

## Enhancement of Total Solutions

### We will promote development and horizontal deployment of a new business model.

The water treatment market where the Kurita Group has been operating its business for many years is maturing. Technologies and products that once held unique status are now becoming commoditized and subject to severe cost competition. The Group is currently feeling a sense of crisis: if we are to continue delivering earnings, we must transition from a business model of selling individual products in water treatment chemicals and water treatment facilities to a business model that generates recurring earnings. I believe the Solution Business Division must lead our efforts to break free from established ideas based on past successes and reform our business model.

The primary function of this division is to create a business model based on marketing and propose this model to sales divisions in order to provide new solutions to customers. This is our first attempt of this kind as a Group at the organization level. Another function of the division is to grasp the deeper needs driving customer's issues, needs that customers do not notice, from a technical perspective and carry out operations from drafting contracts to horizontal development. A further function is to propose the use of IoT and AI, which will be vital for leveraging our comprehensive capabilities. Ideally, I would like to



#### Toshitaka Kodama

Executive General  
Manager of Solution  
Business Division



Transitioning to a business model that provides recurring earnings by providing solutions for customers on site

leave our manufacturing functions in place and develop total solutions and the service contract-type business model on top of these. Ultimately, we aim to be the driver of a shift from selling products to selling services.

One of the benefits for customers of using the Group's services has been the opportunity to receive technical proposals and support offered jointly by the sales and technology departments. To ensure that the Group's intended services stay attuned to customers' needs, links need to be maintained between various divisions, including sales and engineering. To this end, we have divided the Japanese markets into nine, and for each one, we will undertake joint initiatives with sales, marketing, engineering, and development working together. We will also promote coordination based on IT and AI, as well as initiatives coordinated with overseas Group companies.

The transition from individual products to a service contract-type business offers benefits for expanding our business activities and enabling recurring transactions, but will also require a more rigorous approach to risk management. Expanding the scope and time frame of contracts will certainly increase capital and cost burdens. In our contracts, we need to discern how much cost to bear from the perspective of returns, as well as how to hedge the risks. I believe it is the duty of the Solution Business Division to foster the conceptual, planning, and execution capabilities of the employees who are working on the Group's reforms, including their awareness of returns commensurate with risk.

# Integrating and Transforming Our Business in Japan

**We will aim to expand recurring earnings in Japan, our main market.**

Japan is the Kurita Group's main market, accounting for the majority of its sales. It has continued to be a primary source of earnings. In the Water Treatment Chemicals business, we provide solutions to issues related to water and the environment on approximately 20,000 customer sites covering many market segments. In the Water Treatment Facilities business, we provide services from delivery to maintenance of water and wastewater treatment facilities used on production sites for customers in the electronics industry, general industry, and energy industries, among others.

Since the global financial crisis in 2008, however, the water treatment market in Japan has been gradually shrinking as customers consolidate their production sites and relocate them offshore. In addition to increasing price competition, a decline in Japan's working population is making it difficult to maintain earnings using our traditional sales methods.

To continue growing our earnings in this situation, we are currently engaged in a major transformation of our business model in Japan. Our priority measures here are "enhancement of total solutions," "development of CSV business," and "strengthening cost management."

In enhancing total solutions, we are creating a new service contract-type business that combines water treatment chemicals, water treatment facilities, and maintenance services. In April 2019, we consolidated all domestic sales functions in the Japan Sales Business Division, then strengthened our systems for each market and region to create a foundation for deploying total solutions. Now we need to accelerate this deployment and deliver results. Moreover, in the CSV business, we will develop products and services to resolve water and environmental issues in line with our four growth opportunity themes\*. The key point here is to build a new business model in which we first get a solid grasp of the real issues that our customers are facing, propose optimal solutions that package together product, technology, and services, and then share consideration for the value received by the customer. I am sure that the important role for this division in achieving this is to coordinate with other divisions such as the Solutions Business Division and ensure that they accurately reflect the customers' perspective and needs.

