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sustainable japan

Muratec builds sustainability into factories, logistics

Unraveling Japanese companies

HIROKO NAKATA
CONTRIBUTING WRITER

Murata Machinery, building on its base of industrial automation technologies, is contributing to global sustainability at a time when an endless list of large AI data center projects are boosting semiconductor demand.

The Kyoto-based manufacturer, which also goes by its brand name of Muratec, contributes to greater efficiency in the semiconductor and other power-hungry sectors, helping to reduce their environmental impact. Automation, which is essential for efficiency in many industries, is a central part of the company's five main business domains: textile machinery, logistics and factory automation, clean-factory automation, machine tools and communication equipment.

"Now we can make the same number of products with fewer machines than before. This is the environmentally friendly goal that we are trying to achieve. It is as simple as that," said President and CEO Daisuke Murata in a recent interview, part of a monthly series by Naonori Kimura, a partner for the consulting firm Industrial Growth Platform Inc.

Automation and higher efficiency in chip factories and logistics are one key to

addressing a challenge the world is facing: too much electricity consumption. Muratec provides systems that automate storage and transportation inside factories and designs custom logistics systems for sectors like food, pharmaceuticals, chemicals and automobile parts.

From textiles to automation

Muratec, founded in 1935 as a jacquard machine maker, evolved over time as automation transformed the textile industry, Murata said. "Because of our original business, we have been working on automation and labor-saving for such a long time," he said.

In the beginning, the company supported the weaving of Nishijin brocade, a high-quality silk fabric that originated in western Kyoto around 1500 and was long valued by the ruling class. Today, its group sales have reached ¥520 billion (\$3.3 billion), with 8,890 employees in 25 countries and regions.

The textile industry started with hand-woven products, but the Industrial Revolution changed the whole world, boosting efficiency and productivity across industries. Human labor was still needed to tie yarn at the start of the revolution, but the process completely shifted to automation in the modern era.

"The trend of improving products while contributing to a better environment will not change. However, the old rule of focusing solely on productivity will continue to



President and CEO Daisuke Murata HIROMICHI MATONO

evolve. For example, manufacturing will have a smaller ecological impact and use fewer natural resources," Murata said.

This is why automation has become more significant than ever before, as manufacturers today are under pressure from apparel brands in Western nations, including the U.S.-based outdoor clothing retailers Patagonia and The North Face, that are responsive to calls from environmentally conscious end users. "I expect manufacturers to be increasingly required to introduce production methods that have less environmental impact," Murata said.

Reducing emissions

Among other things, Muratec focuses on reducing Scope 3 Category 11 indirect emissions of carbon dioxide from the use of its products and services, as defined in the Greenhouse Gas Protocol.

"We assemble products and don't use or generate much heat, so our Scope 1

(direct) and Scope 2 (indirect) emissions are not significant," Murata continued. "Meanwhile, our customers consume power and at times generate heat. Dealing with these issues in the right way is directly linked to our main business." The company demonstrates this strategy in its sustainability KPIs (key performance indicators), targets that measure, among other things, its contributions to a better environment.

With global competition intensifying in a wide range of industries, however, automation alone cannot provide a competitive edge. Murata said his company's competitiveness lies in its after-sales maintenance service and overall usability, while European makers are superior in product design.

For example, Muratec boasts easy-to-replace parts and an easy-to-read interface. Also, it makes products that are more compact than those from Europe, trying

to fit them into smaller Asian structures.

Developing people, products

To maximize its human capital, Muratec has also introduced a unique internal personnel system that has succeeded in motivating employees. Under this "career discovery system," work tasks are divided into about 100 sections, and employees can apply once a year to work wherever they want. For that purpose, job descriptions prepared by section leaders are disclosed to all employees. During the fiscal year that ended in March, about 50 employees applied, and 20 transferred to new sections.

"The good point of the system is that leaders consider how to improve employees' skills and how to encourage their career development, not just how to report higher performance," said Murata. "I wanted to encourage competition among my staff in a positive way and increase labor mobility within the company." He added that the system originally aimed to discourage people from leaving the company. The efforts seem to have borne fruit so far, leading to an average tenure of 16.5 years.

