis under the terms and conditions of the relevant contracts. The amounts in or before fiscal 2015 are not retrospectively revised.
- **Disclaimer regarding future plans and forecasts**
This HORIBA Report contains certain statements describing future plans, strategies, and performance forecasts of HORIBA, Ltd. and its affiliated companies. These statements reflect forecasts estimated on management’s assumptions and beliefs based on the information available as of April 30, 2022. Actual performance may differ due to unforeseen circumstances in the operating environment and other factors.

Regarding the importance and comprehensiveness of information in the HORIBA Report 2021-2022

We have selected financial and non-financial information that we believe to be of high importance for inclusion in the HORIBA Report 2021-2022. For more detailed information, please see our website. The PDF version of the HORIBA Report 2021-2022 is also available through our website.

Wide variety

Range of Target Readers

Limited

Summary Contents Details and data

Website

HORIBA Report 2021-2022

HORIBA Report 2021-2022

IR information Web Link

CSR information Web Link

Reorganization to Accelerate Cross Segment Activities

President's Discussion

External Dialogue

Masayuki Adachi

(Doctor of Engineering)
President, HORIBA, Ltd.



Tetsuro Ii

President and CEO,
Commons Asset Management, Inc.



Hitoshi Sueyama

Senior Analyst,
Commons Asset Management, Inc.



Masayuki Adachi



Tetsuro Ii



Hitoshi Sueyama

To deliver what is essential to the society in the HORIBA-way

HORIBA has set forth the concept of “cross-segment” and is using it to expand its business into the new business fields. Dr. Masayuki Adachi, President of HORIBA, Ltd., talks to Mr. Tetsuro Ii, (President and CEO, Commons Asset Management, Inc.), and Mr. Hitoshi Sueyama, (Senior Analyst, Commons Asset Management, Inc.) about what cross-segment means, and the corporate culture of HORIBA that supports a cross-segment approach.



Ii: In January 2009, Commons Asset Management, Inc. established its “Commons 30 funds” which feature a “30-Year Perspective,” “Focusing on 30 Companies,” and “Dialog-based communication.” And we have possessed shares of HORIBA for over 10 years, starting in June of that year. Before deciding to invest, we interviewed Mr. Horiba, the Chairman and CEO of HORIBA, Ltd. (Chairman and President at that time), and encountered his strong passion to business development. Since then, I have had the impression that Mr. Horiba is the incarnation of entrepreneurial spirit. Dr. Adachi, since you were appointed President of HORIBA, Ltd. in 2018, we have kept an eye on how you intend to lead the organization. I believe you have made several achievements in-line with your “cross-segment” policy. How specifically did you promote this “cross-segment” approach in the organization?

Adachi: When I joined HORIBA in 1985, we did not even have the concept of business segmentation. It was an era when various elements of business were fused within the organization. From around the middle of the 1990s, we gradually shifted to a market-oriented organization. It first started in Japan and then to the entire global structure. We can say, it was, and still is, a right move which brought us the rapid growth up to now. Nevertheless, I myself thought it would generate more possibilities, if we blend our full value of the group without the walls of segments, like we did

when I joined HORIBA. I was confident that HORIBA as one company can develop more value to the world. We already established a solid segment system by that time, and as a side effect, there were unintentional barriers in our organization. Therefore, even though I started to promote a “cross-segment” approach right after I assumed the president position, it did not take off right away. However, as society has changed, we have begun to realize the necessity of going beyond these barriers to respond flexibly. And many HORIBARIANS now have aspirations about the possibilities of a cross-segment approach.

Ii: We heard that you formed the Business Incubation Division based on this cross-segment concept. What are your objectives and implications?

Adachi: From the perspective of human asset management, it is to make them focused to cross-segment activities, isolating from their legacy tasks. Up until now, some members have been involved in cross-segment activities while still belonging to a certain segment. I want them to be able to 100% focus on new business potential by working exclusively on cross-segment activities. If we can successfully break the walls and if the word cross-segment disappears from the company, it may be said that my objective has finally been achieved. In such case, we would share the technologies, human assets, and sales networks of each of the five segments, and utilize them without any organizational frictions. That is the ideal situation. Cross-segment movements are occurring voluntarily at overseas group companies, and I think this is a good trend.

Ii: It seems you can already see certain responses and outcomes from the cross-segment activities.

Adachi: Indeed. For example, in the hydrogen energy field, which is new for HORIBA, we have already supplied products to the French market, and inquiries are increasing globally, mainly from energy-related companies.

This is a product of the work of HORIBA FuelCon, which develops and manufactures devices to evaluate fuel cells and batteries. At the time we acquired FuelCon GmbH in 2018, most of their customers were automotive related manufacturing companies. Accordingly, we acquired it as part of our automotive business. However now our customer is shifting to look at entire energy flow even in the specific industry such as automotive. In the face of these business opportunities, we do not have time to argue internally about “which segment should deal with this, since it is not related to automotive.” It is important to respond immediately to the market expectations with a cross-segment approach that eventually incorporates all of HORIBA.

Sueyama: The other day, I visited your Biwako Factory HORIBA BIWAKO E-HARBOR for the first time in 6 years. I saw facilities that had not been available before, such as the laboratory CELL Ø that supports evaluation tests of batteries and fuel cells. I have heard in the dialogue as an investor that for the past few years, HORIBA has been strengthening its responses to the shift toward electric vehicles in the automotive industry. And I could recognize that HORIBA has been carefully preparing for this. This year, you have announced your concept for reorganization of HORIBA's automotive business. What does this reorganization entail, from your point of view?

Adachi: We are trying to operate globally with three new concepts: Service Lifecycle Management (SLM), Mobility Solution Business (MSB), and Alternative Energy Conversion (AEC). With SLM, we have started to shift to a business that provides flexible upgrades as well as the higher value-added maintenance of the engine emission measurement equipment and systems which are already owned by our customers. In the automotive industry, electric vehicles, gasoline vehicles, and hybrid vehicles will continue to exist together for the time

Reorganization to Accelerate Cross Segment Activities

Tripartite talk among Presidents

External Dialogue

being. SLM technology supports the development of vehicles equipped with efficient internal combustion engines, and we believe that this is an area where our customers continue to count on us.

With MSB, we provide engineering consulting services related to automotive development, and centered at HORIBA MIRA Limited.

Currently, inquiries and orders in the fields of autonomous driving and cyber security for vehicle are increasing. In addition, we can provide system solutions that contribute to the digitization and efficiency of the vehicle development process.

HORIBA promotes AEC business with hydrogen-based fuel cells and battery measurement technology. We aim to expand the business from the automotive industry to the entire energy industry by responding to demands for new energy-related measurement for energy generation by co-firing hydrogen and/or ammonia, and from distributed power generation. This business is led by a leader who hails from the Process & Environmental Segment. We can say it is truly a cross-segment activity.

Sueyama: I got the impression that HORIBA could establish a system to further support a cross-segment approach through the reorganization of the automotive business. As you continue to promote this cross-segment approach globally for the entire group, I think that the management of group companies becomes more important.

Many companies have struggled with the management of global business, especially during post-acquisition integration. While I have heard from Chairman Horiba before that the integration following acquisition would take several years, I think HORIBA's management is working well. What specific points are you paying attention to?

Adachi: HORIBA values the balance of control between headquarters and local management.

We of course set a monetary threshold to decide whether something requires the approval of headquarters or not. However, sometimes it is not sufficient to have a criterion solely on the amount of money involved.



Tetsuro Ii President and CEO, Commons Asset Management, Inc.

Mr. Ii was in charge of marketing for 10 years in the sales planning department of Yamaichi Securities. After that, he worked in the bond business for institutional investors. He has been in business for corporations and individuals for about 10 years at Merrill Lynch Japan Securities (currently Mitsubishi UFJ Morgan Stanley Securities), and has been in his current position since the founding of Commons Asset Management. Since July 2012, he has also served as CIO (Chief Investment Officer).

Communication, including appropriate reporting, contact, and consultation, are more important in management. And we require the management of our group companies to have such mind-set. HORIBA has grown through global M&A, and I think what has been important, is how quickly and accurately we can convey this idea to the newly acquired companies. We strive to develop a relationship in which we can understand and respect each other. Not surprisingly, post-acquisition integration takes some time, however this kind of management method, which takes time and effort to ensure thorough permeation of our way of thinking, seems to create a special impression on those outside of Japan. The French government once told us that it is impressive that HORIBA could make ABX (currently Horiba ABX SAS) and Joban Yvon (currently Horiba France SAS) with a history of 200 years in operation, keep growing continuously for such a long time after the acquisition.

Ii: The first time I met you, Dr. Adachi, you were still the General Manager of the R&D division, and we talked about the importance of maintaining the motivation of the engineers in an R&D focused company like HORIBA. Companies sometimes happen to stray by losing sight of what research and development is for, and the employees in charge eventually conduct fraudulent acts due to excessive pressure on achieving their numbers. Such a situation significantly lowers the motivation of employees. In contrast to this, it seems that there are many employees who are highly

motivated and work vigorously at your company. What are you careful about as the president?

Adachi: This is directly connected to the corporate motto "Joy and Fun." I believe that the freedom to think and to act by yourself is inherent in the concept of "Joy and Fun." Now, the younger generation has an especially strong sense of responsibility to contribute to society for the world, for people, and for the earth. Our three major markets, Energy & Environment, Bio & Healthcare, and Materials & Semiconductor, are fields that will never disappear as long as humankind exists. And I am confident that our work will contribute to the world. In other words, I think that working at HORIBA is well linked to their sense of contribution to society and helps to increase their motivation. And I think that this desire to do something for the world, for people, and for the earth also translates into a conviction to do work that is absolutely useful for society. HORIBA has built a culture of not giving up easily, and thinking from a long-term perspective, rather than simply changing direction based on the immediate situation.

Ii: Commons Asset Management invests from a long-term perspective. Uncertainty is increasing in society, and we also understand the corporate strategy of remaining flexible in your choices and focus, according to the immediate situation. On the other hand, I think that it is also important to form and manage a portfolio spread across various business domains, and to maintain a balance from a long-term perspective. Some investors are concerned about the so-called conglomerate discount, which lowers corporate value due to diversification. But when it comes to portfolio formation within a solid corporate culture, I believe there is rather a conglomerate premium.

Adachi: HORIBA's business has always been directly linked to what could be called the essential part of social activities. In such a form of business,



there are ups and downs in each business depending on the external environment or time period. Nevertheless, we believe that as long as we steadily improve ourselves amidst competition, financial results will follow. I think that management itself becomes fragile if we make decisions about the continuation of business, only from the perspective of whether or not we can make immediate money.

Sueyama: We have been in dialogue with your company for over 10 years. During this time, we have received a wide variety of interesting explanations regarding the business situation and management strategy. The medical business seems to have a slightly different aspect to your other four segments, and I sometimes wondered what would happen with it in the future. Now, as an investor, I can see that you have properly maintained a certain scope of business.

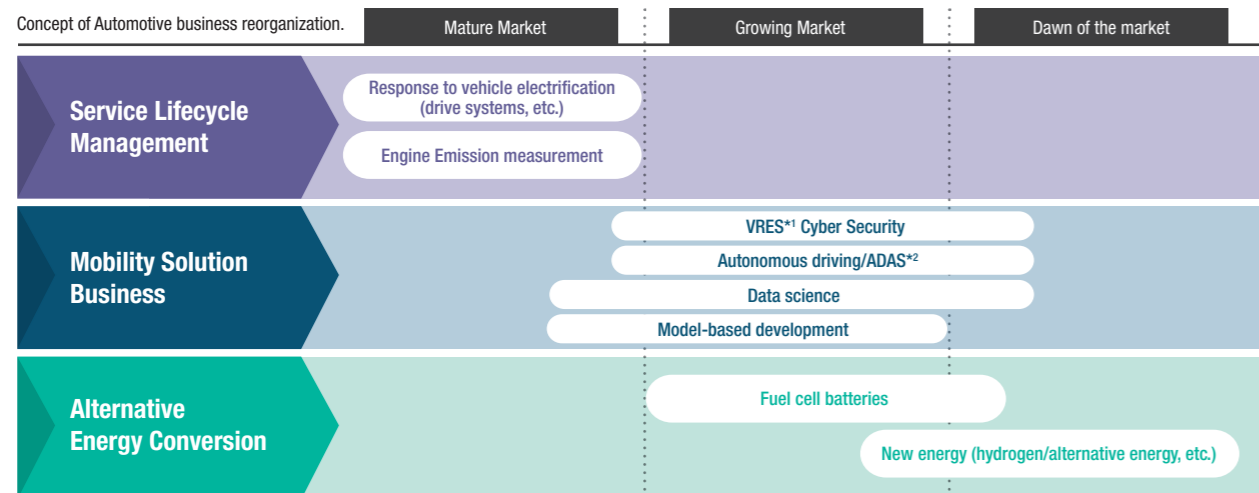
Adachi: I suppose you have seen our medical business accelerate in earnest since the acquisition of ABX in France in 1996. On the other hand, in the company's early days, our founder Masao Horiba, Doctor of Medicine, developed an analyzer that measures human breath for medical use. This technology evolved into an engine emission measurement system that has become a blockbuster product worldwide. Our medical business can perhaps be said to be one of our founding businesses. If you have a competitive and solid core technology, you can achieve significant social contributions and demonstrate your presence. I think this will lead to good performance as a result.

Ii: This has been a very "HORIBA-like" episode, and I think that is due to your corporate culture. Our discussion today deepened my understanding of HORIBA's corporate strategy and culture. On behalf of the beneficiaries who fund us, we hope to continue to talk with you, build better relationships, and help increase corporate value as much as possible.

Adachi: Thank you very much. I would like to continue to evolve and enhance our corporate value without losing any of what makes HORIBA unique. I sincerely thank you for your continued support.

(Done in March 2022)

Special Feature



* 1 VRES: Abbreviation for Vehicle Resilience. Solutions that eliminate threats associated with advanced vehicles
* 2 ADAS: Abbreviation for Advanced Driver-Assistance Systems.



Hitoshi Sueyama Senior Analyst, Commons Asset Management, Inc.

After joining Yamaichi Securities, Mr. Sueyama engaged in corporate data analysis (performance figures, stock prices) at the Economic Research Institute, and investment management of pension stocks and bonds as an investment advisor. After the closure of Yamaichi Securities, he joined Fuji Trust & Banking (currently Mizuho Trust & Banking). In addition to working as a fund manager for foreign stock index management, he has experience in analyst work and planning and management of trust products for individuals. He joined Commons Asset Management in February 2016.

Establishment of the Business Incubation Division Within HORIBA

We have established the Business Incubation Division as an organization for proposing solutions that combine HORIBA's core technologies of analysis and measurement to meet the needs of new businesses. It will bring together functions for creating new businesses in the three fields*1 identified as key markets in our Mid-Long Term Management Plan (MLMAP2023). This division will supervise the Alternative Energy Conversion Center, Mobility Solution Business Center, Bio/Life Science Center, R&D Planning Center, and Technology Innovation Center. The Automotive Service Lifecycle Management Center (which is under the Sales Division), and the OSS*2 Business Development Division of group company HORIBA STEC Co., Ltd., will also participate in this area. We aim to create innovative value from the fusion of HORIBA technologies.

*1 Three fields: Energy & Environment, Bio & Healthcare, and Materials & Semiconductors *2 OSS: Optical Smart Sensing



Mobility Solution Business Center

This center accelerates the provision of engineering and consulting services for automotive development, as well as system solutions that help improve the efficiency of the vehicle development process. It aims to contribute to mobility in society and expand our business globally by offering a wide array of solutions ranging from products to engineering.

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Alternative Energy Conversion Center

This center will respond to the demand for measurement from new energy technologies like hydrogen, based on HORIBA FuelCon GmbH's fuel cell and battery measurement technology. It will also use our existing business network to promote the development of new applications for emerging markets related to new energy. These promise to offer many potential business opportunities.

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Automotive Service Lifecycle Management Center

In partnership with HORIBA Techno Service Co., Ltd., which handles our service business, this center will actively provide services such as product updates, maintenance, and preventative maintenance for our installed base of engine exhaust gas measurement systems that are operating in the market. It will accelerate our transformation into a business that can offer total solutions to the customers who face challenges, and provide robust support for automotive development.

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Message



Hiroshi Nakamura, Ph.D.
(Doctor of Engineering)
Corporate Officer (CTO)
General Manager of
Business Incubation Division

One of HORIBA's strengths is that we have many technologies and multiple business segments. To leverage this strength and spur innovation, we need to develop technologies and cultivate businesses without becoming trapped within the bounds of existing businesses. The Business Incubation Division brings together the technologies and human assets in a cross-organizational manner to create new ideas from fusions of different technologies and cultures. It will drive HORIBA growth by approaching the challenge of business expansion through creation of new technologies that serve the needs of the market from a new perspective.



Bio/Life Science Center

This center will further enhance cutting-edge research into measurement and analysis at our research facilities. It will also expand our business into new fields such as product process evaluation and monitoring. In addition, we aim to establish an organization within HORIBA Advanced Techno Co., Ltd. (our group company handling business related to water quality measurement), which will work with the center to further establish HORIBA's bio/life science segment.

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Optical Smart Sensing (OSS)

Optical Smart Sensing integrates the various sensing technologies that HORIBA maintains on a global scale, and uses it to propose various solutions for the semiconductor market. We are rolling out new businesses for the semiconductor market by promoting the use of our technologies across segments.

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R&D Planning Center

This center facilitates cross-group contributions to the development of basic technologies and applications. It also actively takes advantage of opportunities to adopt technologies and collaborate with others outside the company. It aims to become a hub to share a wide variety of HORIBA technologies and know-how, by planting the seeds of future core technologies that will drive new business.

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Technology Innovation Center

This center pioneers new fields of business by making active use of IoT and data science. It aims to marshal the technology and human assets of our group to spur innovations in analysis and measurement that create and deliver unique value on a global scale.

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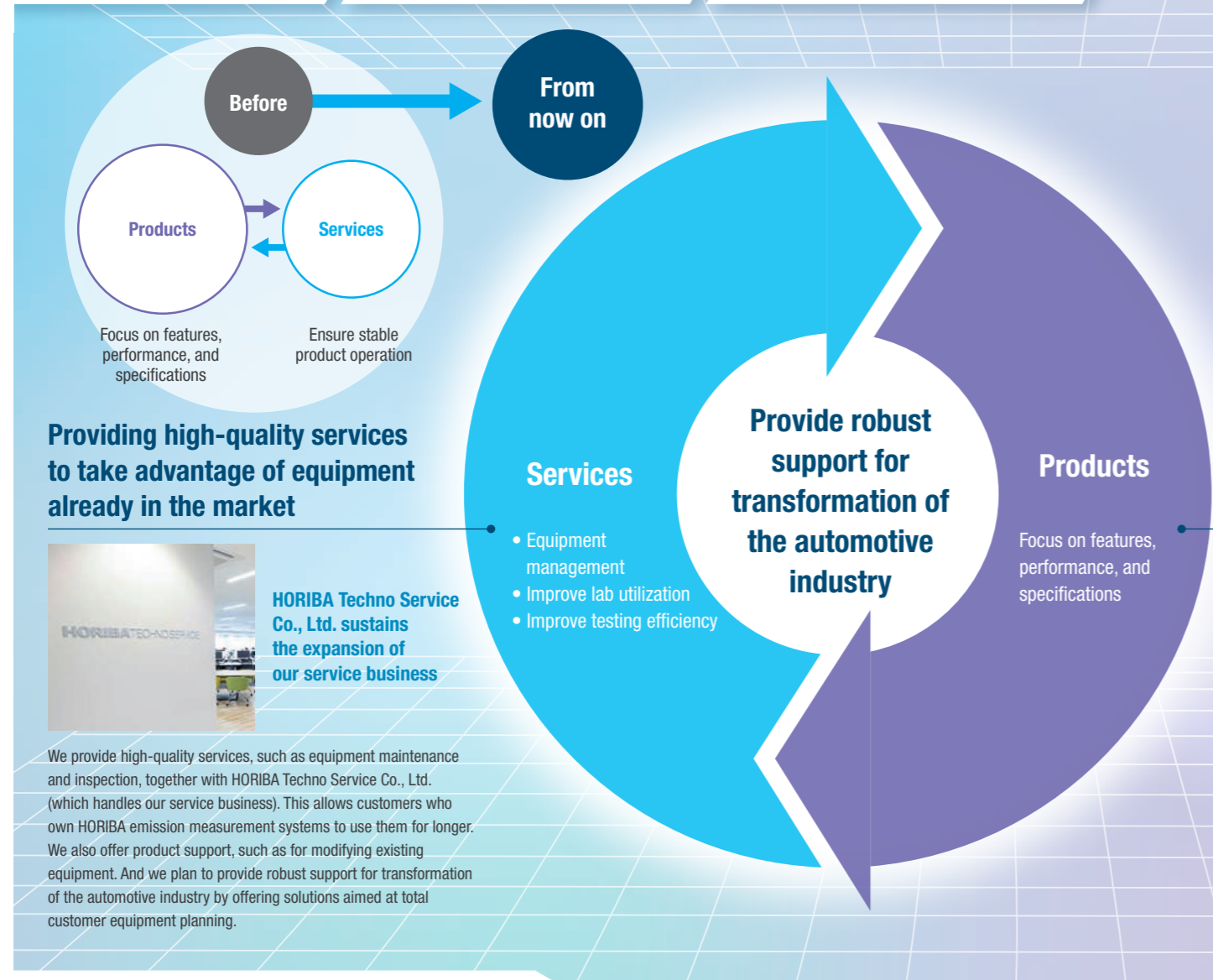
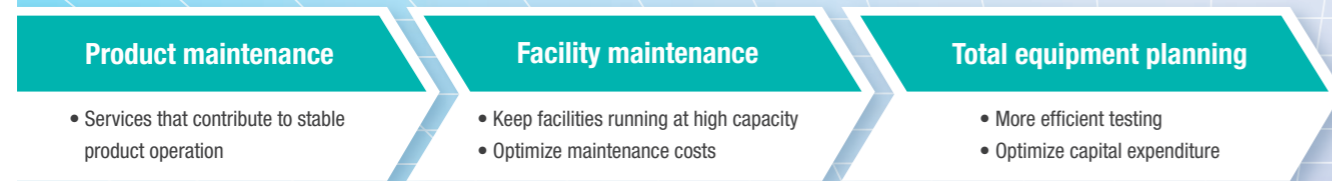
Simultaneously revolutionize our organization and processes to increase the speed at which we bring products to market

Automotive Service Lifecycle Management

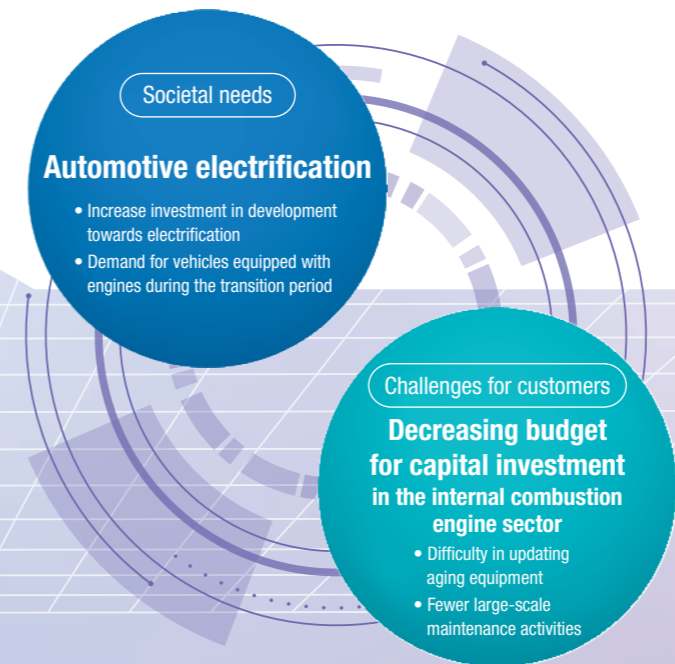
HORIBA has been an overwhelming presence in the field of engine emissions measurement. As society hammers out policies aimed at reaching carbon neutrality, the automotive industry is faced with making the major shift toward electrification. However, even if all vehicles are eventually electrified, the process will take a long time. In the interim, we expect the need to develop new vehicles equipped with internal combustion engines to continue for a certain period of time. And there is stable demand for equipment such as emission measurement systems in new vehicle development sites.