In strengthening cost management, we will work alongside the Engineering Division to reform the manufacturing system of water treatment facilities, which tends to generate additional costs. In addition, we are making progress on streamlining operation management and maintenance



Organizational changes in line with priority measures

Transformation of the Sales System in Japan

with the use of AI, IoT, and sensing technologies. We also need to discern the profitability of businesses and projects rapidly and at an early stage. As the sales network in Japan is one of the Kurita Group's major strengths, we are also aligning this with the new structure by merging operations and relocating and consolidating sales offices.

For personnel, who are at the heart of our reforms, the integration of operations in the division has enabled us to assign people where their individual strengths can be of most benefit. Looking ahead, we will increase personnel exchanges with the Global Business Division and with Group companies as we strive to develop human resources equipped with a high degree of specialization and proposal capabilities.

 \* For further details on the Company's four growth opportunity themes, please see page 18 "CSR Initiatives."

**Yoshio Yamada**

Executive General  
Manager of Japan Sales  
Business Division



## A New Stage in Global Development

### We will expand earnings by upgrading newly acquired business bases.

The Group has been shifting its global strategy into a four-area structure comprising Japan, Asia, EMEA (Europe, Middle East, Africa), and North and South America. We have had a structure based on Japan, where we already have a strong base, and overseas, where there is growth potential due to our low market share. One of the priorities for the Global Business Division is to build a structure that enables business expansion in every region overseas. Since 2015, we have strengthened our business bases in Europe and South Korea through M&As. With the acquisition of U.S. Water Services, Inc. in March 2019, followed by the acquisition of Fremont Industries, LLC in January 2017, we are expecting to quadruple our sales in North America. These measures have established our four-area structure. Under this structure, we plan to achieve organic growth and improvement in profits in each area. Moreover, we will work toward the global expansion of RO chemical services provided by Avista Technologies, Inc. and Avista Technologies (UK) Ltd., which we acquired in May 2019. In this way, we will increase our overseas sales ratio to around 40% for the fiscal year ending March 31, 2020. However, we still intend to examine M&A opportunities for acquiring competitive products and technologies and strengthening our business in certain regions.

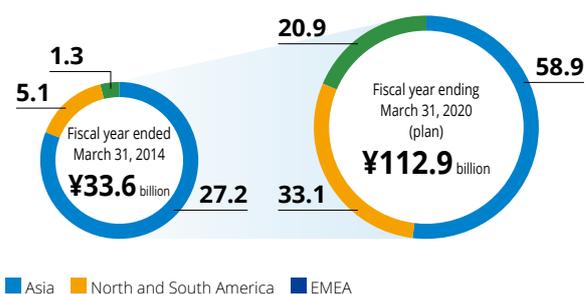
The Group has identified geopolitical risks and local economic trends as important risk factors in developing globally. In the near term, we face the impact of trade



**Yasuo Suzuki**

Executive General  
Manager of Global  
Business Division

### Expanding regionally balanced overseas sales through M&As



disputes between the United States and China and a sense of uncertainty over the future of the electronics industry. Moreover, business conditions in China and South Korea are becoming increasingly severe after the last few years of brisk activity. However, as the business outside of Japan in Asia, EMEA, and North and South America is about the same in scale, I believe that we have managed to diversify our business risk.

I see the fiscal year ending March 31, 2020 as a year for business development and the creation of synergies in the United States in particular. We will promote collaboration and integration (PMI\*) of Kurita America Inc., Fremont Industries, and U.S. Water Services, while also expanding sales of Avista Technologies products, thereby promoting the proposal of total solutions incorporating water treatment chemicals, water treatment facilities, and maintenance services. To aid this development, in addition to our initiatives in each region, we will utilize the Tokyo head office marketing function to communicate our new achievements from North America.