The goal of the system is to help employees develop greater creativity and new ideas that lead to product development as a result of changing positions, he said.

At the end of the interview, Murata said the company's 10-year vision toward 2035 is to "change and evolve."

For one thing, the company needs to overcome the challenge of making itself a sustainable organization, including adjusting workforce demographics, appointing future successors and advancing generational change in the company, Murata said.

For another, it aims to develop new products. "I hope the company will move further ahead by working on new manufacturing centered on environment and resources," he said. For example, the new manufacturing products it is currently working on include winding machinery that does not need to stop frequently at every yarn splicing, which drastically improves energy efficiency and package quality.

"We aim not just to use energy-efficient motors but also to create innovation and drive product evolution by introducing new ideas," Murata said.

NAONORI KIMURA
INDUSTRIAL GROWTH PLATFORM
INC. (IGPI) PARTNER



Murata Machinery's history in textile machinery is also, in every sense, a history of automation. Replacing tasks once performed by people with machines to raise productivity also meant reducing the use of labor, energy and materials. This corporate DNA has been carried forward into a diverse range of businesses, including semiconductor factory transportation systems, logistics and machine tools. Today, it has evolved beyond simple labor-saving into a force capable of transforming customers' manufacturing operations as a whole — shortening processes themselves and eliminating unnecessary transportation and energy consumption. As demands to reduce environmental impacts grow worldwide, one of President Murata's comments was particularly striking: that in addition to QCD (quality, cost and delivery), "creating the same value with fewer resources" is becoming a new source of competitiveness. At the same time, the further automation advances, the more it prompts renewed questions about the work that people should perform and the meaning of work itself. Placing great importance on its philosophy of "human-friendly technology," the company at the same time supports employees through initiatives such as an internal job-posting system and talent utilization unconstrained by age. Looking toward its centennial in 2035, the "evolve" in the company's theme of "change and evolve" does not mean a mere expansion in scale, but qualitative advancement. We look forward to Murata Machinery's next stage of evolution as it transforms its technology, businesses, people and organization together and contributes to the sustainability of society through manufacturing.



"The trend of improving products while contributing to a better environment will not change." HIROMICHI MATONO

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How the mail reaches even remote Seto citrus island

Destination Region:

MAIKO MURAOKA
CONTRIBUTING WRITER

Shikoku, the fourth-largest island in the Japanese archipelago and home to four prefectures, is surrounded by more than 600 scattered islands, most of which are in the Seto Inland Sea. Mail is delivered to the 59 of them that are inhabited, as it is to every corner of Japan as long as even a single person lives there.

One of those 59, Nakajima in Ehime Prefecture, is the largest and most populous of the Kutsuna Islands, a cluster of more than 30 isles of varying sizes, and lies about 10 kilometers off the port city of Matsuyama, the prefecture's capital.

It is one of Japan's leading citrus-growing islands, cultivating a wide variety of species including Unshu *mikan* (satsuma mandarins) as well as *iyokan*, Kara mandarins, Beni Madonna and Setoka. In early summer, the entire island is filled with the sweet, refreshing scent of citrus blossom. The citrus trees, which are planted on the island's steep slopes, produce sweet, succulent fruit in the abundant sunshine.

In summer the island is busy with beachgoers, and in late August it hosts the Nakajima Triathlon — an event with a 40-year history that attracts competitors from across Japan. The cycling route that circles Nakajima is part of the Kutsuna Ai Land Sea

Route within the Ehime Marugoto Cycling network, which allows cyclists to enjoy spectacular year-round views of the Seto Inland Sea.

Delivering to Nakajima

Mail addressed to Nakajima is transported by ferry from the post office in Matsuyama responsible for the area five days a week, from Monday through Friday. The journey from Mitsuhamma Port in Matsuyama takes approximately one hour and 20 minutes. Five ferries serve the island each day. Standard mail is carried only on the first ferry in the morning, while Yu-Pack parcels are transported three times a day — in the morning, afternoon and evening.