With this demand in mind, on top of our conventional equipment sales, we plan to actively provide even more services for our installed base of equipment currently in operation in the market. We will also make proposals to revamp customer systems and add or replace some equipment. In this way, we will help customers solve problems through both sales of equipment and provision of services.

From equipment sales to equipment management and total planning



Providing customers with management services including facility administration



Transformation of our business model beginning with our installed product base

As the development of electric vehicles progresses, governments are considering new emissions regulations targeting the internal combustion engine vehicles which remain on the market. The budget that automotive manufacturers have for capital investment related to internal combustion engine vehicles is decreasing. However, they continue to be subject to emissions regulations and other requirements. This will increase the burden on development.

Installed base of HORIBA products



Approximately 8,000 MEXA Series Emission Measurement Systems Shipped (from 2001 to 2021)

HORIBA has shipped approximately 8,000 emission measurement systems over the past 20 years, and most of these are still in operation. The continued need to service this huge number of devices and systems is the basis for our installed base business.

The Core of Our Service Business

HORIBA Techno Service Co., Ltd.

Service will play an increasingly important role as we move from an era of selling products to one of selling services. HORIBA Techno Service Co., Ltd. is a group of analysis and measurement technology engineers. They not only offer traditional services such as product commissioning, modification, and inspection, but are focusing on new businesses like providing remote support, contract analysis, and subscription-based analytical services.

Remote Support

We remotely monitor the operational status of HORIBA products owned by customers, detect abnormalities before they lead to failures, and provide optimal remote support as needed.



HORIBA Supports Automotive Development

Since the birth of HORIBA's first MEXA Emission Measurement System in 1964, we have shipped more than 10,000 units, and it has become a tool supporting engine development worldwide. The first MEXA-1 was developed by our founder, Masao Horiba, and his colleagues by modifying a breath gas analyzer for medical use which boasted a high-speed response. It employed Non-dispersive Infrared Absorption Method (NDIR) technology, and the company produced several units and introduced them to market. However, only a few were sold at the time. Since then, air pollution caused by automotive emissions has become a serious problem in developed countries such as the United States. And improving fuel economy has become a major challenge. Demand has steadily grown for the MEXA Series as both an emissions analyzer, and an indispensable system for developing solutions to these problems. It is used by the national certification organizations and major automotive manufacturers of numerous countries. We have shipped more than 8,000 units since the 2000s, and almost all of these are still in service.



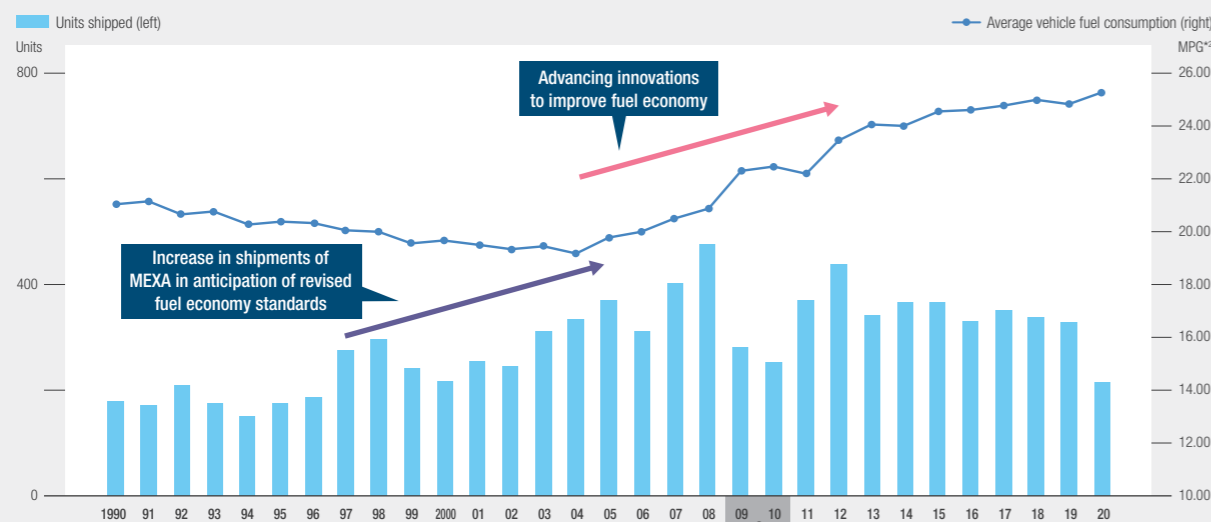
MEXA has helped improve fuel economy

In the United States, the Clean Air Act Extension of 1970 introduced strict automotive emissions regulations, and was followed by the adoption of fuel economy standards based on the CAFE* method in 1978. This jump started worldwide efforts to improve both emission gas purification and fuel economy. MEXA, which came onto the scene at this time, allowed previously invisible emissions to be seen. Engine development engineers at the time used MEXA to analyze emissions, and control combustion within the engine. This led to a drastic improvement in vehicle fuel economy.

Fuel economy standards were not revised for a long time thereafter. But in 2007 they were made significantly more stringent. The coinciding rise in fuel prices during this period also spurred technological innovation in automotive engines. This also increased demand for MEXA, which is vital for engine measurement technology, and has contributed significantly to the improvement of automotive fuel economy.

*CAFE: Corporate Average Fuel Efficiency. A type of fuel economy regulation that calculates and regulates average fuel consumption (weighted harmonic mean fuel consumption) based on the total number of vehicles shipped by a manufacturer, rather than by vehicle model.

Improvement in Automotive Fuel Economy in the United States and Number of MEXA Units Shipped*1



Fuel economy standards were applied to passenger cars from 1978, and light trucks from 1979. These standards were made progressively stricter throughout the early 1980s, and were nearly twice as stringent by 1985. However, the standards were not revised thereafter. The Energy Independence and Security Act/EISA 6 of 2007 substantially revised fuel economy standards.

In 2009 and 2010, all Automotive manufacturers were affected by the global financial crisis

*1 Number of large-scale MEXA Series units *2 MPG: Miles Per Gallon. Miles (1.6 km) per gallon of fuel (3.79 L)

Leveraging measurement and control technology to contribute to future automotive development

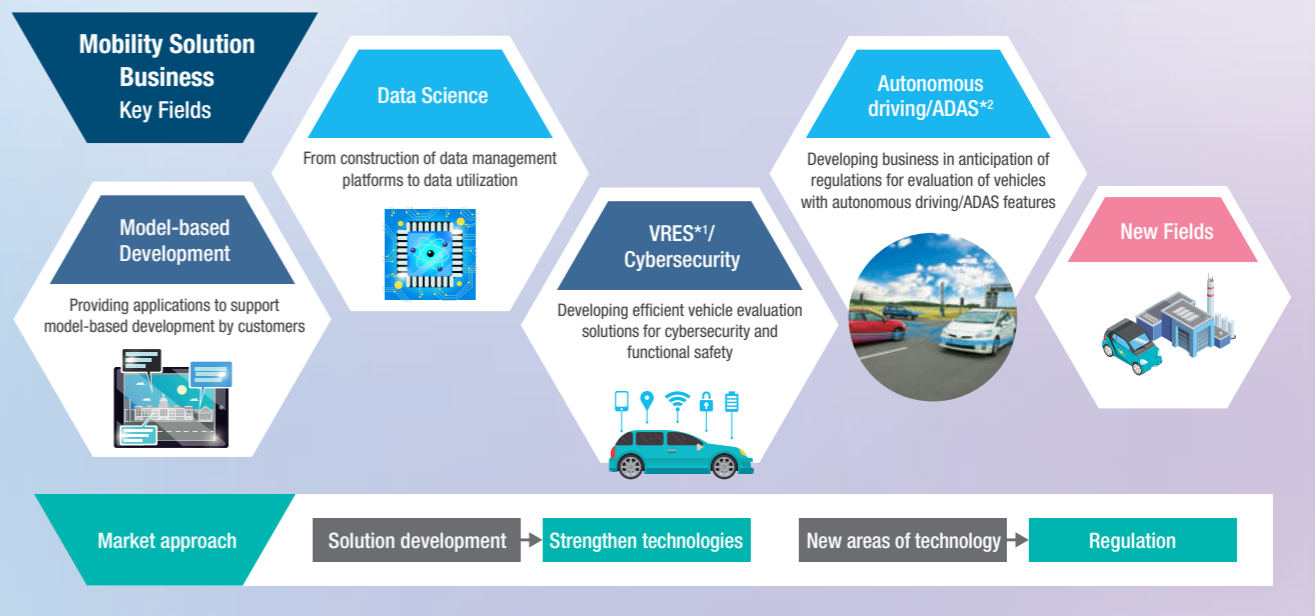
Emissions measurement equipment measures and controls the engine. Engines generate power, and can be thought of as a tiny industrial plant. HORIBA possesses the high-level technology that makes this measurement and control possible. To make a vehicle move, you can either utilize the chemical reaction of burning gasoline or hydrogen within an internal combustion engine, or utilize the electrochemical process of ion exchange to power a motor. Utilization of measurement and control technology is at the root of both methods.

HORIBA intends to continue supporting automotive development, just as we do now and have in the past.

Mobility Solution Business

Enhancing provision of solutions for the mobility business

The automotive industry is developing next-generation mobility solutions that will lead to societal transformation. And automotive manufacturers are responding to various technological demands, such as electrification, connected vehicles, and autonomous driving. The increasingly complex development process is also placing greater demands on developers. This is heightening demand for high-precision analysis and measurement equipment, as well as measurement solutions that provide efficiency and labor savings. In addition to our analysis and measurement technologies, HORIBA has the know-how to manufacture and verify prototype vehicles, and boasts a broad network of regulatory and standards-making organizations. We plan to contribute to the future mobility of society by providing solutions that support vehicle development in new automotive sectors like electrification, autonomous driving, and cybersecurity.



*1 VRES: Vehicle Resilience. Solutions to eliminate threats that accompany increasing vehicle sophistication. *2 ADAS: Advanced Driver-Assistance Systems

HORIBA MIRA Limited business expansion

Since it was established in the UK more than 70 years ago, HORIBA MIRA Limited has been involved in the development of automotive technology. They work on vehicle development engineering, testing engineering, and lease and management of R&D facilities. The various qualifications, expertise, and experience of their engineers, and unique testing facilities, allow them to offer valuable solutions for automotive development.

VRES/Cybersecurity

We are taking various approaches in the areas of vehicle cybersecurity and functional safety. HORIBA MIRA Limited has engineers on staff who were involved in the formulation of the ISO26262 functional safety standard for automobiles, giving it an advantage over competitors in this field.

A research and development project commissioned by Turkish automaker Togg also covers the VRES area.

Autonomous driving/ADAS

Our comprehensive development and engineering facility, ASSURED CAV, is a dedicated testing facility for autonomous vehicles. It boasts both physical roads and virtual environments that can simulate the variety of scenarios that autonomous vehicles could confront. Here, we can also perform testing related to vehicle control performance and safety assessment for practical application of autonomous driving technology. This helps reduce development time and costs by allowing complex simulation tests to be performed in a single location.

High-speed limit behavior assessment system with 1 km straightaway, and 300 m diameter controllable communication network.

Allows seamless digital simulation and demonstration experiments for practical application of autonomous driving technology (digital twin)

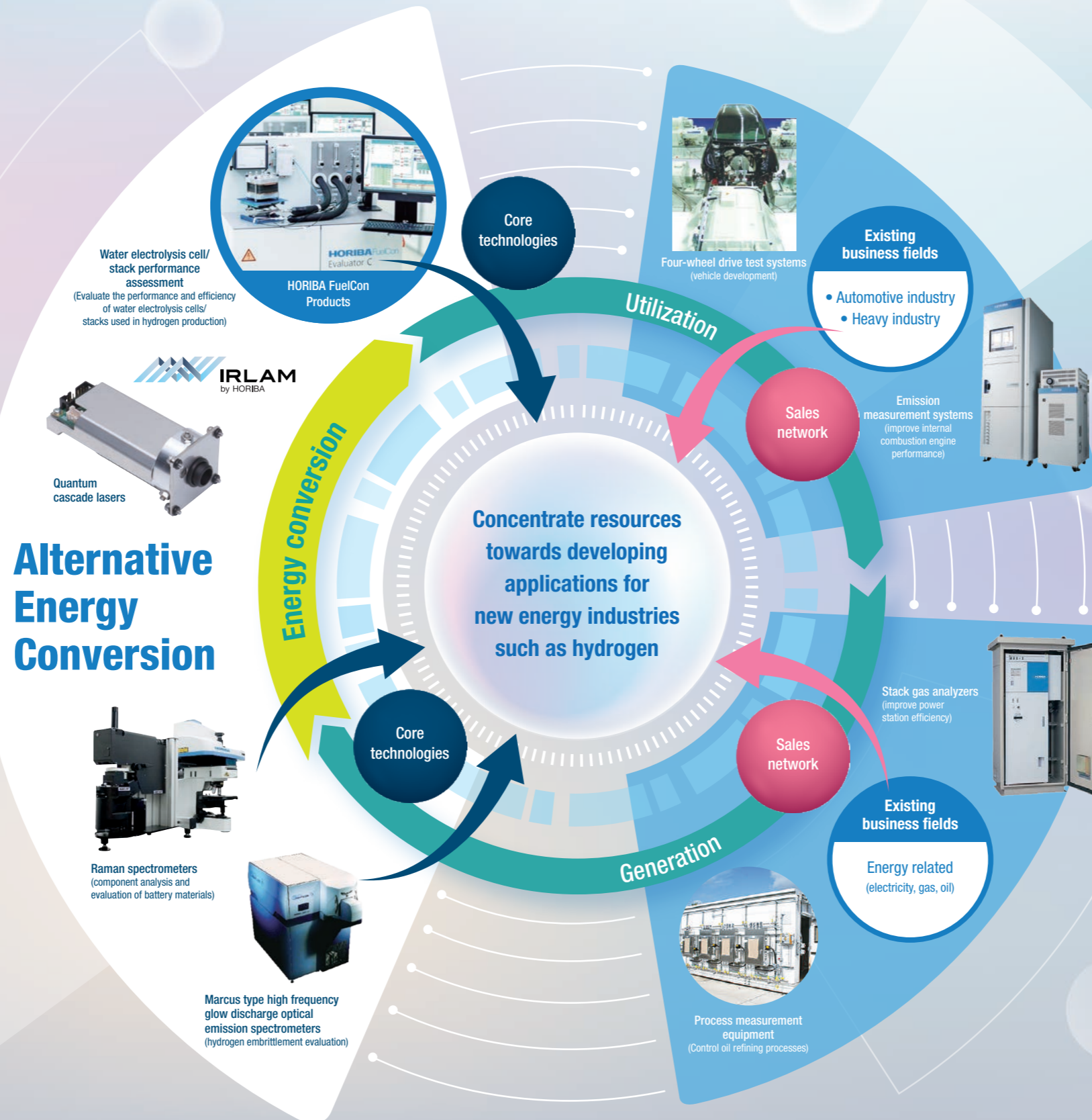
Alternative Energy Conversion

Using our existing business network to promote the development of new applications

Modern society relies on fossil fuels to supply the majority of its primary energy. In order to build a carbon neutral society, it is critical for us to diversify our primary energy sources and reduce the use of fossil fuels. In recent years, research and development related to energy production using hydrogen and ammonia, methanation*, and similar technologies, has been accelerating on a global scale. And the measurement and analysis applications which help to implement energy conversion systems in society have been gaining attention.

HORIBA has various analysis and measurement technologies that we expect to be put to use in the new energy sector. And we believe that there are numerous business opportunities in this field. We will focus on our wide range of advanced core technologies, and promote the development of applications for utilization of hydrogen and other technologies in the energy industry.

*Methanation: Technology which react with hydrogen and carbon dioxide to produce methane, the primary component of natural gas. Replacing natural gas with this synthetic methane is expected to help achieve carbon neutrality.



HORIBA FuelCon GmbH's efforts in the hydrogen business

HORIBA holds a variety of technologies related to the utilization of hydrogen energy, primarily via HORIBA FuelCon GmbH. The company, which HORIBA acquired in 2018, has manufacturing and development locations in Germany. And our new location, HORIBA eHUB, has begun operation in 2022. In addition to utilizing cutting-edge technology, they have built their own business network, and participated in the large-scale German national project, H₂Giga*. The company has been quick to pick up on global trends, and has played a major role in expanding HORIBA's hydrogen-related business.

*H₂Giga: A German project aimed at mass-producing water electrolysis devices and lowering prices



Contributing to France's carbon neutral strategy

In France, the government is leading the push to build a decarbonized society. They have made active investments towards energy efficiency, and established the clean hydrogen technology venture Genvia as a public-private partnership. In November 2021, French president Emmanuel Macron visited Genvia and announced that the government would make additional investments to promote hydrogen energy, including development investment in Genvia.

HORIBA has a wide range of business operations in France, and also supplies water electrolysis cell/stack assessment equipment to Genvia. In July 2021, President Macron even met with HORIBA Chairman & Group CEO Atsushi Horiba to discuss hydrogen-related business.

Going forward, we will continue to help build a decarbonized society in France and throughout the world.



President Macron of France and Chairman & Group CEO Atsushi Horiba meet in 2021

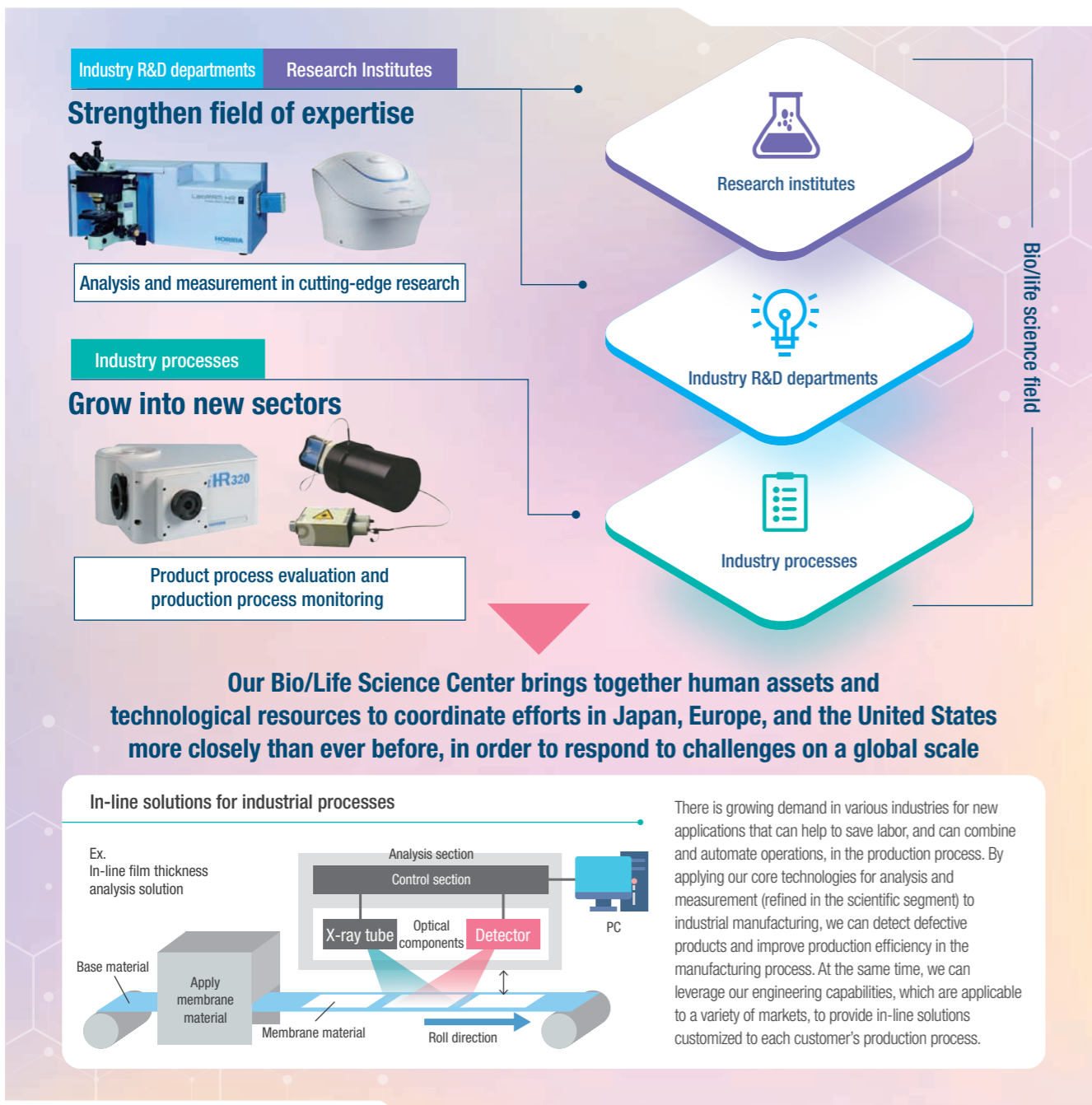
Water electrolysis cell/stack assessment equipment supplied to Genvia

Bio Life Science

Providing a wide range of analysis and measurement solutions from research and development through production

Many HORIBA products are employed by research institutions and corporate R&D departments, and the area is one of HORIBA's fortes. Transferring this strength to the manufacturing side of the industry is allowing us to expand into new areas of business. One of these is the bio/life science field.

In addition to discovering new candidate substances for use in developing new drugs, we are seeing advancements in the commercialization of new therapeutic drugs such as antibody drugs. Societal expectations for drug research and development also continue to rise. HORIBA has provided a range of technologies and products which can contribute to this kind of research and development. Plus, HORIBA analysis and measurement technology has recently been used for process monitoring in manufacturing and quality control, where there is increasing demand for sophistication, efficiency, and speed. We aim to establish HORIBA in the field of bio/life science by expanding our business into new areas like product process evaluation, while marshaling our personnel and technological resources to further strengthen our specialty of analysis and measurement in cutting-edge research.