Another important mission for the division is to promote linkages within the Group between business, technology development, and human resource development from a global perspective. In managing overseas offices, we recognize the importance of fostering a sense of unity. To achieve this, the division has to actively involve itself in making arrangements between regions and sharing the important principles of the Group, while leaving the local operations to the highly skilled personnel in each company. Furthermore, we seek to contribute to the growth of the entire Kurita Group by enhancing our sense of purpose as a global business and cooperating with the sales division in Japan to make mutual use of our strengths and expertise.

\* PMI: Post-Merger Integration

# Rebuilding the Group's Manufacturing System

## We will achieve higher quality and better production efficiency as an evolving engineering group.

With a recent rapid expansion of our global business through M&As and promotion of total solutions, the Kurita Group's business is entering a period of dramatic change. Moreover, the social and economic risks surrounding the Group include a decline in the production and delivery labor force in Japan, a worldwide increase in personnel costs and prices, and geopolitical risks.

In this situation, the Engineering Division's role is to achieve improvements in quality, including safety, and efficiency, reinforcing the business base that supports the Group's transformation. One of our urgent priorities is to completely reform the manufacturing system for water treatment facilities. In the fiscal year ended March 31, 2019, due to active capital investment among customers in Japan our production of water treatment facilities became excessively busy, and many jobs required reworking with the additional costs weighing on our profits. With this, structural issues have emerged within the Group. To remedy this, we are improving our work processes and flows, standardizing our water treatment facilities to reduce design work each time, and promoting the use of ICT and alliances to make more efficient use of limited human resources.

To match the expansion of our global business, we will establish global supply chains and optimize our procurement and manufacturing sites, while promoting use of the production functions we have gained through acquisitions. Furthermore, we will reinforce our information network and promote compliance with revisions to laws and tightening of regulations related to safety and

the environment. In promoting total solutions, we also recognize that the division has an important role to play in investigating the feasibility of business models from the perspectives of quality, safety, and cost.

Furthermore, the most important management resource for supporting our business base in terms of production is technologies, manufacturing know-how, and human resources including partner companies. In addition to developing engineers who are cost aware and versed in the principles of manufacturing, as a method of human resource management, we are introducing HR tech\*. This involves adding reductionism and system thinking to the traditional approaches of evaluating experience and technical level. We believe this approach will help us to utilize human resources strategically.

Risks for the Engineering Division also present significant opportunities for transformation through increasing the efficiency of the production system and strengthening the cost management system. By breaking free of outmoded thinking, we will contribute to increasing the capital efficiency and reducing the costs of the entire Group, aiming to be an engineering group that is sustainably evolving ahead of our competitors.

\* The application of big data analysis, artificial intelligence (AI), cloud computing and other advanced IT-related technologies for a wide range of human resource operations, including hiring, development, and assignment.



From shorter construction lead times through standardization and ICT and on to the next stage

### Hirohiko Ejiri

Executive General  
Manager of  
Engineering Division



## Technology Development for the Creation of Customer Value

**We will accelerate development by changing our perspectives and reforming our awareness.**

Throughout its 70-year history, the Kurita Group's technological capabilities have always been a source of competitive advantage. The Research and Development Division is playing a major role in creating the key products and technologies that will underpin our efforts to promote "development of CSV business" and "enhancement of total solutions" under the MVP-22 plan. In step with the transformation of our business model, we need to pivot away from the traditional concept of development.

Over the past few years, as customers face management rationalization and a decrease in experienced engineers they are increasingly seeking to outsource water treatment and utility management to reliable experts. In addition, a general increase in awareness of CSR in wider society and the globalization of environmental issues present new business opportunities for the Company. On the other hand, water treatment itself is a maturing technology, and it is becoming difficult to differentiate through the cost and performance of individual products. Development that simply pursues excessive product specification and cost reductions could not only widen the gap with customers' needs, but also lead to a decline in earnings. Moreover, in a rapidly changing management environment, a loss of pace in development will lead directly to a loss of business opportunities.