When the morning ferry arrives, the mail vehicle heads straight to Nakajima Post Office, just a minute or two from the port. This is one of the three post offices on the island. Nakajima Post Office provides financial services, including insurance and savings, besides postal services. All mail addressed to the island's 1,900 residents, spread across 950 households, is first delivered here.

Five postal workers are involved in delivery operations here. On the day that the reporting team from The Japan Times visited, Konomi Hamasaki, the only female carrier, was on duty with a few other workers.

Hamasaki sorted the morning mail deftly according to her delivery route. She noted



Konomi Hamasaki, the only female mail carrier at Nakajima Post Office COSUFI



Hamasaki collects mail that has arrived at Nakajima Post Office and prepares it for delivery. COSUFI



Nakajima is one of Japan's leading citrus-growing islands. COSUFI

that many of the items brought to the island are daily necessities and agricultural supplies essential to residents' lives. This is why she ensures that everything that arrives is delivered on the same day, no matter what. "I truly feel that I'm supporting the lives of all the islanders," she said.

While the Seto Inland Sea is generally calm, severe weather such as typhoons can cause the suspension of ferry services. On such occasions, two days' worth of mail is brought into the post office the following day and must be delivered that day. "Then our work becomes a race against time," Hamasaki said.

The mail carriers use motorcycles with a load capacity of 60 kilograms, as many of the paths are too narrow for cars. In places that are unreachable even by motorcycle, they park and continue on foot.

Connecting with islanders

One of Hamasaki's delivery destinations that day was the home of citrus farmer Sadashi Toshinari. A narrow, winding path led uphill to his house through an orchard full of lush, green mandarin orange trees.

Toshinari, who was busy working in the fields, broke into a broad smile when he saw Hamasaki approaching.

The fresh, tart scent of the deep-green mandarins wafted through the midsummer air. Hamasaki handed Toshinari a summer greeting card from his family temple. The two chatted and laughed together, looking almost like father and daughter.

Toshinari grows high-end citrus varieties such as Beni Madonna, Kanpei and Setoka, which require great care in both cultivation and delivery. "Every year, I send boxes of harvested citrus fruit to customers outside the island, but I've never received any complaints. I feel at ease knowing the post office handles them carefully," he said.

Hamasaki is originally from Matsuyama but moved to Nakajima when she got married. She became a mail carrier after taking on a short-term part-time job handling shipments of oranges produced on the island. When the citrus harvest season arrives in winter, many farmers ship boxes of fruit off the island. The post office sets up a dedicated shipping counter for this

purpose. "While working at the counter, I watched the mail carriers at work and learned how mail gets delivered. I thought it looked demanding, but at the same time, I felt it was a job that truly contributed to the community on the island, so I wanted to give it a try," she recalled.

Supporting aging community

As in many other rural areas, the population of Nakajima is declining, and many elderly people live alone. During her rounds, Hamasaki finds herself naturally paying attention to things like whether mail has piled up or if there are elderly residents she hasn't seen recently.

"It's not just our island. Young people are becoming scarce on many of the surrounding islands," she said. "On smaller islands with fewer residents, there is a shortage of mail carriers. Experienced staff members from Nakajima Post Office take turns visiting nearby Nuwa Island several times a month to help with deliveries. I will eventually learn the delivery routes and start helping out there as well."

The island's only bank branch closed down in 2022. There is an ATM at the JA agricultural cooperative, but financial services provided at post offices are just as indispensable for the residents of Nakajima as mail services. The same is true for many remote areas like Nakajima across the country, which is precisely why Japan Post's basic policy pledges nationwide universal service.

Hamasaki said the best things about Nakajima are the beautiful ocean, starry



Nakajima resident Sadashi Toshinari says Hamasaki is like a daughter to him. COSUFI

night skies and fresh air. "When the mandarin orange harvest season arrives, the entire island turns orange and the air is filled with the scent of ripe fruit," she said. She rides her motorcycle all over the island all year round, immersing herself in Nakajima's rich natural beauty. "I enjoy my job, and I am glad that I can interact with people here and support their lives through my job. I hope to continue doing this work for as long as possible," she said.

Destination Region is a series produced in partnership with Japan Post, and this article features postal workers serving communities across Nakajima. The series will continue profiling postal workers around Japan.

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