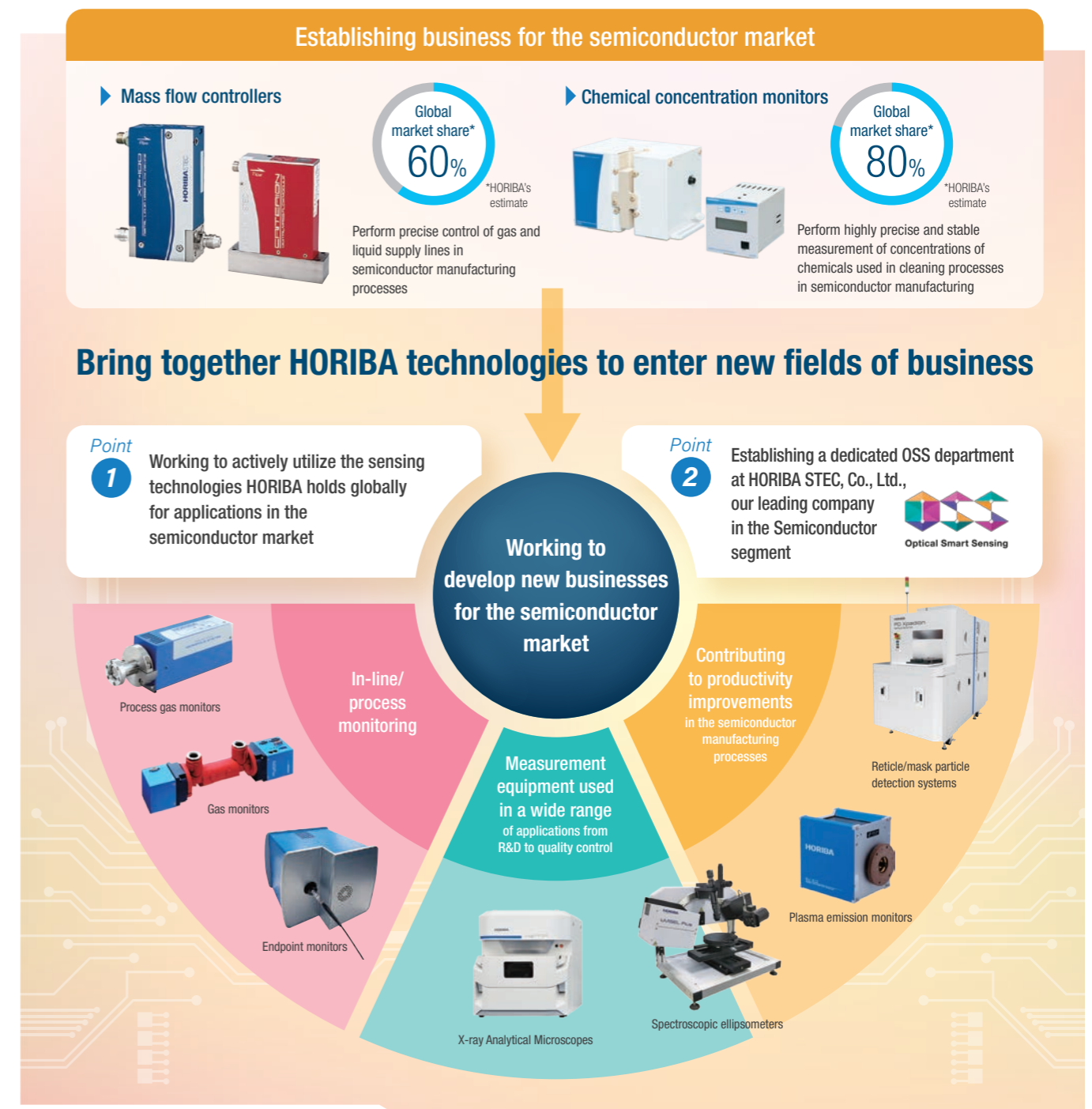
Special Feature

Optical Smart Sensing



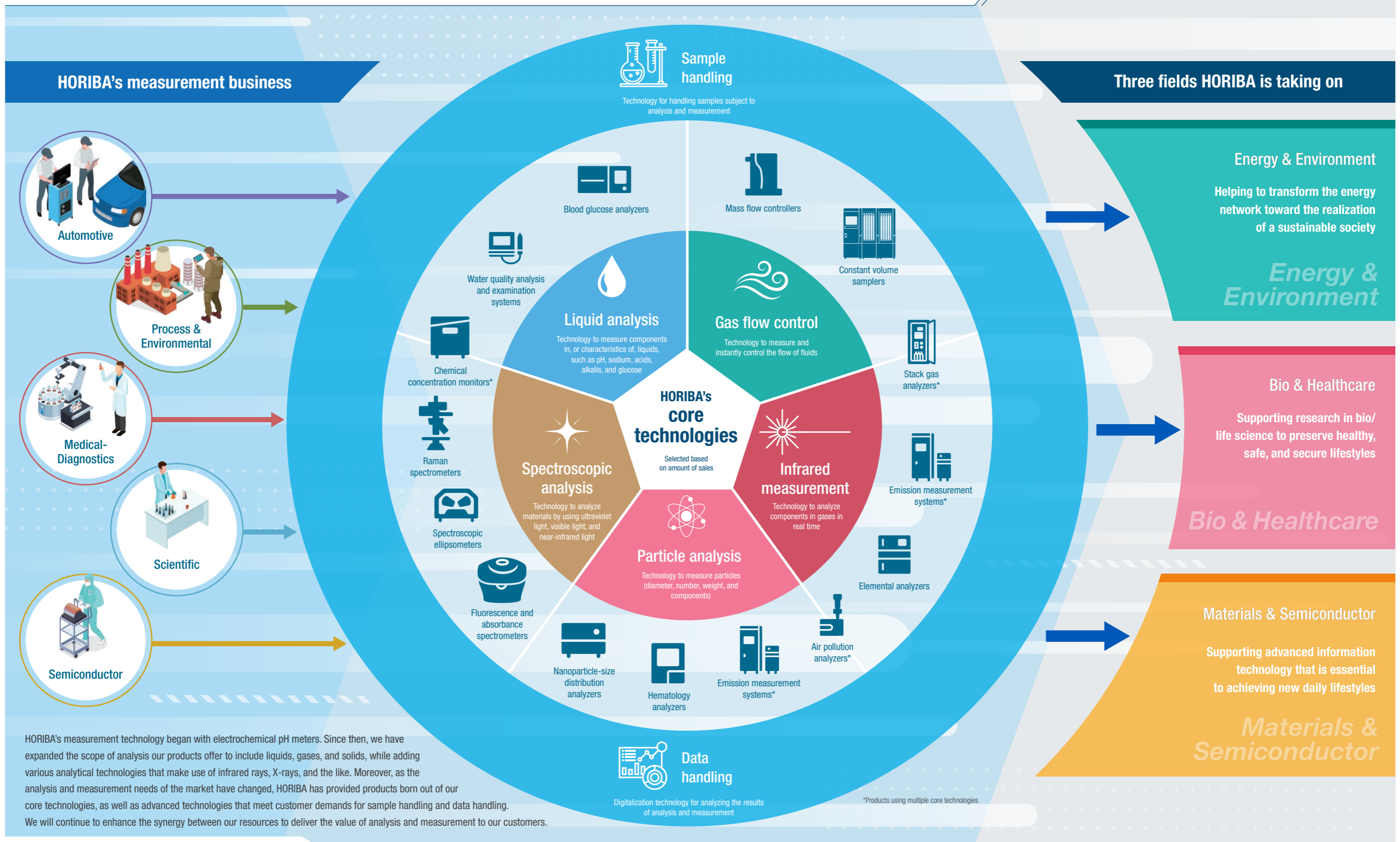
Developing sensing technology for the semiconductor market

Thus far, HORIBA has built its semiconductor market business around the primary products of mass flow controllers and chemical concentration monitors. Meanwhile, our group possesses a variety of sensing technologies that are useful to semiconductor manufacturing. So, we have established a specialized division within HORIBA STEC Co., Ltd. (our leading group company in the semiconductor business), to unify the optical businesses that had been scattered across different segments and regions. We call this Optical Smart Sensing (OSS). We will use HORIBA's cross-segment technologies and business networks to establish a new pillar of business for the semiconductor market.



R&D Planning & Technology Innovation

HORIBA's measurement technology — A wide range of technologies and their development



HORIBA's measurement technology began with electrochemical pH meters. Since then, we have expanded the scope of analysis our products offer to include liquids, gases, and solids, while adding various analytical technologies that make use of infrared rays, X-rays, and the like. Moreover, as the analysis and measurement needs of the market have changed, HORIBA has provided products born out of our core technologies, as well as advanced technologies that meet customer demands for sample handling and data handling. We will continue to enhance the synergy between our resources to deliver the value of analysis and measurement to our customers.

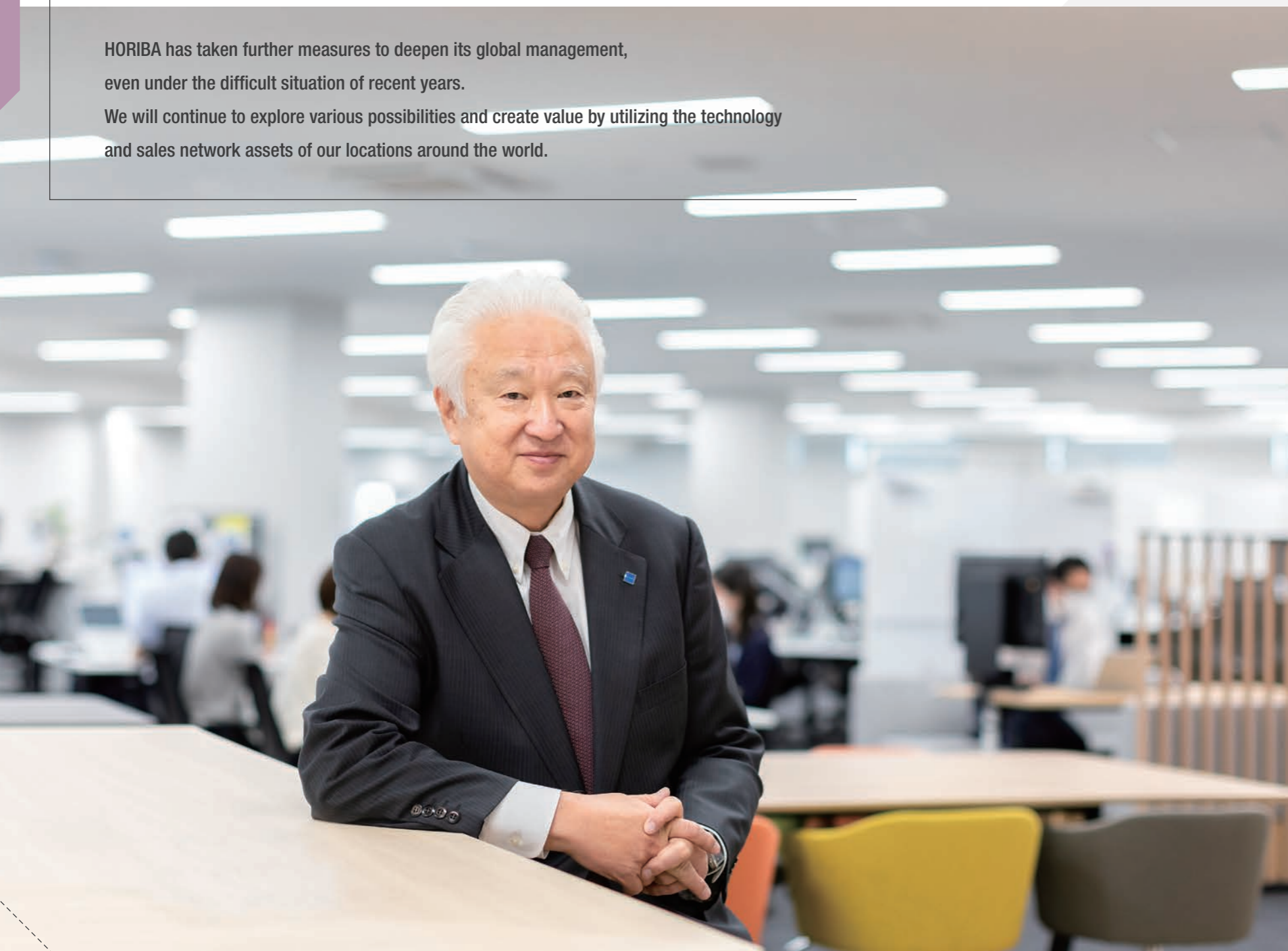
Special Feature

Build up our unique management style with diversity, like a stained glass picture

Juichi Saito Executive Vice Chairman & Group COO

HORIBA has taken further measures to deepen its global management, even under the difficult situation of recent years.

We will continue to explore various possibilities and create value by utilizing the technology and sales network assets of our locations around the world.



Deepening global management

HORIBA has always emphasized the sharing of information through direct face-to-face communication in order to build and maintain a relationship of trust within our group companies around the world. Under the circumstances posed by COVID-19, the opportunities for direct communications have been limited for a few years, and the way we operate has changed drastically. In response to these challenges, we have appointed Dr. Jai Hakhu as a new HORIBA Ltd. Board Director; he has served as the head of group companies in the U.S., France, and India, and we are expecting him to help lead our global business. Furthermore, we are actively appointing non-Japanese employees to the level of executive officer and general manager.

At HORIBA, we express our diverse human assets as a picture of stained-glass, which is organized by various pieces of glass in different colors, shapes, and sizes to create a beautiful picture. I am confident that our strength and uniqueness as a picture of stained glass is being realized at the management level as well.

The strength of our unique management style

HORIBA has expanded its business through M&A, gaining various technologies that complement our original technologies. To use a metaphor, HORIBA has various toy boxes, which are packed with the various technologies and the seeds of business. However, because the centers of excellence for each business and technology are disseminated around the world, people thought it would be difficult to use anything other than the ones that are available locally (as if the toys in each box belonged to only one of the brothers or sisters). The “cross-segment” concept publicized in our Mid-Long Term Management Plan, MLMAP 2023 is similar to sharing all of the toys from all of the toy boxes, so that all of the brothers and sisters can play with anything from any box and discover new ways to play. By freely utilizing disseminated assets, such as technologies and business networks, owned by group companies within HORIBA, we will explore various possibilities that create added value. This is what HORIBARIANS are experiencing through cross-segment activities.

We believe that the uniqueness of our management style makes it possible to promote such global cross-segment activity to generate results, which is a strength of HORIBA. This strength results from the fact that there is less hierarchy within the organization, creating an organizational structure that is as flat as possible and expanding the scope of direct influence of management. This describes HORIBA's long-standing management style, which I think of as trust-based governance.

My role is to pass along the uniqueness of HORIBA, our corporate culture, through direct dialogue and actions, and this is what I have been doing for a long time. Currently, the next generation of HORIBARIANS in each country is discussing and defining the HORIBA of the future. I am confident that they will convey HORIBA's uniqueness and conviction to current and future HORIBARIANS around the world.

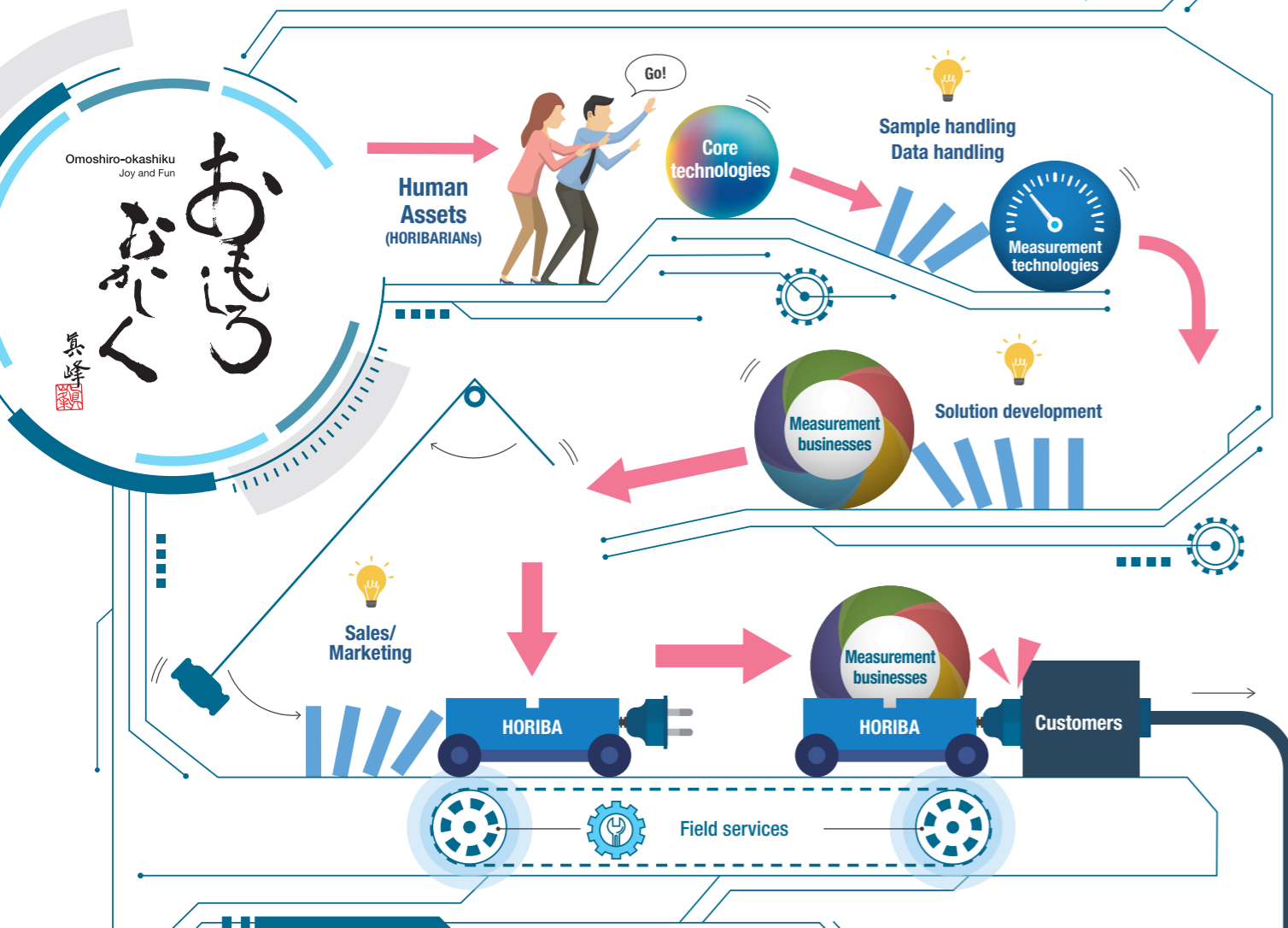
May 2022

Juichi Saito
Executive Vice Chairman & Group COO

HORIBA Value Creation Cycle

Value creation through technology and diversity of human assets

HORIBA supplies products with analysis and measurement technologies, which provide solutions to social issues. Technology and human assets support our business. HORIBA will partner with customers to contribute to building a better society and generating greater social value.



MLMAP2023
Mid - Long Term Management Plan

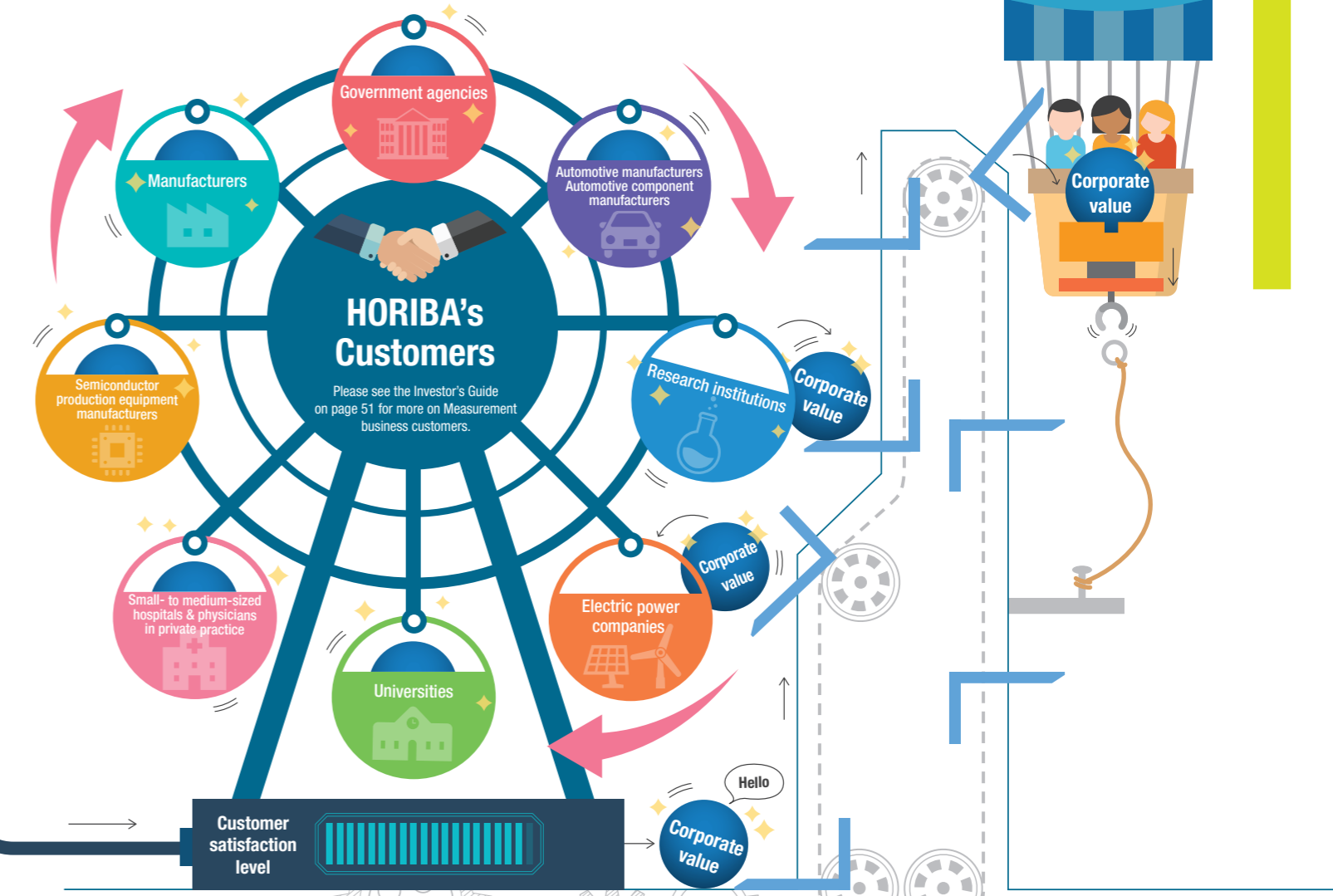
- Priority Measure 1**
Market Oriented Business
To develop analysis and measurement solutions, utilizing HORIBA's core technologies, in the leading three business fields of megatrend
Three fields Energy & Environment, Bio & Healthcare, and Materials & Semiconductor
- Priority Measure 2**
Solution Provider Beyond Life Cycle Management
To support customers' businesses from all aspects, from installation to replacement
- Priority Measure 3**
HORIBA Core Values The Next Stage of the Super Dream Team
To enhance the organizational structure that fosters resilient human assets, which are the driving force of all business operations

Creating social value — Contributing to the SDGs*

Creating value by expanding business that addresses various social issues



*SDGs refers to the Sustainable Development Goals unanimously adopted by the United Nations General Assembly in 2015.



Helping to Build a Sustainable Society through our Business

Helping to build a sustainable society

HORIBA Institute for Mobility and Connectivity² (HiMaC²)

Our energy system was previously unidirectional: from generation, to transmission, to distribution. Today it is transforming into a bidirectional system. However, conversion of the system will require research and empirical experiments into technical issues. These issues involve the country's energy system, and are too large to be a research theme for a single company. So, it is vital to pull in universities and related organizations as collaborators. With these social challenges and the advent of a sustainable energy-based society in mind, we decided to support the establishment of HiMaC² at the University of California, Irvine in 2018. This research institute aims to achieve connectivity between power and mobility. Its four laboratories (focused on Automotive Development, Grid Development, Connected/Autonomous Driving, and Energy-related Materials Research) pursue research topics that span the fields of mobility and energy.