Given our recognition of the current situation, in order to speedily create the necessary products and technologies



Links between development bases in Japan, Germany, and Singapore

for the CSV business and total solutions, we need to change our perspective from our previous focus on increasing the competitive edge of the products themselves, to development that emphasizes "optimizing customers' overall production process to create greater customer value." To achieve this, we will coordinate with the marketing department and the operating divisions to map out the customer value to be created and the business model we need as we proceed with development. In terms of transforming the development process, our priority measure is "strengthen fluid and process analysis." We will use engineering analysis to create numerical models from the abundant experience and expertise we have accumulated in water treatment to date, and combine these with rapidly advancing computer simulations of fluid phenomena. This will speed up development by making testing and performance verification more efficient, as well as enabling us to create technologies for optimizing water treatment management and production processes using the power of AI and IoT. In addition, we will strengthen ties with our overseas development bases in Germany and Singapore, and promote open innovation with research institutions in Japan and abroad to enable more efficient development in line with global needs.

The keys to achieving transformation are development of human resources who can create total solutions based on a broad knowledge of water treatment coupled with high level expertise and a change of awareness among developers. To break away from fixed ideas based on past experience, we will increase opportunities for developers to encounter the change in needs of society and our customers and to meet and exchange ideas with top engineers in and outside Japan. We will work actively to broaden their perspectives and reform their awareness.



**Tatsushi Kuramae**

Executive General  
Manager of Research and  
Development Division

# Driving the Creation of New Businesses

## We will explore potential new businesses and create core businesses.

To accelerate growth with high profitability for the Kurita Group, the Next Generation Business Division has been working to create new core businesses. We have identified ships, batteries, and water-saving as our main fields.

In the ships field, we are focusing mainly on commercialization of ballast water treatment systems to cope with tighter international regulations for preserving marine ecosystems. We are now working quickly to put sales and production systems in place with a view to acquisition of United States Coast Guard certification and rapid market entry in 2020. In the field of batteries, we are collaborating with our Group companies in China and South Korea and aiming to deliver ABSORBENT\*<sup>1</sup> to companies manufacturing lithium-ion batteries for automobiles. In the water-saving field, we are using the data analysis and communication technologies of U.S. company APANA Inc., which became an equity-method affiliate in April 2019, to fully develop the water-saving solutions business in Japan by optimizing water use through a completely new approach.

In addition to these specific initiatives for commercialization, the division is also exploring candidates for new businesses. We narrow down promising new businesses from information acquired using venture capital and also apply the PoC\*<sup>2</sup> method aiming to achieve early commercialization. Speed is the most important factor in exploring new businesses. Rather than working out detailed business plans as for an existing business, it requires the ability to solve immediate issues on the move and the decision-making speed to change direction quickly if mistakes are made. This approach to business is the same as that of the U.S. start-up Fracta, Inc.



Promote commercialization with a focus on the importance of ballast water treatment

(currently Kurita Fracta Holdings, Inc.), which became a subsidiary in May 2018. Fracta develops software services using artificial intelligence and machine learning (AI/ML). Its business approach is the polar opposite of the values and methods of the Kurita Group, which has maintained and refined the same business over many years. Our intention is to move beyond the established norms that Kurita has followed to date and to consider M&As and alliances flexibly.

I think the most important management resource when starting a new business is human resources. I expect individual human resources to think beyond conventional frameworks and to act accordingly. Rather than becoming fixated on the methods that have produced results in existing businesses or ways of doing things that we are particularly strong at, I want us to learn about the latest technologies and business trends, and to actively incorporate them. In the Next Generation Business Division, we will keep our eyes on the outside world and remain open to absorbing new things as we continue working to generate new businesses.

\*1 A proprietary material of Kurita that increases the safety of lithium-ion batteries by utilizing adsorption and desorption properties of chemical substances developed in the water treatment field.

\*2 Abbreviation for Proof of Concept. A simple test to demonstrate that a new concept or theory is feasible.

### Hiroaki Mori

Executive General  
Manager of Next Generation  
Business Division