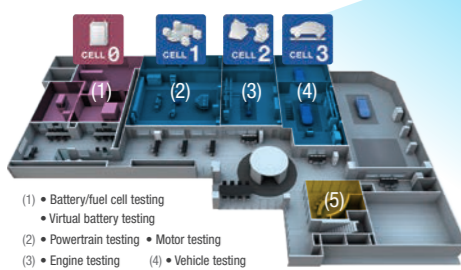
- ▶ A research institute for connectivity between power and mobility
- ▶ In 2018, we decided to support the institute with a view to the arrival of a sustainable-energy-based society

Efforts toward carbon neutrality

Establishing an environmentally harmonious energy system social cooperation program with the University of Tokyo

On April 1, 2022, we established a social cooperation course for sustainable energy systems with the School of Engineering at the University of Tokyo. It is becoming increasingly important to carry out environmental impact assessments with tools such as Life Cycle Assessment (LCA) in order to achieve carbon neutrality. However, energy consumption at R&D sites is not constant, and has not received much attention until now. This course unites the University of Tokyo's world-renowned forecasting technology (AI) with HORIBA's long-cultivated analysis and measurement technology. Researchers use these technologies to conduct joint research toward the construction of energy management systems that can provide visualization of energy consumption at R&D sites, leading to optimal utilization of energy. We aim to commercialize the systems developed through joint research and work towards their implementation at R&D facilities in a wide range of industries.

Field trials are being conducted at the E-Lab in the HORIBA BIWAKO E-HARBOR



- (1) • Battery/fuel cell testing
• Virtual battery testing
- (2) • Powertrain testing • Motor testing
- (3) • Engine testing (4) • Vehicle testing
- (5) • Central control room



HORIBA BIWAKO E-HARBOR

- Compact integration of the various elements required for automotive development tests
- Capacity to perform complex experiments by linking the test rooms together



[Pictured from left] Takao Someya, Dean of the School of Engineering at the University of Tokyo
Atsushi Horiba, HORIBA, Ltd. Chairman & Group CEO

Providing high-precision analysis and measurement, and high-level analytical skills

Hayabusa 2 —Sample Analysis Project—

HORIBA Techno Service Co., Ltd. handles our services business. In 2021, they participated in the project to analyze samples brought back from the asteroid Ryugu by the asteroid explorer Hayabusa2.

HORIBA not only possesses the technology to manufacture the world's leading analysis and measurement systems, but human assets capable of performing high-precision analysis. In this project, we used equipment such as HORIBA X-ray fluorescence analyzers to perform non-destructive, non-contact analysis of the chemical composition of these samples, to determine the origin and etiology of Ryugu. We found that Ryugu is similar to meteorites rich in organic carbon, and has a composition most similar to that of the sun. In other words, it is close to the average element composition of the solar system. In addition, it was discovered to contain structured water and carbonates, and is thought to hold information about the solar system around the time of its formation. The asteroid was thus found to be an early celestial object that had previously produced water. By participating in these kinds of projects, HORIBA has helped to open up a new page in the story of humanity.



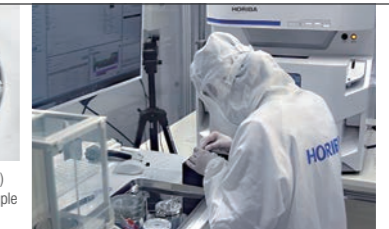
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HORIBA's Contribution

- Elemental analysis with X-ray Analytical Microscopes
- Discovered carbonates with Raman spectrometers
- Quantitative analysis of carbonates and organics using Carbon/Sulfur analyzers



Developed a special container (cell) to allow advanced handling of sample materials from Ryugu



Project Colors

Activities of HORIBA Advanced Techno, Co., Ltd.

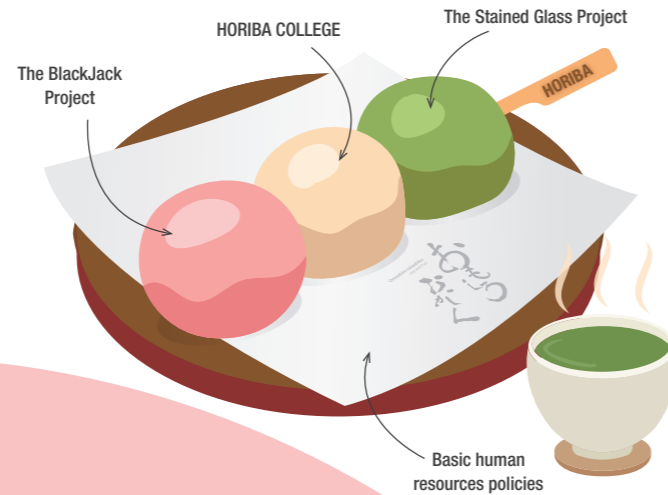
HORIBA Advanced Techno, Co., Ltd., which conducts water quality measurement-related business, considered how they could contribute to the SDGs, and launched a project named Project Colors in 2020. About 30 people, divided into five teams and one special team, hold workshops and promote activities based on each of the themes below.

<p>Team 1</p> <p>Internal educational activities</p> <p>Launched an information portal on the company intranet</p>	<p>Team 2</p> <p>Activities through education</p> <p>Held online experiences for the families of HORIBARIANS</p>	<p>Team 3</p> <p>Creating concept models and worldviews for a splendid future</p> <p>Created a concept video!</p> <p>You can watch it here (Japanese only)</p>	<p>Team 4</p> <p>Going paperless</p> <p>Eliminating all paper use</p> <p>Estimated the environmental impact of going paperless</p>	<p>Team 5</p> <p>Promotion of joyful recycling</p> <p>Adopting a recycling mark for packaging</p>	<p>Special team</p> <p>Water cycle game</p> <p>Learn about water with Joy and Fun</p> <p>Created a board game through trial and error</p>
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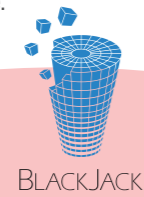
Various Initiatives Spotlighting Human Assets

Three measures to support the activities of HORIBARIANS

The driving force behind business growth is the power of people. As represented by our BlackJack Project, HORIBA COLLEGE, and Stained Glass Project, we have continuously striven to maximize the individuality and skills of HORIBARIANS. Going forward, through unique HORIBA human asset strategies, we are committed to putting our corporate motto of "Joy and Fun" into concrete practice, while also building structures that allow each and every employee to shine.



Measure 01



The BlackJack Project

HORIBA launched the BlackJack Project in 1997 with the purpose of changing employee awareness and behavior. To date, more than 12,000 project themes have been registered. Employees themselves select themes to tackle from many questions and issues, such as improving work efficiency, developing human assets, and strengthening organizational capabilities. Then they determine how things ought to be, and work toward organizational reform. Every year, we hold BlackJack World Cup to select the best themes of projects from each country. This provides an opportunity to report the results, and the motivations behind them, to the management team. It also plays an important role in sharing our corporate culture, experience, and knowledge across HORIBA globally.

Three Keywords

1
HORIBA-style management system

2
Three objectives of BlackJack activities

3
Direct communication between front-line employees and management

- 2**
- Performance (results)
 - Learn (experience, notice, and learn)
 - Enjoyment (joy and fun)

Instead of focusing only on results, we place importance on the process and intention behind achieving our goals. The things we gain in the process have knock-on effects for our business as well.

3

Each group company holds a monthly Progress Review Meeting (PRM), during which front-line staff report issues, observations, and results directly to management. This has gained traction as one of the best ways for management to find out what is happening in the workplace, and plays an important role in sustaining favorable performance.



1

This project is intended to boost awareness and promote lasting behavioral changes in HORIBARIANS that will lead to improved productivity and organizational capabilities. We are using it to create a corporate culture that can respond quickly and flexibly to various environmental changes.

Message



Sumiyo Ishikawa
Deputy General Manager,
BlackJack Project Advanced
Management Office

Strengthening our corporate foundations to further increase awareness and improve management capabilities, so that HORIBA will continue to develop as a strong company in the 21st century

This year marks the 25th anniversary of the BlackJack Project. Today it has become established not only at our group companies in Japan, but throughout the world. And I feel that it embodies the very culture of HORIBA.

We define BlackJack as encompassing all activities that attempt to change our way of doing things or approach them from a different perspective, not simply the results brought about by those activities. I believe that the improvement in experience, learning, and motivation obtained through these activities can elicit permanent behavioral changes, and contributes to the development of independent human assets. Plus, many BlackJack activities grow out of issues and points for improvement observed in the workplace. And as one of the best ways to communicate the realities of the workplace to management, these activities help to strengthen our management capabilities and organizational infrastructure. Vital organizations are those who are continually engaged in such activities. And the people who participate in these activities know from first-hand experience that the activities themselves are part of the driving force behind HORIBA. Each of our project promotion offices at group companies in Japan, and promoters at our group companies outside of Japan, will continue to support the activities of front-line members engaged in Joy and Fun.



Basic human resources policies

Open and Fair

We ensure that important information and rules are shared openly so that there is free communication within the company. We provide fair opportunities for uniquely individual and diverse human assets to challenge themselves.

Point-added policy

HORIBA's point-added policy doesn't confer any points unless an employee takes on challenges, even if they have not necessarily failed in their endeavors. Points are conferred for taking on challenges. If successful, further points are conferred. This system supports and recognizes ambitious human assets, while valuing the start-up mindset.

HORIBA's five pillars of omoi*

We firmly hold and implement the five pillars of *omoi*, to ensure each and every employee can personally attain our company motto of Joy and Fun.

"Omoi" means an emotional feeling, passion, thoughts, enthusiasm, desire, aspiration, ambition, commitment, mission, and objective. We encourage our employees to have the following "Omoi," which is the essence of acting on "Joy and Fun" through their work.

- To be a part of a collaborative community, at the forefront of new ideas and creations.
- To achieve goals and make life memorable by fostering the highest intellectual potential.
- To reach across the globe to expand learning that captures key business developments, wherever they occur.
- To be proud of sharing what I do and what HORIBA delivers.
- To be helpful to the world and its people.

* The Japanese word *omoi* is used in English as well, to engender shared values among global employees.

Two-way communication

Information is not conveyed, it is shared. We employ various mechanisms, including global gatherings where ideas are directly voiced to management and birthday gatherings for employees, to remove the barriers of position and organization. This helps us to achieve true reciprocal communication.

Measure 02



HORIBA COLLEGE

HORIBA COLLEGE allows HORIBARIANS to determine what programs they need, become lecturers themselves, and share their skills and experience within the company. Each participant asks themselves, "What do I need to learn now?" This ensures that know-how continues to be passed on efficiently and systematically, and builds a foundation for the growth of many HORIBARIANS.

Three Keywords

1
FUN HOUSE
- A training center you want to visit

2
Pursue
"HONMAMON"

3
Talk about omoi

2

We learn from and teach one another, based on our policies of talking about HORIBA and honing our skills. This allows us to pass on our expertise and know-how, and experience the pursuit of "HONMAMON." Finally, we use what we have learned to continue to take on new challenges.

3

At HORIBA, we see training as an opportunity for communication. Getting out of our usual environments, and gathering around a fireplace to share our *omoi*, helps us to put Joy and Fun into practice by allowing each person's individual personality and abilities to blossom.



1

HORIBA COLLEGE lectures are held at FUN HOUSE, a special venue that is more than just a training facility. Located in a valley of abundant nature and greenery, it aims to provide true value, and be a place that employees look forward to visiting. We offer a program intended to transform participant knowledge in a first-class environment where all five senses are engaged.

Message



Hitoshi Motokawa
Junior Corporate Officer
Principal, HORIBA COLLEGE

Not "Human Resources" but "Human Assets"

HORIBA considers all employees to be valuable company assets, and refers to them as "human assets." Not "materials," but "wealth." In order to become first-class human assets who pursue the genuine article and put Joy and Fun into practice, we learn from and teach one another in a training facility that we are excited to visit. HORIBA COLLEGE is a place to make each of our *omoi* a reality. This is where true communication, that transcends the bounds of position and organization, is born. It allows us to become HORIBARIANS who continue to take on new challenges in a new era. Starting this spring, as the new Principal of HORIBA COLLEGE, I will work to make it a stage for expanding the HORIBA-style human asset development that we have built up thus far.

Various Initiatives Spotlighting Human Assets

External evaluation



HORIBA has been selected as a Semi-Nadeshiko Brand, a title jointly conferred by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange. In addition, we were recognized under the 2022 Certified Health & Productivity Management Outstanding Organizations Recognition Program (White 500), for the sixth year in a row. This is a program jointly promoted by the Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi.



Semi-Nadeshiko Brand

With regard to our initiatives to promote diversity, we received high marks in the categories of integrating diversity into corporate strategy, governance, improvement of company-wide environments and rules, and change in behavior and awareness of employees.



In 2012, HORIBA's top management issued our Physical and Mental Health Promotion Declaration. In recognition of our various initiatives in pursuit of its goals, we were included in the 2022 Certified Health & Productivity Management Outstanding Organizations Recognition Program (White 500).

Measure 03

The Stained Glass Project

In 2014, we launched our Stained Glass Project to convey an image of the goal we strive to reach. This project portrays the company as a beautiful stained glass picture; each employee is a piece of stained glass with a unique color, shape, and size. In 2017, the company launched a diversity promotion unit, the HORIBA Stained Glass Project Office. This office is responsible for connecting and aligning senior management, worksite employees, and the Human Resources Division to further enrich the diversity of our human assets. This entails reforming the way we work, and promoting activities in pursuit of more meaningful work in environments conducive to work. In 2021, the ratio of female employees at HORIBA, Ltd. was 24.8%* of the total workforce, and the ratio of women in leadership positions equivalent to section chief was 11.5%*. We continue to appoint many female leaders to positions such as department head and executive officer, as well as to the management ranks of our group companies outside of Japan.

Three Keywords

1

Gender diversity

1

We have been selected as a Nadeshiko Brand for three years in a row since 2019. This came in recognition of HORIBA's original initiatives, such as developing female leaders through communication between employees and supervisors. In 2022, we were selected as a Semi-Nadeshiko brand. More and more women are taking center stage in various workplaces and projects.

Message



Maki Moriguchi

Junior Corporate Officer
General Manager,
Stained Glass Project Office

HORIBA's strength is that each person shines in their own way, like a piece of stained glass

HORIBA has grown thanks to the strength of its global business and market diversity. Each employee who has been active in the workplace has supported this growth. I believe that as the pace of social change accelerates, maintaining a culture where employees can demonstrate their individuality and strengths will lead to future growth.

Front-line employees have been the primary actors in the Stained Glass Project, making proposals to management, and implementing systems and initiatives. We are working together with management and the human resource department to create a stage where leaders full of individuality can overcome the unconscious barriers they have placed on themselves due to personal attributes and limitations, take on various new challenges, and play an active role in the world.

2

Activities to support diverse human assets

2

We provide a variety of support to help our employees flourish. This includes a system to recognize employees who are raising children or nursing elderly family members, or who are active in spite of limitations due to disability or injury. We also continue to hold workshops for such members. In addition, our personnel measures include actively recruiting foreign employees and facilitating the exchange of managerial level human assets with our group companies outside of Japan.

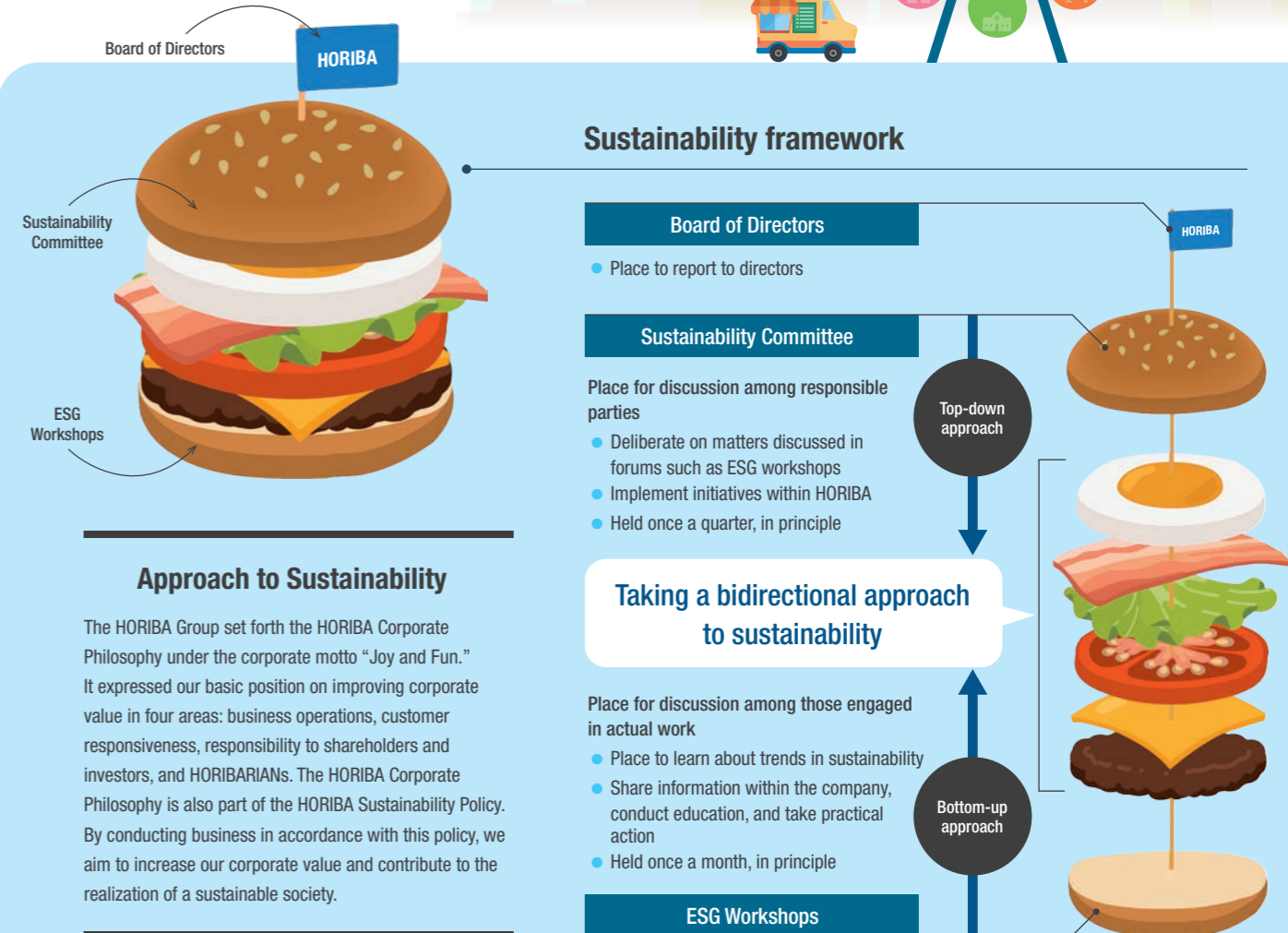
3

The telecommuting system (Good Place work system) that we introduced in 2006 and expanded to the entire company in 2019, also came about due to the activities of the Stained Glass Project. Moreover, thanks to our continuing support for improving work-life balance, we achieved a paid-time-off utilization rate of 65.6%*, and a child care leave utilization rate for male employees of 75%* in 2021.

*Figures are for full-time employees of HORIBA, Ltd.

HORIBA Approach to Sustainability

Taking a bidirectional, company-wide approach to sustainability on all fronts



Approach to Sustainability

The HORIBA Group set forth the HORIBA Corporate Philosophy under the corporate motto "Joy and Fun." It expressed our basic position on improving corporate value in four areas: business operations, customer responsiveness, responsibility to shareholders and investors, and HORIBARIANS. The HORIBA Corporate Philosophy is also part of the HORIBA Sustainability Policy. By conducting business in accordance with this policy, we aim to increase our corporate value and contribute to the realization of a sustainable society.

HORIBA Corporate Philosophy and Code of Ethics

We revised our Code of Ethics in 2021, and reviewed our Corporate Philosophy in 2022.

The HORIBA Corporate Philosophy spells out HORIBA's mission in society, and the Code of Ethics outlines eight guiding principles for doing business. These include respect for human rights and environmental issues. Both are written in English and form the basis of HORIBA's approach to sustainability.

HORIBA Corporate Philosophy

Web Link



Code of Ethics

Web Link



Signatory to international initiatives

United Nations Global Compact (UNGC)
HORIBA, Ltd. has supported the initiatives of the United Nations Global Compact since we became a signatory in 2012 through the agreement of senior management.





Masao Okawa
Managing Director and General Manager
of Finance and Legal Division

HORIBA continues to invest in long-term growth while pursuing profitability in existing businesses. Aiming to increase corporate value by supporting business transformation

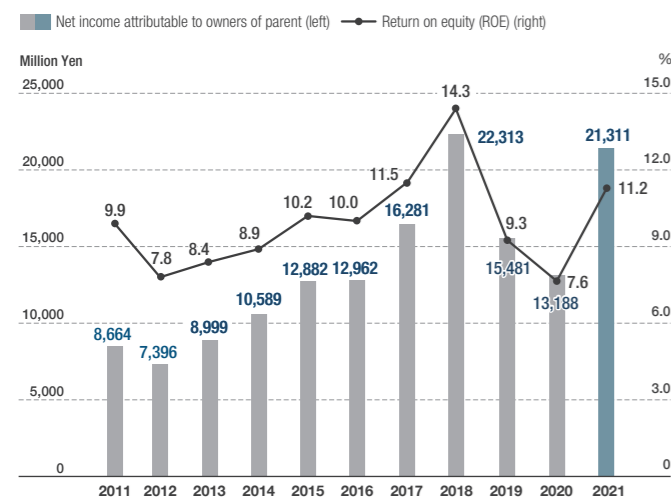
Results of HORIBA Group – Looking back on the year ended December 31, 2021 –

In fiscal 2021, sales increased 37.2 billion yen to 224.3 billion yen (up 19.9% year-on-year). While sales decreased in the Automotive segment, sales to semiconductor production equipment manufacturers grew, due to factors such as expansion of capital expenditures by semiconductor manufacturers. Thus, we saw a large increase in sales in the Semiconductor segment. Thanks to the increase in sales, operating income increased by 12.3 billion yen (up 62.7% year-on-year) to a total of 32.0 billion yen. Sales, operating income, and ordinary income all set new records, and ROE reached 11.2%.

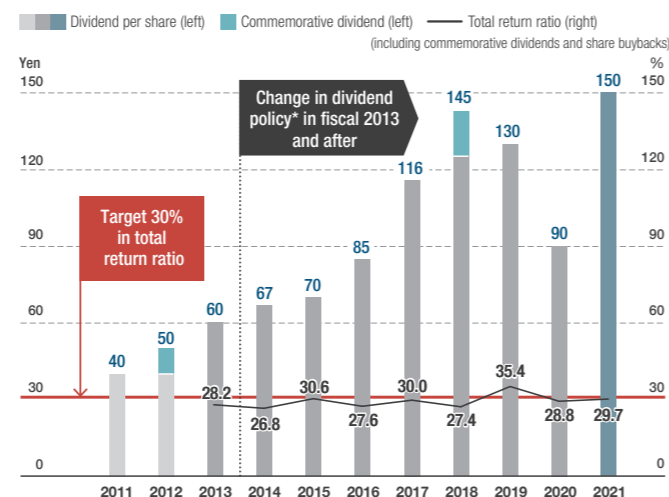
Based on these results, we decided to provide a dividend of 150 yen per share for fiscal 2021. HORIBA has adopted a policy of setting its total shareholder return ratio, which includes dividends and share buybacks, to about 30% of consolidated net income.

We intend to pursue profit through existing businesses while continuing to invest in long-term growth. We also aim to support business transformation and increase corporate value.

Net income and Return on equity (ROE)

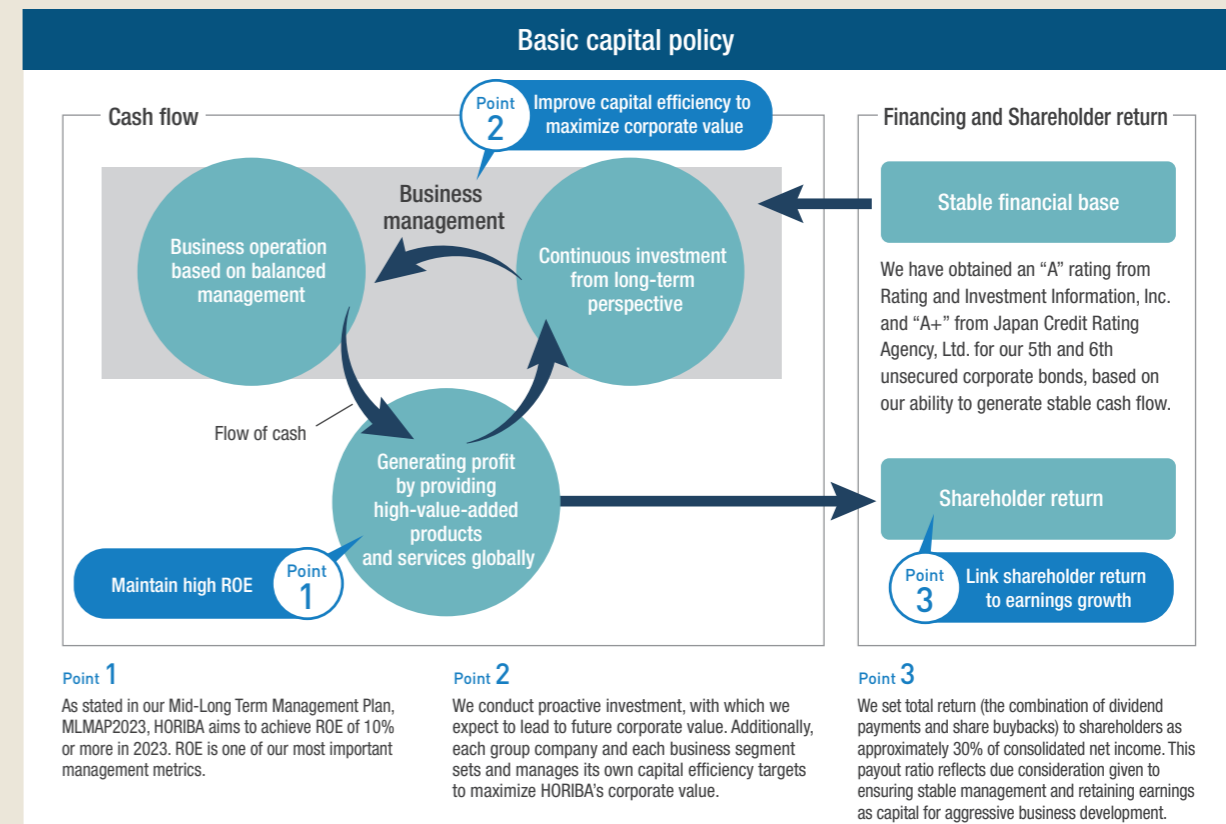


Dividend payments and total return ratio



* In fiscal 2013, we switched from a non-consolidated dividend payout ratio, which is based on non-consolidated net income at HORIBA, Ltd., to a total return ratio, which is based on HORIBA's consolidated net income.

HORIBA's Basic Financial Policy



Approach to continuous investment

Investment in R&D

We believe that continuous R&D investment is the source of our competitiveness, and accordingly we invest the equivalent of 10% of our sales in R&D even during recessions, when many companies reduce their investment. This has allowed us to increase market share when demand has recovered.

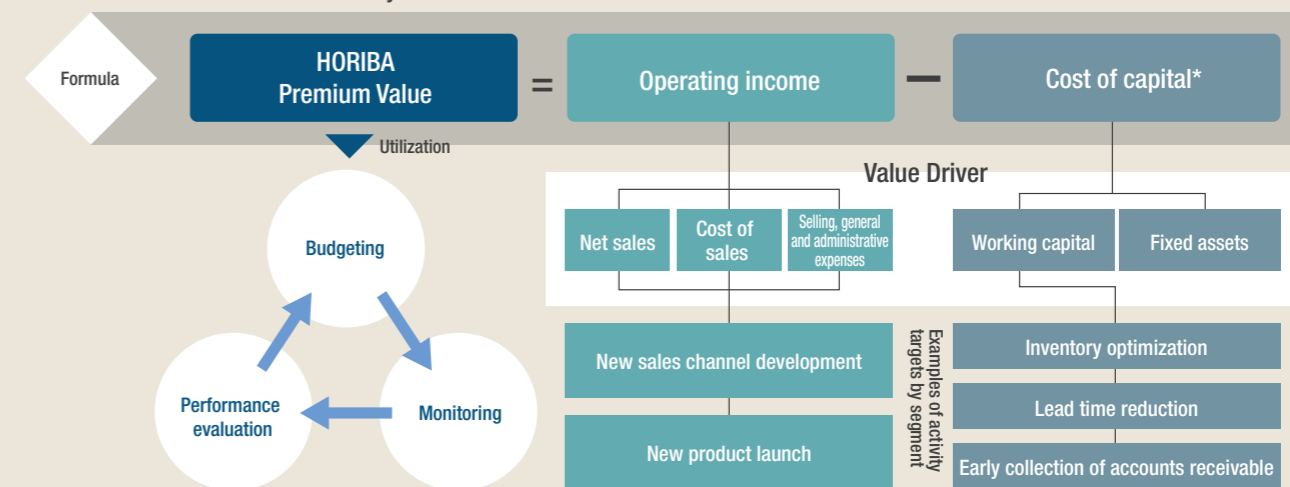
Capital expenditure

Regardless of short-term declines in asset efficiency, we invest for the future from a medium- to long-term perspective. In recent years, we have continued to make high-level investments to continue to respond to changes in the market environment.

Approach to M&A

From a long-term perspective, we are making friendly acquisitions of entities that have unique technologies, which complement, or have potential synergies with, HORIBA's technology portfolio.

Tree of indices of asset efficiency



* Cost of capital: Invested capital × In-house rate of cost of capital. We apply a unique benchmark that is based on HORIBA's WACC and comparable with operating income in connection with our cost of a capital target. Currently, we conduct this evaluation by applying the same rate to all regions and businesses and monitoring degrees of improvement.

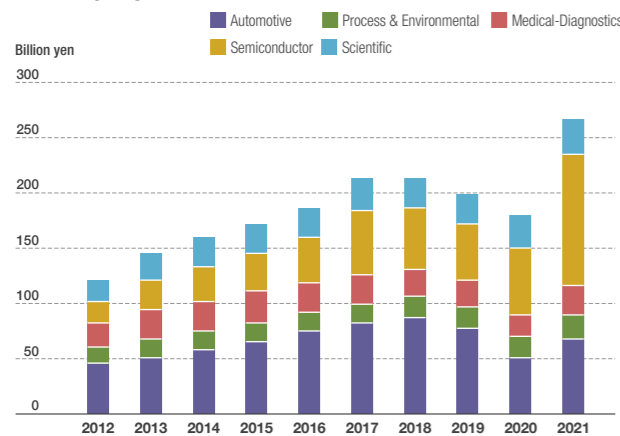
Balanced management and handling changes in the external environment

The environment in which HORIBA operates is changing at an accelerating pace. The automotive industry is diversifying vehicle power trains in order to decarbonize and achieve carbon neutrality. This has stalled capital investment by automotive manufacturers for internal combustion engines. Due to this change, automotive sales slowed and we posted a loss in the Automotive segment in 2021. On the other hand, semiconductor demand has skyrocketed against a background of increasing digital telecommunications and technological advancement. As a result, we were able to post our best-ever sales and operating income in the Semiconductor segment. I believe that these positive earnings are thanks to our advancement of a balanced management approach between our five business segments, and maintaining investment even when performance is poor. HORIBA STEC Co., Ltd.'s Aso factory (our primary plant in the Semiconductor segment) was damaged during the April 2016 Kumamoto earthquake. However, just three months later, we decided to invest in expanding the plant to 1.5 times its former floor space. In this way, we have strengthened our supply capabilities in expectation of future demand.

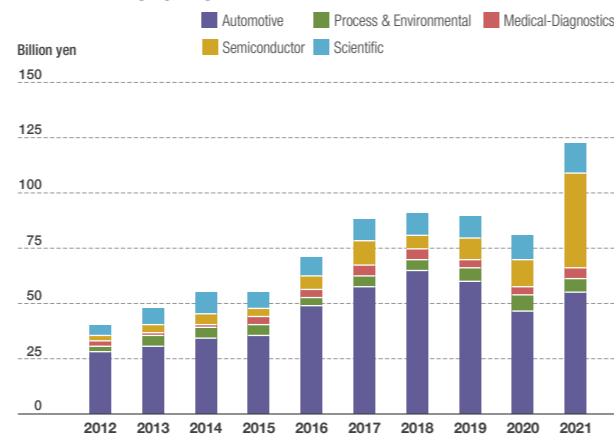
Thus, HORIBA has quickly detected changes in the external environment and course of events, and taken decisive actions to make various long-term investments in response to such changes. We have continuously invested in new fields of technology, such as hydrogen energy technology. And we aim to turn these investments into profitable businesses. Meanwhile, we are pursuing improved efficiency and profitability through efforts such as shortening our CCC* based on HORIBA Premium Value. Looking at the situation from a cash flow perspective, we had a 14.6 billion yen deficit in cash flows from investing activities in 2021, and a 35.2 billion yen surplus in cash flows from business activities. This left us with a 20.6 billion yen surplus in free cash flow, our highest ever. Furthermore, at the end of 2020, we had completed financial arrangements for planned loan repayments in fiscal 2022, large-scale growth investment and M&A from fiscal 2022 onward. Therefore, we had a 4.0 billion yen deficit in cash flows from financing activities in fiscal 2021, primarily for payment of dividends.

*CCC: Cash Conversion Cycle. The turnover period from accounts payable to collection of accounts receivable. This is an index which measures the efficiency of working capital.

Orders by segment

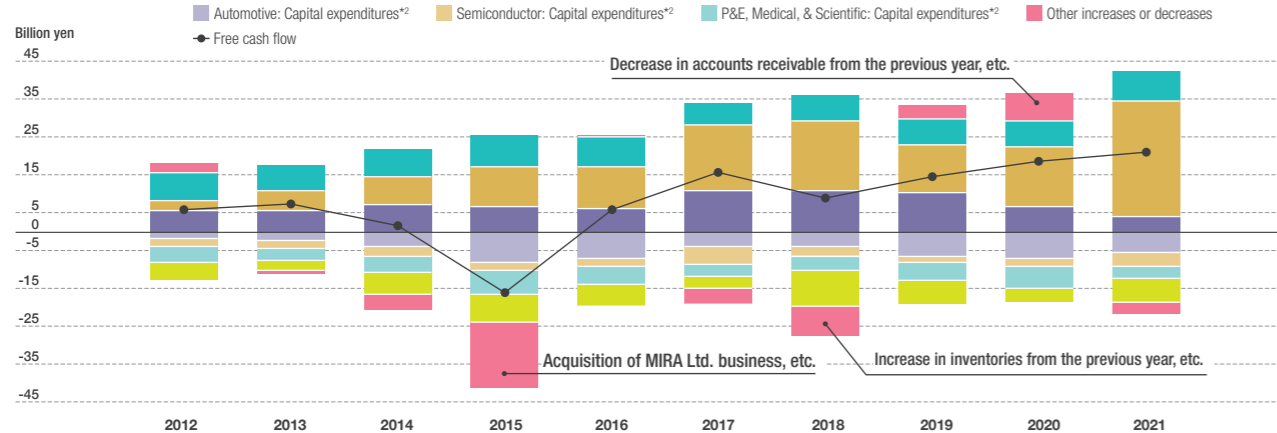


Order backlog by segment



In 2021, thanks to favorable demand, the amount of orders received in the Semiconductor segment doubled, and company-wide order booking reached their highest level ever, at 266.3 billion yen (a 49.6% increase).

Free cash flow



Our free cash flow for 2021 was 20.6 billion yen, the highest ever, due to an increase in operating income.

*1 Operating income: Amount before depreciation and amortization *2 Capital expenditures: Amount invested in physical fixed assets and intangible assets

Region-centric global operations

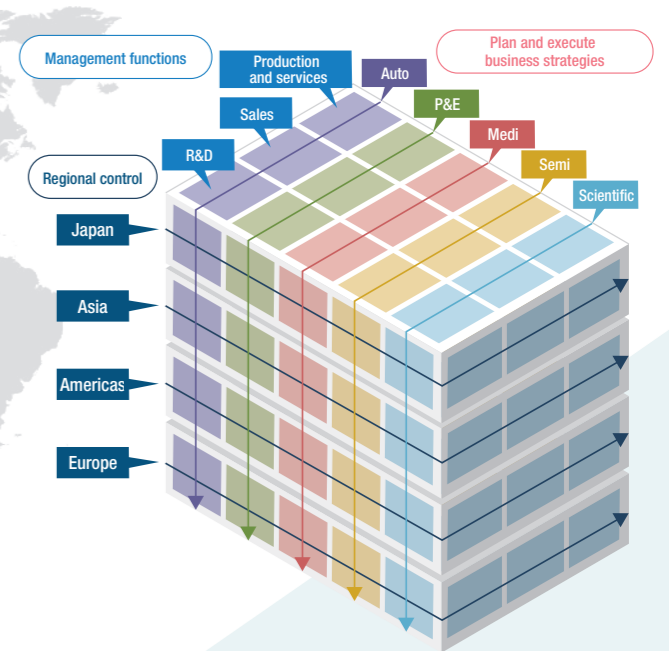
HORIBA's global operations are region-centric and respect the independence of each affiliate. Local CFOs are hired there, and we build regional organizations rooted in the local area and enable them to operate autonomously. In addition, we hold online International Controllers' Meetings every quarter by region, to promote initiatives to link regional affiliates with headquarters. We have also established financial subsidiaries in the United States, Europe, the United Kingdom, and China. Their goal is to enable efficient financing activities through transfer of funds within the group, and to reduce currency exchange risk.

In recent years, we have been expanding our global activities across segments. More and more, we are planning and executing projects that transcend the boundaries of HORIBA operations to date. We will maintain our base focus on segments and regions, as we continue to stimulate these cross-segment activities. We will also take a more flexible approach to management systems and provide suitable support for business transformation.

Global cash management system



HORIBA's global matrix management



Approximately 70% of HORIBA's sales, and many of our development and production facilities are located outside of Japan. For our group's primary currencies, we have established financial subsidiaries to efficiently handle surplus funds within the group. They also help reduce risks like those related to currency exchange. We are constructing independent cash management systems for each currency region so as to promote shared services and cash pooling.

Communication with investors

HORIBA conducts IR activities in line with our IR Activities Policy, determined by the Board of Directors in February 2016. It clearly explains, not only our management policies and conditions, but our corporate culture. By working hard to secure the understanding of investors, we hope to earn their continued support as HORIBA fans.

In 2021, we conducted interviews with (a sum total equivalent to) approximately 500 institutional investors and analysts from 300 companies. Then, in December, we held the HORIBA IR Day - SEMICON Follow-up Meeting, where numerous investors attended. We also held roughly 60 Top IR dialogs between senior management and investors. We value these opportunities for direct communication between senior management and investors.

We are pursuing business growth, and have defined Market Oriented Business as one of the key measures in our Mid-Long Term Management Plan, MLMAP2023. And in HORIBA's three focus fields of Energy & Environment, Bio & Healthcare, and Materials & Semiconductor, we are promoting cross-segment operations that go beyond our existing business segments. HORIBA businesses, which create new value at the intersection of our various core technologies and customer needs, are often not easy to clearly explain. But we believe it is important to faithfully explain the progress of each in order for investors to properly understand and evaluate how HORIBA is trying to change.

Going forward, we will pursue even further profitability in existing businesses, while making the necessary investments for continued long-term growth. In this way, we aim to sustainably increase our corporate value together with all of our stakeholders.

Please see our website for our IR Activities Policy (Japanese only).



Corporate Governance

Basic Policy on Corporate Governance

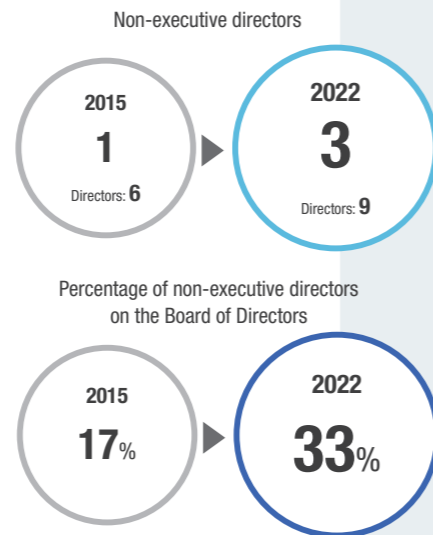
Based on the corporate philosophy of "Open and Fair," HORIBA has pledged to (1) establish an organizational structure that promptly responds to changes in the business environment, (2) improve its managerial monitoring of performance, and (3) enhance compliance-related arrangements. These objectives have the aim of establishing a world-class governance structure. At the same time, we are committed to establishing good relationships with all stakeholders, including owners (shareholders), customers, employees, and local communities. In addition to proper information disclosure, we seek to promote constructive dialogue with our owners, contributing to our sustainable growth and medium-to long-term improvement in corporate value.

Corporate governance system

HORIBA has adopted a type of organization defined in the Companies Act as a "Corporation with Audit and Supervisory Board." Since its founding in 1953, HORIBA, Ltd. has appointed non-executive directors and audit and supervisory board members (outside & independent auditors) based on this organizational design. The aim of this is to avoid management with an inward-looking bias.

In 2021, the Board met 12 times, had energetic discussions, and made prompt decisions. HORIBA also introduced a corporate officer system in 1998 which enables smooth and agile execution of operations under the supervision and guidance of directors.

The Audit and Supervisory Board audits and monitors the work of the Board of Directors in an objective and appropriate manner. To this end, it cooperates with independent auditors, internal auditors (from the Group Internal Audit Office positioned directly under the Executive Vice Chairman & Group COO), and non-executive directors.



Director Skills Matrix

Director Name	Knowledge and insight that HORIBA considers particularly important			Three fields of expertise for Market Oriented Business as laid out in our Mid-Long Term Management Plan MLMAP2023		
	Business administration	Technology	Governance	Energy & Environment	Materials & Semiconductor	Bio & Healthcare
Atsushi Horiba						
Juichi Saito						
Masayuki Adachi						
Masao Okawa						
Takashi Nagano						
Jai Hakhu						
Sawako Takeuchi						
Haruyuki Toyama						
Fumihiko Matsuda						

• This skills matrix summarizes the knowledge, insight, and expertise required of the directors responsible for managing the company. The shaded areas indicate the strengths of each director.
 • Governance ensures transparency in management, and targets skills in finance, accounting, and law, which are vital for appropriate disclosure of information to stakeholders.
 • All directors have the necessary international management experience required for HORIBA's global operations.
 • We review each item as is appropriate based on the external environment and company situation.

Corporate governance structure diagram



*1 Number of corporate officers
 *2 IMS: Integrated Management System

Main agenda items in Board of Directors meetings

With appropriate involvement and advice from non-executive directors, the Board of Directors freely discusses and exchanges opinions on matters for resolution, reporting, and matters contributing to the long-term improvement of corporate value.

The progress of matters resolved by the Board of Directors is reported on a regular basis, and mechanisms are in place by which directors can monitor the status of their implementation.

Major matters resolved at and reported to Board of Directors meetings in 2021

- Investment projects
- Corporate alliances
- Financing
- Cross-shareholdings
- Decisions on executive personnel matters and remuneration
- Resolution on dividends
- Formulation of Code of Ethics
- Implementation of the Masao Horiba Awards
- Adapt to stricter export control regulations
- Product quality improvement
- Payment of invention rewards
- Status of group company management

Matters regularly reported throughout the year

- Progress on matters for resolution by the Board of Directors
- R&D schedules and achievements
- Status of sales/production/quality
- Organizational restructuring/major personnel changes
- Business performance

Board of Directors

Evaluating the effectiveness of the Board of Directors

From December 2021 to January 2022, we distributed a questionnaire to all eight directors and to all three audit and supervisory board members concerning the effectiveness of the Board of Directors. We received responses from all eleven people. The questionnaire contained questions regarding the three roles and responsibilities of the Board according to Basic Rule 4 of the Corporate Governance Code. It asked, "Is the board adequately involved in directing major courses of action," "Is the board establishing an environment that supports suitable risk-taking by managerial staff," and "Is the board properly fulfilling its roles and responsibilities for supervision of directors and managerial staff." Most responses evaluated these matters as "Adequate" or higher. In addition, these members evaluated matters discussed by the Board and the composition of the Board (number of members, diversity in terms of gender and nationality, knowledge, experience, ability, etc.) as acceptable at present.

These results were analyzed, evaluated, and reported to the Board of Directors for discussion.

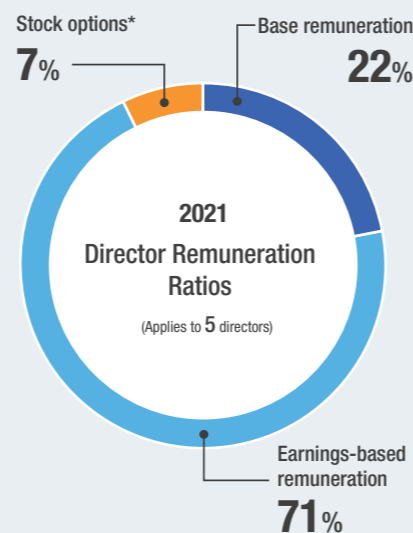
Director Remuneration

At HORIBA, director remuneration is aimed at helping to sustainably increase corporate value over the long term. The remuneration system is linked to shareholder profits, and is designed to provide a level of remuneration that will attract top managerial talent.

Remuneration for directors consists of base remuneration (regular fixed salary), earnings-based remuneration linked to the earnings results of each fiscal year, and transfer-restricted stock-based/post-delivery stock-based compensation linked to medium-to long-term earnings performance. We set the percentage of each remuneration based on the maximum limits of remuneration determined by vote at the general meeting of shareholders. In addition, the Board of Directors determines the amount of remuneration for each director in accordance with their position and the scope of their role. Remuneration for non-executive directors, however, consists strictly of base remuneration (fixed-amount salary), that, given the nature of their assignment, is not linked to earnings performance. Moreover, the 2022 ordinary general meeting of shareholders decided to introduce a new stock-based remuneration system, in lieu of the stock option system, to allocate transfer-restricted stock and post-delivery stock.

The process for determining director remuneration involves the General Meeting of Shareholders approving a total compensation amount for directors, then the Board of Directors deciding on how this is distributed. We also established the Nomination Remuneration Committee to handle director remuneration from this fiscal year forward. It consists primarily of independent management members (three non-executive directors, and two internal directors). This allows us to obtain advice from an independent standpoint to improve objectivity and transparency in the decision-making procedures of the Board of Directors.

Breakdown of director remuneration (excluding non-executive directors)



* Starting from 2022 we are introducing a new stock-based remuneration system which distributes transfer-restricted stock and post-delivery stock in lieu of stock options.

For more information on director remuneration, please see our Securities Report (Japanese only).

Web Link



Relationship with owners (shareholders) and investors

Open general meeting of shareholders

Since our initial stock listing in the second section of the Osaka Securities Exchange in 1971, HORIBA has held the annual general meeting of shareholders on a Saturday so that a greater number of owners are able to attend. Afterwards, we host an informal gathering of shareholders with management. In 2020 and 2021, we called upon shareholders to refrain from attending the general meeting of shareholders due to the spread of COVID-19, and also canceled the informal gathering. Instead, we streamed the meeting online to maintain transparency.

Shareholder Returns Policy

HORIBA considers one of our most important tasks to be returning profits to our owners, while still keeping internal reserves sufficient to maintain a stable management foundation and provide for expansion of our business. Our basic policy is to make the total return of shareholders, including cash dividends and buybacks, 30% of consolidated net income. We pay dividends twice a year. In 2021, we paid an interim dividend of 50 yen per share and a year-end dividend of 100 yen per share, for a total dividend of 150 yen per share.

Internal reserves will be used as working capital for business expansion, investment in facilities and R&D, and basic funds to improve our balance sheet. This will be returned to owners through future business development.

Philosophy behind shares held for strategic purposes other than pure investment

HORIBA believes that collaboration with other companies is necessary for us to grow sustainably. Toward that end, we decide what shares to hold based on comprehensive consideration of matters including business strategy, the strengthening of relationships with business partners, and the maintenance of relationships with local communities. Every year, the Board of Directors confirms whether the amount of shares we hold for strategic purposes other than pure investment is appropriate. They also consider whether individual shares are appropriate to hold, by confirming whether they are fit for purpose, and whether the benefits and risks associated with them are commensurate with the cost of capital. When we recognize that shares are inappropriate for retention, we consider taking measures such as share curtailment.

General Meeting of Shareholders



Anti-takeover measures

HORIBA has not adopted any anti-takeover measures. Our "Basic policy on the persons to control decision making over the financial and business policies of HORIBA," explains our way of thinking concerning the event that we are faced with a hostile mass acquisition of shares. This basic policy was announced in our Corporate Governance Report.

Please see our website for more information about our Corporate Governance Report.

Web Link



Constructive dialogue

We make efforts to clearly explain our corporate policy, financial condition, and corporate culture to our owners and ask for their understanding and continued support as fans of HORIBA. We also strive to disclose information based on the perspective of fair disclosure, so that various stakeholders have access to the same quality of information. HORIBA abides by the Basic Policy for Constructive Dialogue with Shareholders as announced on our website.

Please see our website for information about our Basic Policy for Constructive Dialogue with Shareholders (Japanese only).

Web Link



Status of IR-related activities

For analysts and institutional investors

- Financial results briefing: held four times per year
- Visitations and individual interviews (within Japan): about 180 times
- Visitations and individual interviews (overseas): about 120 times

For individual investors

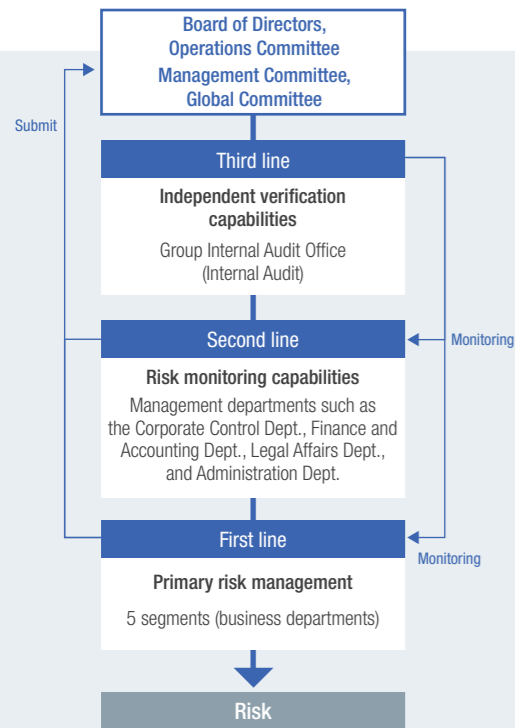
- Briefings, etc.: held about two times per year



IR Meeting

Risk Management

Risk Management System — Three Lines Model



Risk Management System

We have created a risk management system known as the Three Lines Model. The first line, HORIBA's five segments (business departments), provides active risk management. The second line, management division, such as the Corporate Control Dept., Finance and Accounting Dept., Legal Affairs Dept., and Administration Dept., provides risk monitoring capabilities. And the third line, the Internal Audit and Group Internal Audit offices, provides independent verification capabilities. Our field departments and management departments are always aware of the individual business risks both inside and outside Japan. When appropriate, they report important matters at the Global Strategy Meeting/Global Budget Meeting which bring together the Board of Directors, Operations Committee, Management Committee, and the management of our locations outside of Japan. This ensures that senior management can make decisions and share information in a timely manner. In addition, the Internal Audit department periodically monitors the effectiveness of the risk management system, and the way the field division and management division are handling risks, from an independent standpoint. When necessary, it reports its findings to the Board of Directors.

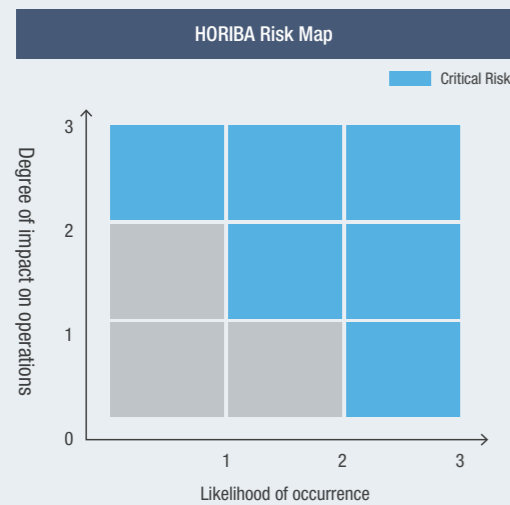
We also formulated the Basic Rules for Group Risk Management to strengthen our risk management system. These rules classify risks into the following categories: risks for each segment, risks related to business, risks related to development and manufacturing, and risks related to finance. They also establish the management system for these risks, and the system of responsibility in the event of a crisis. We have also established the HORIBA Group Risk Management Committee, which includes our major group companies in Japan.

Business and Other Risks

To identify critical risks, the field and management departments selected individual risks for HORIBA, based on the risk items specified in the HORIBA Group risk management regulations. They scored each risk on a three-point scale according to its likelihood of occurrence and the impact on operations. Then, they created a risk map by organizing the risk items they had scored. This was then debated and approved by the HORIBA Risk Control Committee.

The shaded areas of the risk map shown below (left) indicate the risk items that HORIBA has identified as critical risks.

These critical risks are broadly divided into "risks for each segment" and "risks for the entire company." The risks facing the entire company are listed in the table below. We have also disclosed these risks in our Securities Report.



- HORIBA Critical Risks (Risks facing the entire company)**
- Risks associated with international activities
 - Risks posed by changes in performance and financial position due to acquisitions and alliances
 - Risk of damage to equipment due to natural disasters, and subsequent delays in delivery
 - Risks related to contracts and compliance
 - Risks related to information security
 - Risks related to intellectual property rights
 - Risk of fluctuation in prices of materials
 - Risk of impairment loss for fixed assets
 - Risks related to pandemics
 - Risks related to climate change
 - Risks related to business and human rights

Please see our website for more information about our Securities Report (Japanese only).

[Web Link](#)



List of Management Members

(as of April 1, 2022)

Board of Directors



Atsushi Horiba

Chairman & Group CEO

In 1971, Atsushi Horiba joined OLSON-HORIBA Incorporated, a U.S. joint venture of HORIBA, Ltd. In 1977, he returned to HORIBA, Ltd. after received master's degree in Electronic Engineering from the University of California, Irvine Graduate School. He was appointed President in 1992, and has concurrently served as Chairman, President and CEO since 2005. In 2018, he was appointed Chairman and Group CEO.

He has been invited to serve as a member of official government committees, including the Ministry of Economy, Trade and Industry's Industrial Structure Council and Manufacturing Industry Committee, and the Cabinet Office's Advisory Panel on the Modalities of Government and Administration. He also devotes himself to stimulating industry and the local economy by serving as Chairman of the Japan Electric Measuring Instruments Manufacturers' Association, President of the Japan Analytical Instruments Manufacturers' Association, Vice Chairman of the Kansai Economic Federation, and Vice Chairman of the Kyoto Chamber of Commerce and Industry.

He was awarded the L'Ordre National du Mérite (Officier) in 1998 and the L'Ordre National de la Légion d'Honneur (Chevalier) in 2010 by the French government, in recognition of his contributions to the development of science, technology, and industry in France. He was also awarded a Doctor Honoris Causa degree by the University of Montpellier, France in 2015 and received the Order of the Rising Sun, Gold Rays with Neck Ribbon in 2019 from the Japanese government.



Juichi Saito

Executive Vice Chairman & Group COO

Juichi Saito joined HORIBA, Ltd. in 1982. After a few years as an electrical engineer gaining experience designing automotive emission testing systems, he was transferred to the U.S. where he was in-charge of sales and service for the Semiconductor and Automotive sectors. He was then assigned to new product planning for the Scientific and Process & Environmental sectors at our U.S. headquarters in Irvine. Upon his return to Japan in 1992, he served as General Manager of Automotive R&D. In 1998, he moved back to the U.S. and went on to become President of HORIBA Instruments Incorporated in 2002. In 2004, he moved to HORIBA STEC Co., Ltd., where he took charge of strengthening the Group's Semiconductor segment. In 2010, he returned to HORIBA, Ltd., where he was appointed Executive Vice President in 2013, and Executive Vice Chairman and Group COO in 2018. Since 2021, he has also been Chairman of Supervisory Board of HORIBA Europe Holding SASU in France.

In addition, he serves as Vice Chairman of both the Japan Electric Measuring Instruments Manufactures Association and the Japan Scientific Instruments Association, and as President of the Kyoto Scientific Instruments Association.



Masayuki Adachi, Ph.D.
(Doctor of Engineering)

President & COO

Masayuki Adachi joined HORIBA, Ltd. in 1985. He worked to develop new products for the Engine Measurement Systems Division, before serving as its R&D Manager, General Manager, and Corporate Officer. He then moved to the U.S. in 2007 as President of HORIBA International Corporation (now HORIBA Instruments Incorporated). There he addressed the difficulties arising from the Global Financial Crisis in the U.S. After returning to Japan in 2011, he was appointed General Manager of the R&D Division, which directs the R&D departments of each segment. He joined the board in 2014, and served as President and Chairman of Supervisory Board of HORIBA Jobin Yvon SAS (now HORIBA FRANCE SAS). He became Senior Managing Director in 2016, and has served as President and COO since 2018.

As Vice President of the Japan Analytic Instruments Manufacturers' Association, Chairman of the Japan Environmental Technology Association, and Fellow of the Society of Automotive Engineers International, he has contributed to the advancement of the science and technology related to analysis and measurement, and to the promotion of science and technology in general, as well as industrial and economic development.

List of Management Members

(as of April 1, 2022)

Board of Directors



Masao Okawa

Managing Director

Masao Okawa joined HORIBA, Ltd. in 2017. Before joining HORIBA, Ltd., he worked for almost 30 years at the Bank of Japan and served as General Manager of its Kyoto Branch, Chief Representative of its Frankfurt Office, and on loan to Harvard Law School (LL.M.) and the Bank for International Settlements (Basel, Switzerland). As General Manager of our Finance and Legal Division, he has used his knowledge and global experience in finance and governance gained at the Bank of Japan to build a global financial strategy. This included improving financing efficiency through financial holding companies outside of Japan, and working to strengthen compliance and corporate governance.

He also actively contributes to the vitalization of economy and industry by serving as a director of the Kyoto Association of Corporate Executives and as a director of the Tokyo Scientific Instruments Association.



Takashi Nagano

Director

Takashi Nagano joined HORIBA, Ltd. in 1985. He initially engaged in software development for the Engine Measurement Systems Division, before serving as Manager and General Manager of the Engine Measurement Planning & Development Department. He then moved to Germany in 2003 as President of HORIBA Europe GmbH. He was appointed to Corporate Officer in 2005 and Senior Corporate Officer in 2006. After returning to Japan in 2011, he became General Manager of the Sales Division, which oversees the sales departments of all segments. He became a Director in 2016 after serving as CEO of HORIBA Europe GmbH and President of HORIBA KOREA Ltd. Since 2018, he has been a member of the GLOBAL AUTOMOTIVE BOARD, which oversees our automotive business. In this way, he has contributed to the international automotive industry for many years.

Since June 2022, he has served as chief of the Kansai branch of the Society of Automotive Engineers of Japan, Inc., where he hopes to contribute to the advancement and development of science and technology related to automobiles.



Jai Hakhu, Ph.D.
(Doctor of Engineering)

Director

Jai Hakhu built up experience as Vice President at both Rockwell International Corporation and Varian Semiconductor Equipment Associates Inc. before working as Corporate Vice President and General Manager at Intel Corporation. In 2010, he joined HORIBA, Ltd. as an Executive Corporate Officer. He has held a number of important positions in our group companies outside of Japan, including Chairman and CEO of HORIBA Instruments Incorporated, President of HORIBA ABX SAS, and Chairman of HORIBA India. He has also worked as President and CEO of R.C. International LLC, a Chancellors Roundtable Member at the University of California, Irvine, and on the Board of Directors at both Montpellier University of Excellence (MUSE) and the University of Montpellier (UM). In addition to broad expertise based on management experience at global corporations, he has led HORIBA's Medical-Diagnostics segment in America, France, and India, and contributed to various aspects of HORIBA's global operations.

Board of Directors (Non-executive)



Sawako Takeuchi, Ph.D.
(Doctor of Engineering, Doctor of Economics)

Director (Non-executive), Independent Director

After completing her doctoral studies at the University of Paris, Sawako Takeuchi served for six years as Deputy Director of the Master of International Business Graduate Program at Ecole Nationale des Ponts et Chaussées, one of the oldest and most prestigious Grandes Ecoles in France. After returning to Japan, she worked as Chief Economist at the Long-Term Credit Bank of Japan, Research Institute. In 1998, she moved to the School of Engineering at the University of Tokyo as an Associate Professor, where she earned two doctorates in engineering and in economics, and made research achievements in the fields of industrial engineering and urban development. Later, she was appointed a Visiting Professor at Kyoto University. In 2011, the Ministry of Foreign Affairs of Japan requested that she become the President of the Japan Cultural Institute in Paris, where she played a role in cultural diplomacy.

Since 2016, she has been a Non-executive Director of HORIBA, Ltd. She has also served as a Visiting Professor at the Yamagata University Faculty of Engineering, and appointed as an Outside Director of SAXA Holdings, Inc. She draws on a deep knowledge of music to teach liberal arts as a Visiting Professor at the Tokyo College of Music. She has been awarded the Ordre National du Mérite (Chevalier) and Ordre des Arts et des Lettres (Chevalier) by the government of France. She also holds a professional license in Urasenke Sado (Japanese way of tea).



Haruyuki Toyama

Director (Non-executive), Independent Director

Haruyuki Toyama joined the Bank of Japan in April 1982. He graduated from the University of California School of Law (LL.M.) in 1988 and became a Visiting Scholar at Harvard Law School in 1989. He served as the Alternate Executive Director for Japan of the International Monetary Fund (IMF) from 2000, and subsequently held several other positions at the Bank of Japan, including General Manager of the Okayama Branch, Associate Director-General of the Payment and Settlement Systems Department, Director-General of the Financial Markets Department, General Manager for the Americas, and Director-General of the International Department. During his tenure at the Bank, he was involved in a number of international activities, including secondments to the U.S. Federal Reserve Board (FRB) and the European Commission (EC), and serving as a member of the Bank for International Settlements (BIS) Committee on Payments and Market Infrastructure and Markets Committee. He also served as a lecturer on Financial Laws at the Graduate School of Hokkaido University.

After leaving the Bank in 2014, he registered as a lawyer in 2015. In the same year, he became an Outside Director of Hitachi Construction Machinery Co. Ltd. He joined the Iwata Godo law office in 2019 and brings a wealth of knowledge and experience in the field of international finance. He has been a Non-executive Director of HORIBA, Ltd. since 2021.



Fumihiko Matsuda, Ph.D.
(Doctor of Medicine)

Director (Non-executive), Independent Director

Professor Fumihiko Matsuda obtained his Ph.D. in medicine from Kyoto University Graduate School of Medicine in 1990. After working as an assistant professor at the Center for Molecular Biology and Genetics and the Faculty of Medicine at Kyoto University, he joined the Centre National de Génotypage (CNG) in Evry, France, as the head of gene identification. He then received a joint appointment as a professor at the Kyoto University Graduate School of Medicine in 2003, and divided his activities between Kyoto and Paris for five years as he pursued his research in genomic medicine through the end of 2007. In 2008, he became the director of the Center for Genomic Medicine at the Kyoto University Graduate School of Medicine, and since 2020, has served as principal assistant to the president of Kyoto University.

Professor Matsuda has created two spin-off bio-venture companies, GenoConcierge Kyoto, Inc. in 2018 and RADDAR-J for Society Inc. in 2020. He serves as a Director (Chief Advisor) of both companies, contributing to active collaboration between academia and industry.

He has been a Non-executive Director of HORIBA, Ltd. since 2021. He also devotes himself to cultural exchange between Japan and France through involvement in artistic and cultural activities. In recognition of his achievements, contributions, and efforts to date, he received the Chevalier de l'Ordre National du Mérite of the French Republic in 2021.

List of Management Members

(as of April 1, 2022)

Audit & Supervisory Board Members



Atsushi Nakamine

**Audit & Supervisory Board Member
(Standing Auditor)**

Atsushi Nakamine joined HORIBA, Ltd. in 1978. He worked in departments related to accounting and corporate finance, and built up his career at HORIBA Europe GmbH in Germany. Since 1995, he carried out various projects to promote new business development, such as business alliance, acquisition, corporate foundation. In 2001, he became Executive Vice President & COO of ABX S.A. (now HORIBA ABX SAS (France)). He was appointed a Corporate Officer of HORIBA, Ltd. in 2002, and in June 2005, became President & CEO of ABX S.A. Then, in 2008, he also became President of the newly established HORIBA Europe Holding SASU. After returning to Japan, he served as General Manager of Group Production Management and Division Manager of the IT & BPR Center of HORIBA, Ltd., and has been a Substitute Audit & Supervisory Board Member since 2018. He was appointed to serve as an Audit & Supervisory Board Member in 2020.



Keiji Yamada

**Audit & Supervisory Board Member
(Outside & Independent Auditor)**

Keiji Yamada joined the Ministry of Home Affairs (now the Ministry of Internal Affairs and Communications) in 1977. He retired after serving as Director of the Cabinet Legislation Bureau, Director of the Kyoto Prefecture General Affairs Department, and Vice Governor of Kyoto Prefecture. He served four terms as Governor of Kyoto Prefecture starting in 2002 and four terms as President of the National Governors' Association from 2011. He has been a Professor at the Department of Interdisciplinary Studies in Law and Policy, Faculty of Law, and Advisor to the President (now Special Advisor to the President) at Kyoto Sangyo University since 2018. He became a member of the Board of Directors in 2021.

In 2020, he was appointed an Audit & Supervisory Board Member of HORIBA, Ltd. He also serves as an outside director at Kawasaki Kisen Kaisha, Ltd., TOSE CO., LTD., and Nitto Pharmaceutical Holdings, Ltd.

He is the President of the Kyoto Culture Foundation, which engages in financing and enlightenment activities related to the protection of cultural properties. It aims to foster more abundant creation and development of Kyoto culture, which has long been at the core of Japanese culture.



Tomoko Tanabe, M.D.

**Audit & Supervisory Board Member
(Outside & Independent Auditor)**

Dr. Tanabe graduated from the Kyoto Prefectural University of Medicine (KPUM) in 1996. She then moved to the U.S. after completing a one-year internal medicine internship at the University Hospital. During her 12-year stay in the U.S., she engaged in clinical medicine and medical education at the Perelman School of Medicine of the University of Pennsylvania, and taught at the University of California San Diego School of Medicine. Upon her return to Japan in 2008, she joined the Shinyukai Medical Group where she was first put in charge of women's health at Oike Clinic. She became a member of the board at Shinyukai Holdings in 2010, and in 2018, became the president of the Kyoto Medical Club. She is also currently a Visiting Professor in the Departments of Physiology and Integrated Physiology at the Kyoto Prefectural University of Medicine (KPUM). Dr. Tanabe was appointed an Audit and Supervisory board member of HORIBA, Ltd. in 2020.

Dr. Tanabe believes strongly in a holistic approach to clinical medicine, primarily focusing on preventive medicine and continuity of care. She also has a keen interest in promoting the careers of female physicians and researchers. In 2010, she was one of the five founding members of the Center for the Promotion of Gender Equality at the Kyoto Prefectural School of Medicine.

Corporate Officers

Senior Corporate Officers

- Hideyuki Koishi** President of HORIBA STEC Co., Ltd. (Japan)
- George Gillespie, Ph.D.** Executive Chairman of HORIBA MIRA Limited. (U.K.)
(Doctor of Engineering) Automotive Board Leader
- Hiroo Chihara** President of HORIBA Techno Service Co., Ltd. (Japan)
- Dan Horiba** President of HORIBA Advanced Techno Co., Ltd. (Japan)

Corporate Officers

- Hiroshi Nakamura, Ph.D.** General Manager of Business Incubation Division
(Doctor of Engineering)
- Toshiya Higashino** President & COO of HORIBA Instruments Incorporated (U.S.)
- Yasuo Yamashita** General Manager of General Administration Division
- Tadao Nakamura** Director of HORIBA INSTRUMENTS (SHANGHAI) CO., LTD.
Chief Director of HORIBA (China) Trading Co., Ltd.
Chief Director & President of HORIBA Technology (Suzhou) Co., LTD.
- Hiroyuki Urabe** Director of Sales at HORIBA Europe GmbH (Germany)
- Arnaud Pradel** General Manager of HORIBA ABX SAS (France)
- Dale Poole** Executive Vice President of HORIBA Instruments Incorporated (U.S.)
- Akio Kinoshita, Ph.D.** Technology Officer for Automotive Board
(Doctor of Engineering) Deputy General Manager of Business Incubation Division
- Rajeev Gautam, Ph.D.** President of HORIBA India Private Limited (India)
(Doctor of Bio-Technology)
- Stuart Knight** President of HORIBA UK Ltd.
- Laurent Fullana** President of HORIBA FRANCE SAS

Junior Corporate Officers

- Yuko Kimura** Chief Director & President of HORIBA INSTRUMENTS (SHANGHAI) CO., LTD.
Director & President of HORIBA (China) Trading Co., Ltd.
- Hitoshi Motokawa** General Manager, Finance and Legal Division Responsible for Financial Control
- Narihiro Oku** Responsible for Medical Business Division and Medical Advanced R&D
- Hideyuki Nishibun** General Manager of Global Business Strategy Division at HORIBA Techno Service Co., Ltd. (Japan)
- Masashi Nishimura** Corporate Officer at HORIBA Advanced Techno Co., Ltd. (Japan)
- Tsukasa Satake** Responsible for Analytical Instruments Research & Development Division, Tokyo based
- Kentaro Nishikata, Ph.D.** General Manager of Analytical Instruments Research & Development Division
(Doctor of Engineering) Deputy General Manager of Business Incubation Division
- Maki Moriguchi** Deputy General Manager of General Administration Division,
and General Manager of Executive Secretariat
General Manager, Stained Glass Project Office

Investors' Guide



HORIBA's Five Measurement Businesses

Automotive Segment



Process & Environmental Segment



Medical-Diagnostic Segment



Semiconductor Segment



Scientific Segment




Major products and market share of each

(Note: Market share for each product is HORIBA's estimate.)

Emission measurement systems

Global market share: 80%
Sales composition ratio: 40%



Driveline test systems


Global market share: 15%
Sales composition ratio: 6%



- Automotive emission analyzers
- Onboard emission measurement systems
- Engine test systems
- Brake test systems
- Fuel cell test systems
- Battery test systems
- Vehicle development engineering
- Testing engineering
- Lease and management of R&D facilities


Stack gas analyzers

Market share in Japan: 50%
Sales composition ratio: 36%



H-1 series of industrial water quality analyzers


Market share in Japan (For all water quality analyzers): 30%
Share of segment sales (For all water quality analyzers): 35%



- Water quality analysis and examination systems
- Air pollution analyzers
- Environmental radiation meters
- Process measurement equipment

Hematology analyzers


Global market share: 7%
Sales composition ratio: 67%



- Hematology and CRP analyzers
- Hematology analyzers
- Immunology analyzers
- Clinical chemistry analyzers
- Blood glucose analyzers
- Coagulation/Hemostasis


Mass flow controllers

Global market share: 60%
Sales composition ratio: 86%



Chemical concentration monitors


Global market share: 80%
Sales composition ratio: 11%



- Reticle/mask particle detection systems
- Residual gas analyzers
- Vaporizers


Raman spectrometers

Global market share: 30%
Sales composition ratio: 21%



pH meters

Market share in Japan: 50%
Sales composition ratio: 9%



- Water quality analysis and examination systems
- Particle-size distribution analyzers
- X-ray fluorescence analyzers
- Elemental analyzers
- Fluorescence spectroscopy/fluorescence lifetime spectroscopy
- Optical components; spectrometers and detectors
- Gratings

Major customers

Automotive manufacturers
Automotive component manufacturers
Government agencies

Electric power companies
Government agencies
Manufacturers

Medical testing centers
Small-to medium-sized hospitals
Physicians in private practice

Semiconductor production equipment manufacturers
Semiconductor device makers

Manufacturers/Research institutions
Universities/Government agencies
Electric power companies

Product applications

Development of new gasoline, diesel, and Electrified powertrains
Certification and quality control of completed vehicles
Inspection of in-use vehicles

Measurement of drinking water, wastewater, and gaseous emissions
Monitoring of production process
Research and development

Diagnostic testing
Medical checkup

Controlling flow of gases and liquids, monitoring cleaning fluid concentrations in semiconductor manufacturing processes
Quality control inspections of semiconductors and LCDs

Research and development
Product quality testing
Criminal forensics

Major risks and opportunities

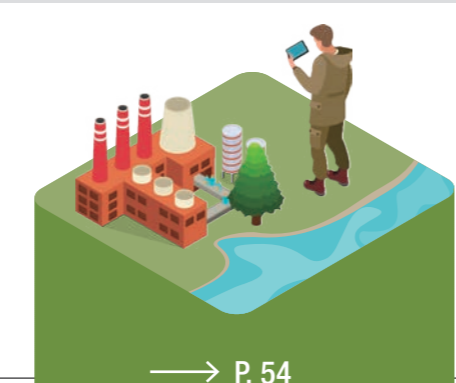
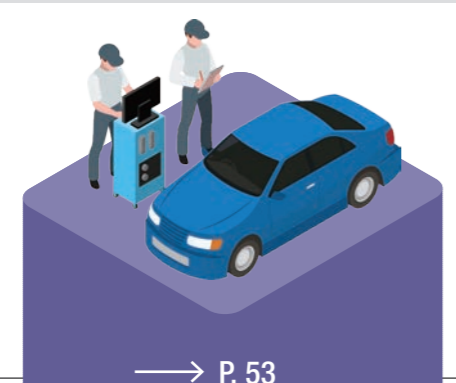
Changes in emission regulations
Capital spending and R&D investments by the automotive industry

Changes in environmental regulations by government agencies
Developments in energy efficiency improvement at factories and power generation plants

Changes in total healthcare expenditures caused by changes in population and other factors
Changes in medical insurance systems in different countries

Capital spending of semiconductor manufacturers and others in association with fluctuating demand for semiconductors
Production trends of manufacturers of semiconductor production equipment

Changes in R&D budgets at government agencies, universities, and research institutions
Changes in R&D spending and capital spending for production in the private sector



Automotive Segment

Mobility

Measurement

Providing powerful support for the optimization of vehicle testing and acceleration of automotive development

HORIBA's automotive Emission Measurement Systems (EMS) hold a global market share of 80%*. HORIBA provides manufacturer R&D and quality control units with complete testing and measurement solutions. These include test systems for engines, chassis, powertrains, brakes, catalytic converters, batteries, and fuel cells, as well as water electrolysis cell/stack assessment equipment. We are also actively developing our Engineering Consultancy & Testing (ECT) business, which supports development of next-generation mobility technologies for applications such as electrified vehicles, autonomous driving, functional safety, and cybersecurity.

*HORIBA's estimate



Global Environment

Process & Environmental Segment

Measurement

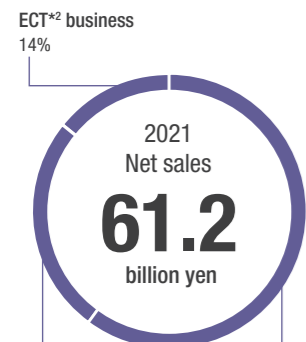
HORIBA helps monitor global environmental preservation, and production and quality management processes

We supply a broad range of analysis and measurement instruments for analyzing air pollution, water quality, and soil quality. HORIBA products play an important role in many industries. They enable the measurement of gases and the monitoring of industrial wastewater in energy and heavy chemical industries like electric power, steel, and petrochemicals. They also allow for purified water management for medical and semiconductor use, and the monitoring and control of water quality in the food, and cosmetics sectors. In essence, the analysis and measurement technology we provide helps to preserve the global environment, and leads technological innovation in support of public safety, security, and health. This is how we are helping to achieve a sustainable society.

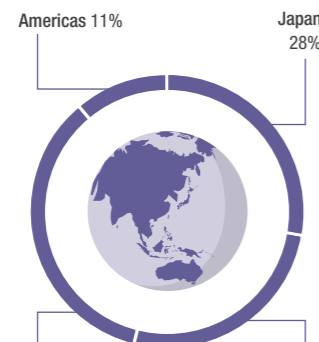


2021 results

Sales by business



Sales by region



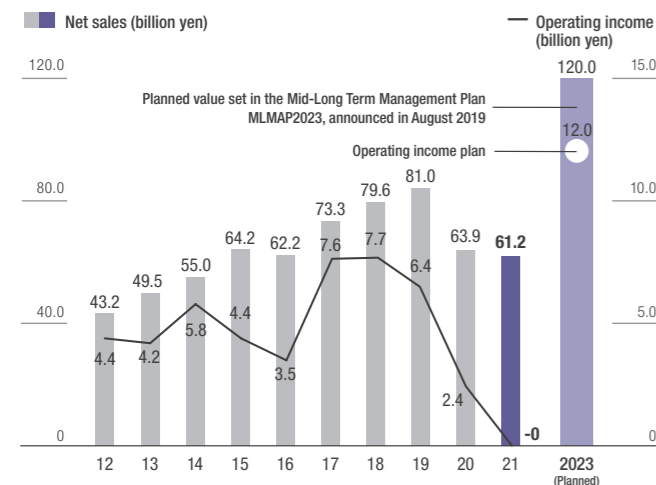
*1 Mechatronics (MCT): measurement instruments for vehicles *2 Engineering Consultancy & Testing

- Sluggish new capital expenditures for development of internal combustion engines
- Accelerating efforts to support powertrain diversification

New investment by automotive manufacturers and other businesses in the internal combustion engine sector was sluggish, and sales of our emission measurement systems decreased. This resulted in declining revenues and operating losses.

Meanwhile, in anticipation of the upcoming Euro 7 emissions regulation to be adopted by the EU, we introduced a new product to the market that uses our proprietary gas analysis technology, IRLAM™. In addition, our group has prepared evaluation and measurement solution technology geared towards batteries, fuel cells, and water electrolysis for hydrogen production. We are also developing products and applications to support development and testing requirements in the fields of electrified vehicles and energy. We have established ASSURED CAV, an integrated engineering and development facility that provides comprehensive support for connected and autonomous vehicles in all stages, from design through testing of actual vehicles. We continue to research and develop new products and services that meet the needs of next-generation mobility development.

Net Sales and operating income



Topic

Launching OBS-ONE-XL, On-board emission measurement system that uses our IRLAM* technology

The Real Driving Emissions (RDE) test, which measures emissions while driving, is gaining widespread recognition as a way to more effectively control automotive emissions. This product is used in on-road emissions tests, and utilizes the Infrared Laser Absorption Modulation (IRLAM™) technology, that we developed and successfully commercialized. It can measure the greenhouse gas nitrous oxide (N₂O), as well as ammonia (NH₃), which can be a source of PM2.5 particles. It also leverages the characteristics of IRLAM technology to provide high reliability amidst the high and low temperatures, changes in air pressure, and chassis vibrations present during on-road driving tests.

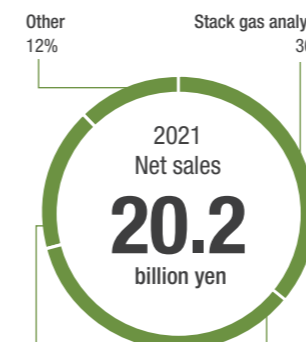


On-board emission measurement system OBS-ONE-XL

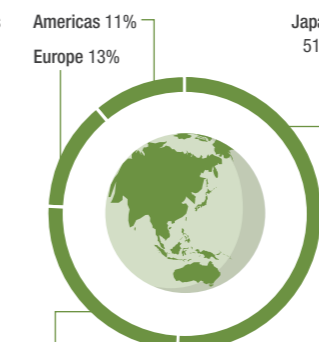
*IRLAM is a trademark or registered trademark of HORIBA, Ltd. in Japan and other countries

2021 results

Sales by business



Sales by region

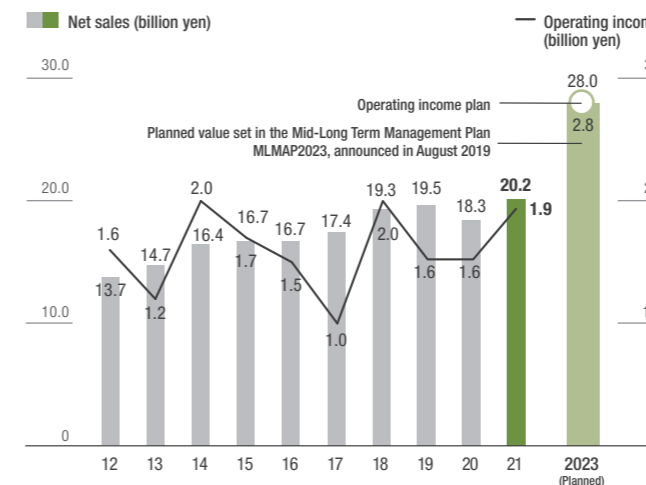


- Demand related to environmental regulation remained strong
- Accelerating expansion of global water quality measurement business

Vigorous demand related to environmental regulations led to increased sales of stack gas analyzers in Asia. Strong demand from manufacturing processes in industries such as electronics, and water quality measurement for handling environmental regulations, also led to increased sales and profits.

Meanwhile, we launched laser gas analyzers for the gas measurement sector which utilize our proprietary gas analysis technology IRLAM, and infrared thermometers that help increase manufacturing process efficiency in steel and semiconductor production. In the water quality measurement segment, we accelerated our water quality measurement business and began selling a TOC monitor which measures Total Organic Carbon to comply with environmental regulations.

Net Sales and operating income



Topic

Launching a new TOC monitor product

Total Organic Carbon is one of the leading indicators of water quality. Its analysis is becoming more important each year, not only in the environmental sector, but in the manufacturing processes of many industries. In September 2019, HORIBA purchased the water quality analysis startup company TOCADERO Analytics (now HORIBA Tocadero). We have launched new products based on their high-temperature catalyst-free combustion technology that can flexibly handle a wide range of TOC analysis. We are expanding our lineup of water quality meters to contribute to a wide array of fields, including petrochemicals, automotive, energy, paper production, and food.



On-line TOC Analyzer Model T1

Medical-Diagnostic Segment



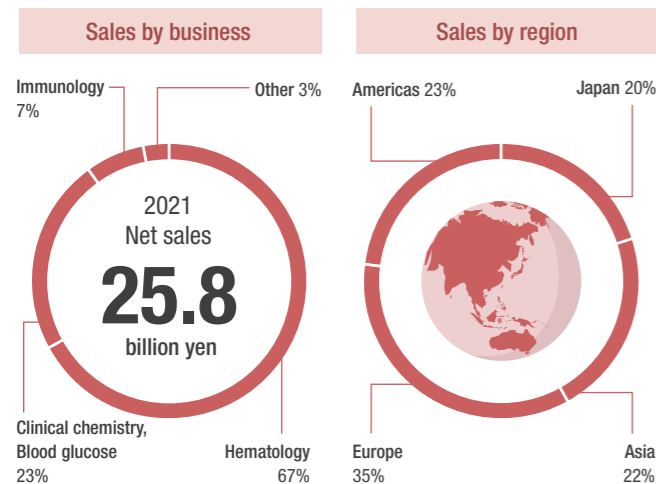
Contributing to healthy lives through in-vitro diagnostic systems

HORIBA provides instruments and reagents (consumables) for blood sample testing to the global market for in-vitro diagnostic (IVD) systems. Our business model for this segment is based on recurring revenues generated from sales of reagents. We aim to ensure stable earnings by expanding our installed base of medical diagnostic instruments. In particular, HORIBA's strength lies in small and medium-sized hematology analyzers for point of care testing (POCT)* in private clinics and hospital operating rooms, as well as small-to medium-sized hospitals and testing centers.

*Point of Care Testing (POCT): A general term for testing performed at locations close to patients, such as private practitioner offices, diagnostic clinics, hospital wings, and outpatient clinics.



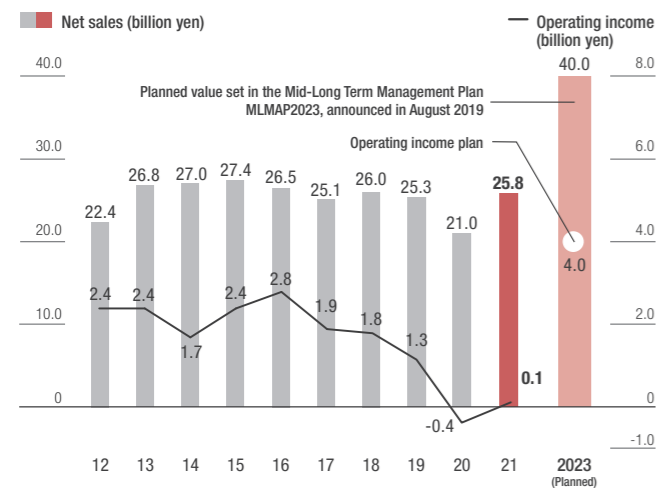
2021 results



- Increased sales of hematology analyzers, clinical chemistry analyzers, and reagents
- Promoted the development of new products with the aim of expanding our business in the global market for our core products

Increased sales of clinical chemistry analyzers and reagents in the Americas, alongside growing sales of hematology analyzers, led to increased revenue and profits. Meanwhile, we strove to expand our business for our core hematology analyzers and POCT test equipment products on the global market. And we are developing new products to expand our product lineup for private clinics, hospitals, and testing centers. We also began to supply some OEM equipment to Siemens Healthcare Diagnostics Inc. In addition, we have responded to the growing demand for performance and accuracy in testing equipment sparked by the spread of infectious diseases, by researching and developing new POCT test equipment that enables highly sensitive, rapid diagnosis.

Net Sales and operating income



Topic

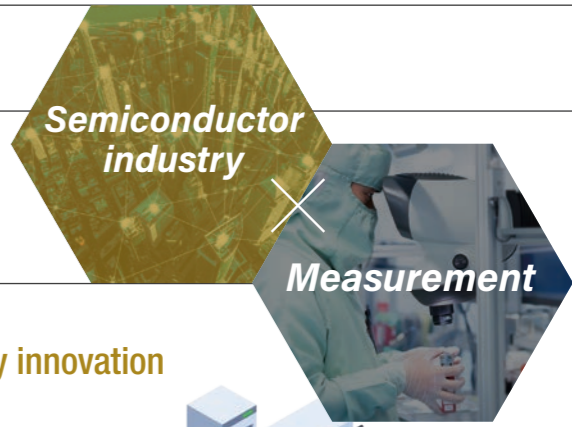
Began sales of small electrode type glucose analyzer for animals

In 2022, we began selling a blood glucose analyzer that we developed for the animal market, where demand has been growing in recent years. This product can easily obtain an accurate measurement of blood glucose from a single drop of whole blood. It also operates on the same measurement principle used to test human blood in clinical laboratories, allowing it to provide stable data. Veterinary care providers can show objective numerical results as they explain their diagnosis, helping to provide greater peace of mind to owners.

Antsense Duo VET small electrode type glucose analyzer for animals



Semiconductor Segment



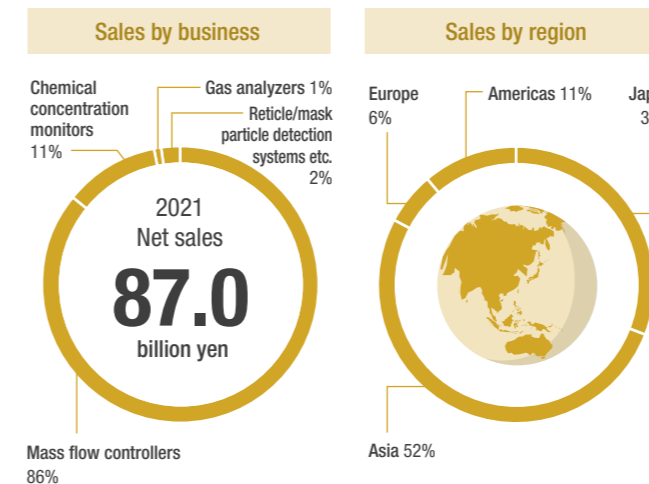
Contributing to yield enhancement and technology innovation in semiconductor manufacturing processes with HORIBA's flow control and measurement technologies

Mass flow controllers, used in the manufacturing process (front-end) of devices such as semiconductors, are a major product in the Semiconductor segment. Our mass flow controllers boast leading global market share*, thanks largely to our cutting-edge flow control technology which contributes to enhanced yield and miniaturization in the semiconductor manufacturing process. We intend to provide solutions for responding to technological advances in semiconductor manufacturing processes, while supplying measurement equipment such as chemical concentration monitors and reticle/mask particle detection systems. This will allow us to establish an important position in the growing semiconductor industry.

*HORIBA's estimate



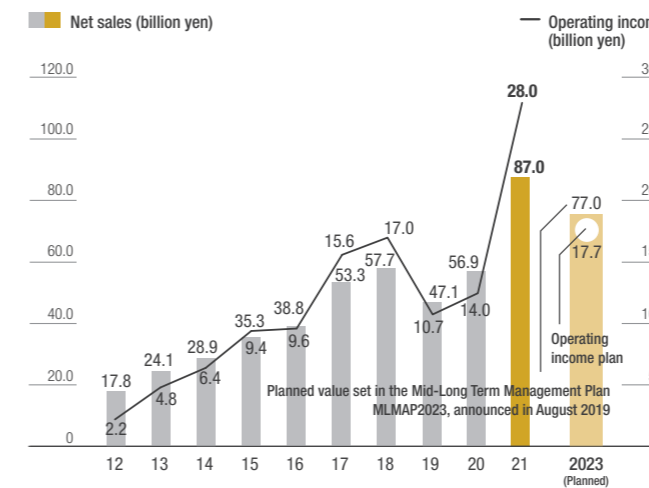
2021 results



- Increase in capital expenditures by semiconductor manufacturers due to growing demand for semiconductors

As demand for semiconductors has increased, semiconductor manufacturers have increased their capital expenditure. This has significantly increased our sales to semiconductor equipment manufacturers, leading to higher sales and profits. In the meantime, we have begun sales of pressure-type mass flow controllers, reticle/mask particle detection systems to meet the growing inspection needs of the exposure process, and dissolved oxygen meters which can manage dissolved oxygen in a variety of chemical solutions. In addition, we continued to invest in joint research with universities and research institutions as part of our efforts to expand the range of underlying technologies.

Net Sales and operating income



Topic

Next-generation inspection platform to meet a variety of needs Began sales of our PD Xpadion Reticle/mask particle detection system

Our PD Xpadion Reticle/mask particle detection system quickly measures the foreign matter stuck to reticles* and blanks used in the lithography process. We have built up a track record of close to 40 years since the debut of our first particle detection system (PD) in 1984. The PD Xpadion offers significant improvements in operability while maintaining high uptime and long-term stability. Plus, its enhanced automation capabilities support automating of customer production processes, and help to achieve the goal of a smart factory.

*Patterns, pellicles, glass surfaces



Began sales of our PD Xpadion Reticle/mask particle detection system

Scientific segment

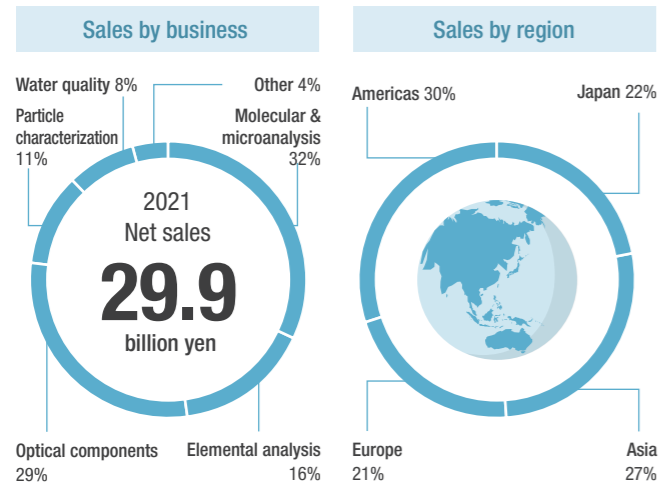


Supporting HORIBA's core technologies and pioneering cutting-edge fields

HORIBA's analysis technology began with research and development that led to Japan's first glass electrode pH meter, and has expanded to include gas analysis using infrared light, elemental analysis using X-rays, and Raman spectroscopy and Fluorescence spectroscopy using optical technology. These contribute to R&D activities at the frontline of scientific technology and help explore the unknown frontiers of science. HORIBA's analyzers are used for foreign object examination and active ingredient analysis for pharmaceuticals and foods, defect analysis for electronic components, as well as analysis in wide fields such as forensic science and archaeological surveys. Plus, the Scientific segment develops basic measurement methods and core technologies for analytical instruments, which play key roles in providing new technologies to HORIBA's four other business segments.



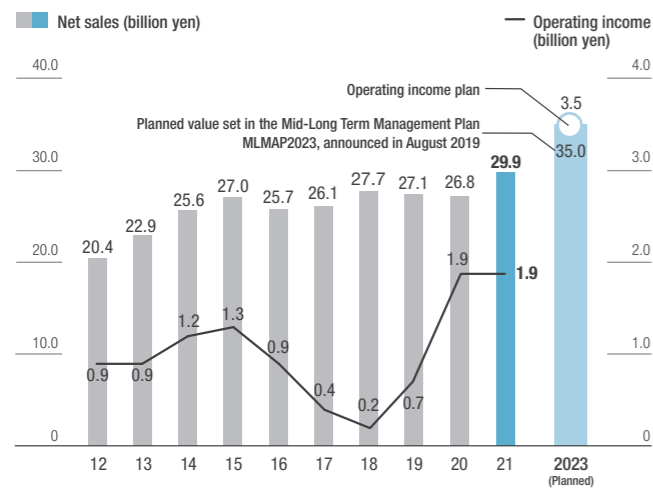
2021 results



- Expanded sales of high value-added products
- Gradual recovery of corporate R&D investment

Revenue increased thanks to increased sales of optical modules for the semiconductor market, and increased sales of analysis and measurement equipment due to the gradual recovery of corporate investment in R&D. However, the increase in R&D expenses led to a decrease in profits. Meanwhile, we jointly developed an analytical system that combines Shimadzu Corporation's high-performance liquid chromatographs with HORIBA's Raman spectrometers. And we began selling specialized software to connect the two instruments. We have also developed new products for X-ray micro-analysis and analysis of oxygen, nitrogen, and hydrogen in solids. These instruments contribute to efficient measurements during research and development of various advanced materials, quality control, and manufacturing processes.

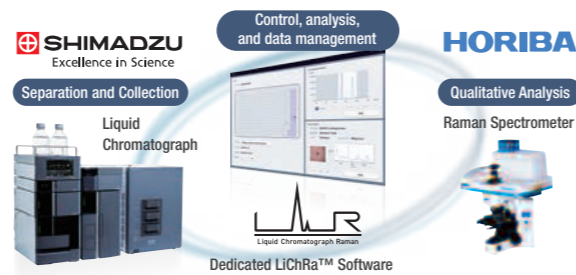
Net Sales and operating income



Topic

Released LC-Raman System jointly developed by HORIBA and Shimadzu Corporation

As a result of our collaboration with Shimadzu Corporation, which began in August 2020, we have launched an integrated system that is the first of its kind in the world*. Combining Shimadzu's LC separation technology with HORIBA's Raman visualization technology not only significantly increases measurement accuracy and efficiency, but is expected to offer new measurement value by detecting unknown components. This technology combines the strengths of both companies, and will contribute to the development of various fields such as, materials, environment, new energy, and life sciences which includes medical and health care.



*The LiChRa and LC-Raman system logos are trademarks of HORIBA, Ltd. and Shimadzu Corporation.

Corporate Data

Corporate information

Head Office	2 Miyahigashi, Kisshoin, Minami-ku, Kyoto 601-8510 Japan	Fiscal closing date	December 31, annually
Founded	October 17, 1945	Annual Meeting of Shareholders	Held in March
Incorporated	January 26, 1953	Transfer agent	Sumitomo Mitsui Trust Bank, Limited
Net sales	224,314 million yen (Consolidated) Fiscal 2021	Independent auditor	KPMG AZSA LLC
Paid-in capital	12,011 million yen (Consolidated) As of December 31, 2021	Stock listings	Tokyo Stock Exchange, Prime Market Securities Code: 6856
Number of employees	8,205 (Consolidated) As of December 31, 2021		

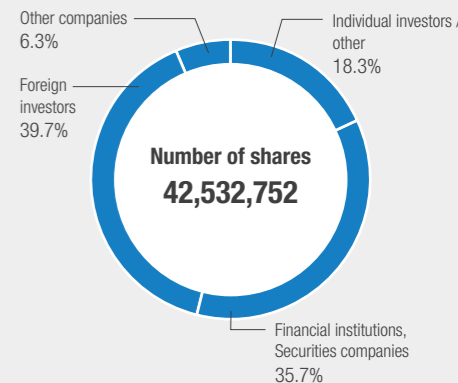
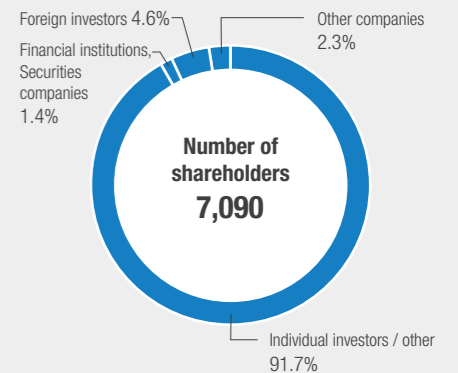
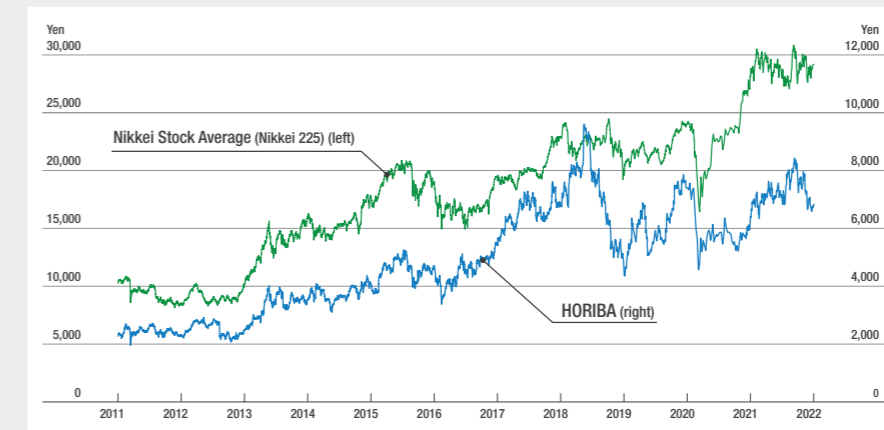
Major shareholders (Top 10)

As of December 31, 2021

Name of shareholder	Shares (Thousands)	Percentage* (%)
The Master Trust Bank of Japan, Ltd.	4,930	11.68
Custody Bank of Japan, Ltd.	2,409	5.71
National Mutual Insurance Federation of Agricultural Cooperatives	1,682	3.99
BBH (LUX) FOR FIDELITY FUNDS - SUSTAINABLE WATER AND WASTE POOL	1,282	3.04
Atsushi Horiba	1,073	2.54
THE BANK OF NEW YORK MELLON 140044	1,024	2.43
STATE STREET BANK AND TRUST COMPANY 510312	925	2.19
The Kyoto Chuo Shinkin Bank	830	1.97
The Bank of Kyoto, Ltd.	828	1.96
HORIBA Raku-Raku Kai	812	1.93

* Percentages of shares are calculated by deducting our own shares (335,502 shares).

Stock Price Trend (Closing price each day)



TSR* Index

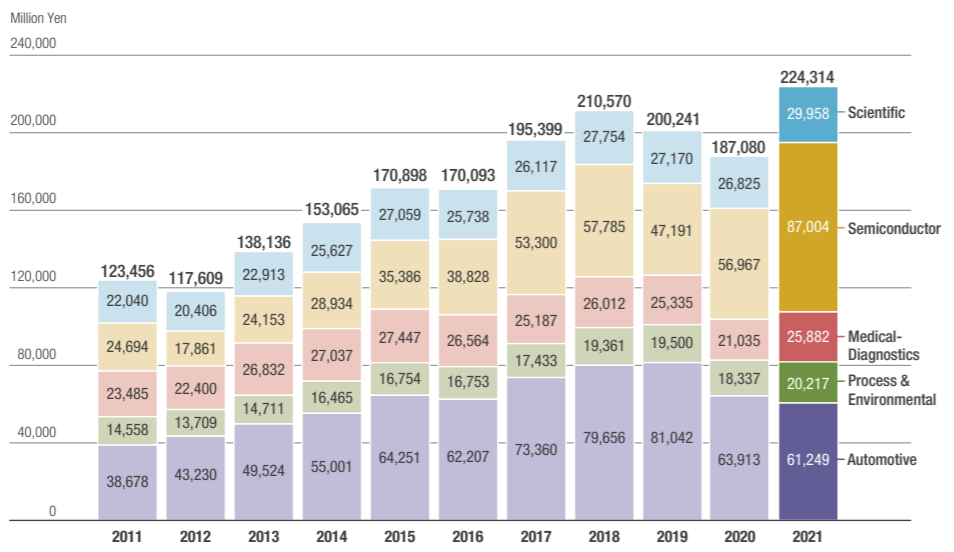
Investment period	2017	2018	2019	2020	2021
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
HORIBA	127.7%	87.8%	142.7%	120.7%	136.6%
TOPIX (including dividends)	119.7%	98.4%	113.4%	118.8%	131.2%

*Total Shareholders' Return: Total return on investment that combines capital gains and dividends

Financial Data Eleven-year summary

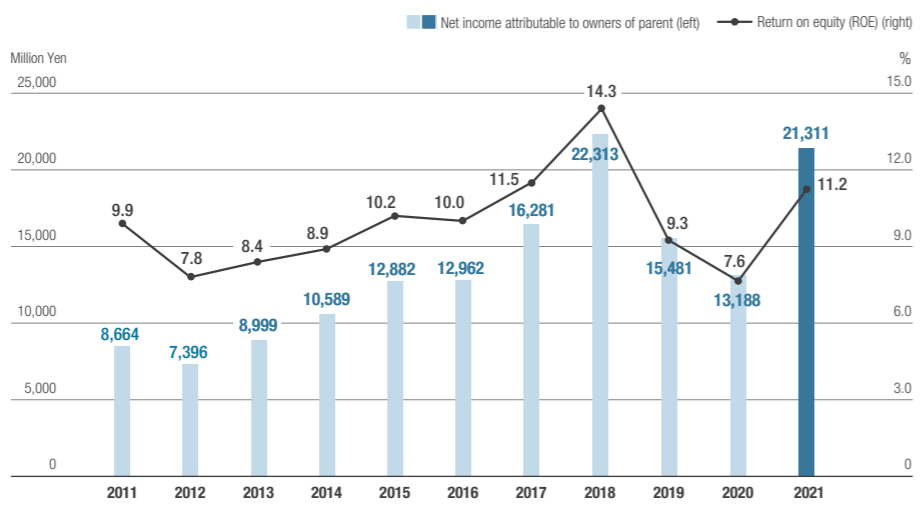
Net sales by segment

The fiscal year ended December 31, 2021 saw the first sales increase in three periods. This was primarily due to the continued high level of capital investment by semiconductor manufacturers.



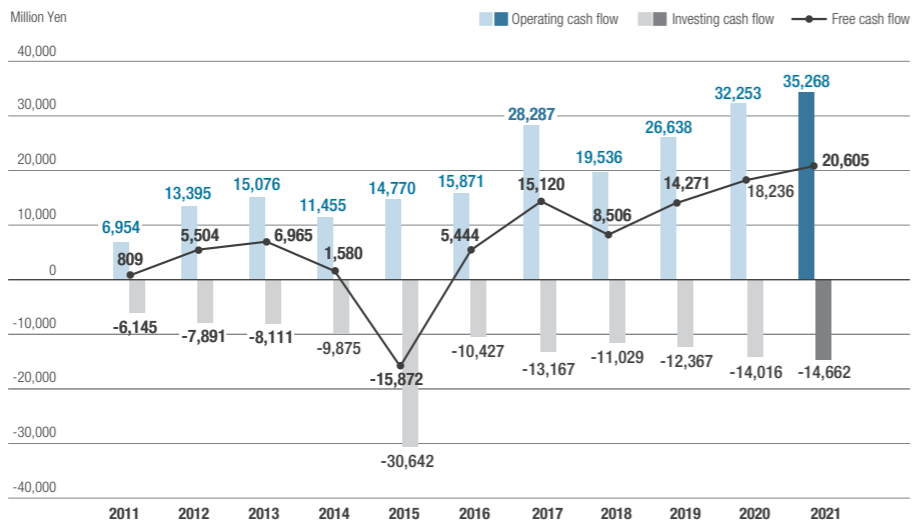
Net income and return on equity (ROE)

We saw net income attributable to owners of parent increase for the first time in three periods for the fiscal year ended December 31, 2021. This was due to factors such as the increase in operating income accompanying the increase in revenue. This resulted in an ROE of 11.2%.

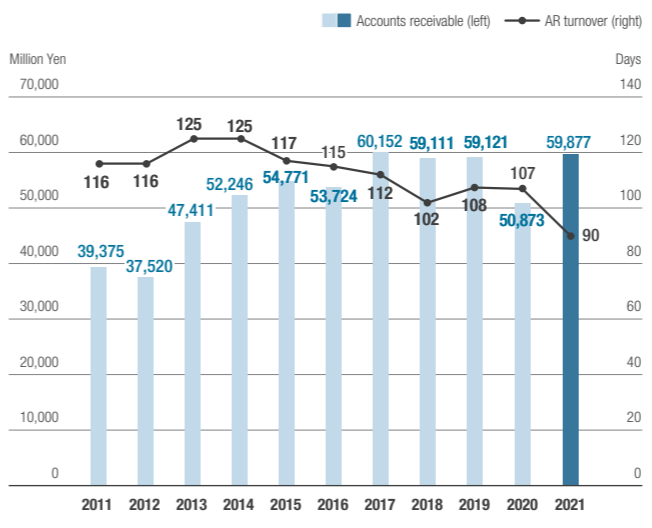


Cash flows

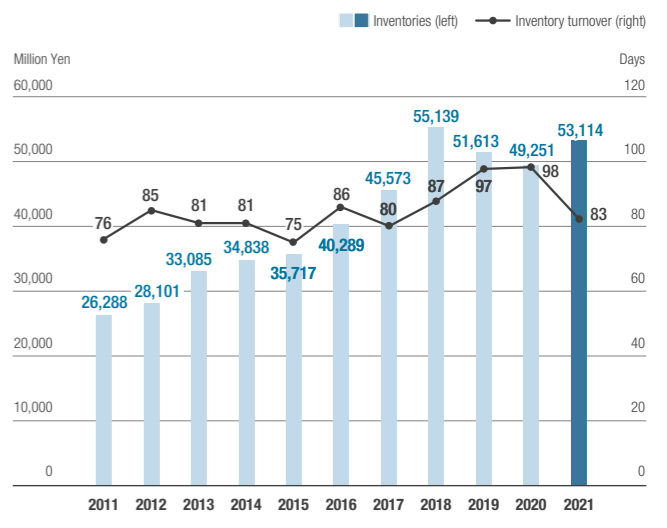
For the fiscal year ended December 31, 2021, we pushed ahead with investments in areas positioned as drivers of medium- to long-term growth, including the construction of a new location in China, and a new plant in Germany. During this period, there was a year-on-year increase in operating cash flow, mainly due to the increase in revenue, and free cash flow amounted to a positive 20.6 billion yen.



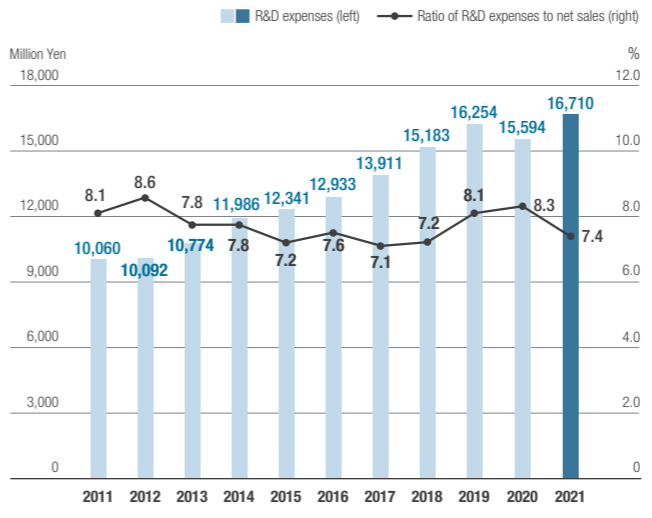
Accounts receivable (AR) and AR turnover (days)



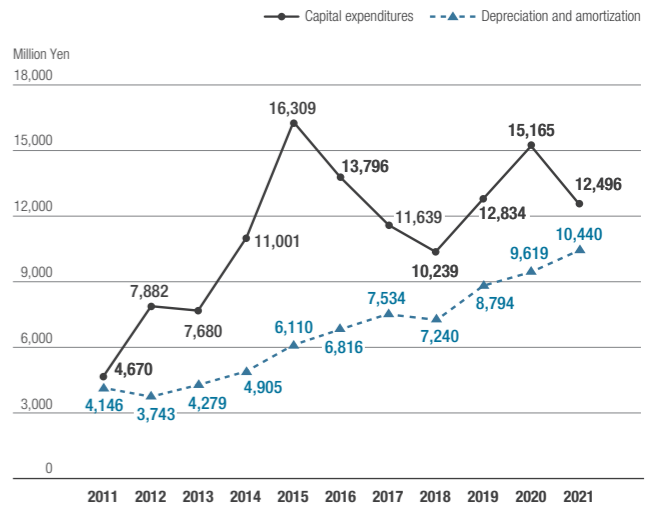
Inventories and inventory turnover (days)



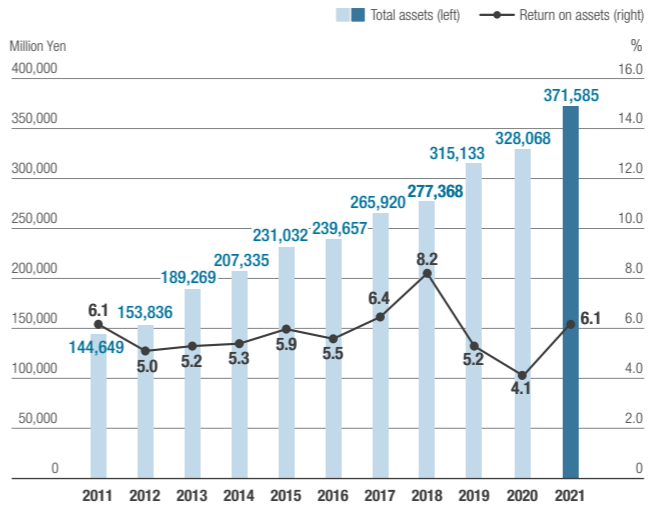
R&D expenses and R&D expenses to net sales



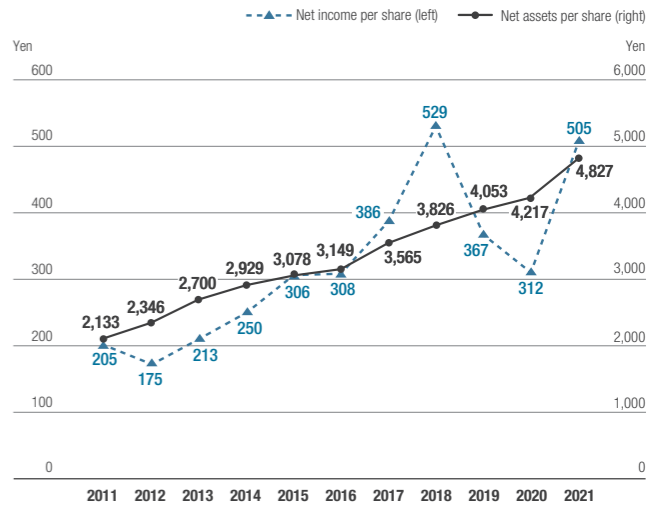
Capital expenditures and depreciation and amortization



Total assets and return on assets (ROA)



Net income per share and net assets per share



Financial Data

Eleven-year summary

		2011.12	2012.12	2013.12	2014.12	2015.12	2016.12	2017.12	2018.12	2019.12	2020.12	2021.12
Profit and Loss												
Net sales	(Million Yen)	123,456	117,609	138,136	153,065	170,898	170,093	195,399	210,570	200,241	187,080	224,314
Operating costs and expenses	(Million Yen)	108,549	105,857	124,402	135,851	151,526	151,593	168,565	181,731	179,325	167,385	192,267
Operating income	(Million Yen)	14,906	11,751	13,733	17,214	19,372	18,499	26,834	28,838	20,916	19,694	32,046
Ratio of operating income to net sales	(%)	12.1	10.0	9.9	11.2	11.3	10.9	13.7	13.7	10.4	10.5	14.3
Net income attributable to owners of parent	(Million Yen)	8,664	7,396	8,999	10,589	12,882	12,962	16,281	22,313	15,481	13,188	21,311
Ratio of net income attributable to owners of parent	(%)	7.0	6.3	6.5	6.9	7.5	7.6	8.3	10.6	7.7	7.0	9.5
Financial Position												
Total assets	(Million Yen)	144,649	153,836	189,269	207,335	231,032	239,657	265,920	277,368	315,133	328,068	371,585
Liabilities with interest	(Million Yen)	18,358	18,083	24,577	28,412	45,227	47,153	42,496	44,516	73,889	80,376	83,717
Shareholders' equity	(Million Yen)	90,232	99,248	114,209	123,924	129,581	132,654	150,282	161,362	170,953	177,964	203,688
Shareholders' equity ratio	(%)	62.4	64.5	60.3	59.8	56.1	55.4	56.5	58.2	54.3	54.3	54.8
Cash Flows												
Cash flows from operating activities	(Million Yen)	6,954	13,395	15,076	11,455	14,770	15,871	28,287	19,536	26,638	32,253	35,268
Cash flows from investing activities	(Million Yen)	-6,145	-7,891	-8,111	-9,875	-30,642	-10,427	-13,167	-11,029	-12,367	-14,016	-14,662
Free cash flow	(Million Yen)	809	5,504	6,965	1,580	-15,872	5,444	15,120	8,506	14,271	18,236	20,605
Cash flows from financing activities	(Million Yen)	855	-3,304	2,324	-273	12,843	-451	-9,044	-3,240	19,215	843	-4,045
Investments, etc.												
Capital expenditures	(Million Yen)	4,670	7,882	7,680	11,001	16,309	13,796	11,639	10,239	12,834	15,165	12,496
Depreciation and amortization	(Million Yen)	4,146	3,743	4,279	4,905	6,110	6,816	7,534	7,240	8,794	9,619	10,440
R&D expenses	(Million Yen)	10,060	10,092	10,774	11,986	12,341	12,933	13,911	15,183	16,254	15,594	16,710
R&D expenses to net sales	(%)	8.1	8.6	7.8	7.8	7.2	7.6	7.1	7.2	8.1	8.3	7.4
Per Share Information												
Net income	(Yen)	204.88	174.87	212.76	250.28	305.73	307.74	386.30	529.24	367.09	312.58	505.05
Net assets	(Yen)	2,133.44	2,346.45	2,699.88	2,928.82	3,078.40	3,148.70	3,565.00	3,826.44	4,053.30	4,217.45	4,827.06
Dividend	(Yen)	40.00	50.00	60.00	67.00	70.00	85.00	116.00	145.00	130.00	90.00	150.00
Other Indicators												
Return on equity (ROE)	(%)	9.9	7.8	8.4	8.9	10.2	10.0	11.5	14.3	9.3	7.6	11.2
Return on assets (ROA)	(%)	6.1	5.0	5.2	5.3	5.9	5.5	6.4	8.2	5.2	4.1	6.1
Consolidated dividend payout ratio	(%)	19.5	28.6	28.2	26.8	22.9	27.6	30.0	27.4	35.4	28.8	29.7
Nonconsolidated dividend payout ratio	(%)	30.5	37.5	48.9	38.5	35.1	46.7	53.8	50.7	46.4	52.3	333.1
Overseas sales ratio	(%)	60.3	61.1	64.9	69.0	69.3	66.8	66.7	68.7	69.0	69.2	70.4
Human Assets												
Number of employees	(Employees)	5,448	5,530	5,787	5,965	6,831	7,149	7,399	7,943	8,288	8,269	8,205
Ratio of employees outside of Japan	(%)	56.6	57.0	57.9	58.4	62.3	62.0	61.6	62.3	62.5	62.4	62.8

Notes: The monetary amounts shown are rounded down to the nearest million yen.

1. HORIBA, Ltd. and its domestic consolidated subsidiaries had formerly recognized revenue mainly on a shipping basis. However, starting from fiscal 2016, HORIBA, Ltd. and its domestic consolidated subsidiaries changed their revenue recognition method to recognize revenue on a completion-date-of-installation or delivery-date basis under the terms and conditions of the relevant contracts. The amounts in or before fiscal 2015 are not retrospectively revised.

2. As of beginning of the fiscal year 2019, HORIBA, Ltd. and its consolidated subsidiaries apply the Partial Amendments to Accounting Standards for Tax Effect Accounting (ASBJ Statement No. 28, February 16, 2018). The amounts in or before fiscal 2017 are not retrospectively revised.

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When you measure,
you see the world.