

Monozukuri gives Japan's niche players a competitive edge

While Japan has faced increasingly larger competition from the likes of China, South Korea and Southeast Asia in recent decades, many Japanese SME manufacturers have maintained large global market shares in B2B markets and niche fields characterized by high-mix, low-volume production. Working behind the scenes by supplying high-quality parts, materials and machinery, these niche companies are the so-called 'hidden champions' of Japanese manufacturing. They have and will continue to excel thanks to a strict adherence to the tenets of *monozukuri*, the Japanese manufacturing philosophy that centers around craftsmanship, excellence and the constant pursuit of innovation. From those engaged in automobiles and electronics, to materials science, plastics, printing and textiles, these hidden champions have placed themselves at the forefront of global challenges such as sustainability and climate change.

"Japanese *monozukuri* brought about highly reliable and durable products. Japanese companies' success is also because of Japan's educational system and cultural standards," says Toshihiro Takai, President of Asano Laboratories, a leading manufacturer of thermoforming machinery that has made major headways in sustainability in the plastics industry. "The manufacturing industry in Japan is of such high quality because the people are very diligent and serious when it comes to manufacturing good-quality products. This is why Japanese companies are able to maintain competitiveness despite a harsh global market. Japanese SMEs excel in high technology, which allows them to maintain a high global market share."

Yoshinori Takahashi, President of New Cosmos Electric, agrees: "Japan has continued to successfully compete in a very competitive market by focusing on developing innovative products and consistently offering exceptional quality." New Cosmos' innovation has focused on alarm systems, with the company being the first to develop a long-life battery powered natural gas alarm using its proprietary MEMS gas sensor technology. "Senet and other communications providers like Itron have partnered with New Cosmos because our low power

consumption MEMS sensor offers a seven-year battery life (soon to be 10 years) and enough power to provide data to utilities via various wireless communication networks."

When it comes to high technology and innovation, perhaps the sewing industry would not be the first that springs to mind. Matsuya R&D, however, has pioneered automation and AI in the industry, with its high-tech machinery used to develop textile products such as airbags and medical devices, where safety is of the utmost importance. "Quality and performance are essential. This is why Japanese *monozukuri* is being used in the car and medical industries, where a simple mistake can cost a human life," explains Matsuya president and CEO, Hidetaka Goto. "Using all our sewing technologies, we produce sewn products such as blood pressure manometer cuffs, car seat covers, airbags and seat belts. We are proud to be the only company promoting production lines with fully automated sewing machines with AI technologies."

As highlighted above by Asano president Mr. Takai, culture and education are major factors behind Japan's manufacturing superiority; but so too is passion. "This passion for manufacturing that drives innovation in unexpected fields is a special feature of Japanese *monozukuri*," states Atsushi Nagai, President of Sintokogio, a 95-year-old company engaged in several areas including surface treatment, powder treatment and foundry solutions. "Our passion for manufacturing has been the driving force for our business since the beginning. The technologies we have developed over our history are now being used in completely different fields as technologies for the future. For example, a Japanese government consortium of major battery-related companies uses our casting technologies and machines for processes in battery production. For our surface treatment technology, we not only contribute to lighter-weight automobiles, but also to the production of solar panels and semiconductors. In addition, our powder and handling technologies are used in the development of smartphone parts."

Another key tenet of *monozukuri* focuses around listening, understanding and addressing customer needs, and Japanese companies like printing

press manufacturer Sakurai Graphic Systems work closely with customers in order to drive innovation. "In my opinion, *monozukuri* is about meeting the needs of the customer," says company president Ryuta Sakurai. "The most important thing is the customer's requirements rather than the technology and the market requirements. We are not only close to our customers, but they are also close to us, and we create together. This is for the benefit of both our company and our customers."

This co-creation process has enabled Sakurai to offer solutions tailor-made to client specifications, with its printing press machinery employed in a range of industries where the strictest standards are required. "We are looking at medical, security, automobile, electrical, wearable, or IoT sensor devices. Also, we are looking at biosensors, a sensor that determines and monitors blood sugar levels. We are focusing on the field of printed electronics, where conductive inks are applied. I believe that clients' requirements are becoming stricter and require higher accuracy," says Mr. Sakurai, while pointing out that "Sakurai's cylinder-type automatic screen-printing machines, which we have cultivated for some 60 years, have a global market share of over 90%".

Shigeharu Yamanaka, President of Okitsumo Inc., also sees working closely with the customer, in order to meet and even exceed expectations, as indispensable to *monozukuri* manufacturing. "We prefer to directly communicate with our customers for better product development. Our company has continued to develop a multitude of products by challenging the customers' ideas of their wants and wishes all the time. This attitude supports our *monozukuri* and differentiates us from our competitors," he reveals. Specializing in heat-resistant, heat-insulating and lubricant coatings, plus a range of other coating technologies, Okitsumo's acute understanding of market needs has seen the company develop carbon-cutting solutions for a range of applications, with Mr. Yamanaka's eye firmly on the growing electric vehicle (EV) market.

Indeed many Japanese manufacturers are gearing up for the shift towards EV and hybrid vehicles. "There will be higher de-



Yoshinori Takahashi,
President,
New Cosmos Electric Co., Ltd.

mand for materials with higher heat resistance, especially for EV and hybrid applications. We have procured these special materials and developed our processing and stamping technologies to process them," explains Masamitsu Uehara, President of Techno State, a renowned manufacturer of high-precision metal sealings for powertrains, engine and transmission assemblies. "Our capability in metal stamping and related mold and die technologies requires very high precision. These material processing technologies are what differentiates us from other manufacturers."

Tokuhatsu, meanwhile, continues to drive innovation to improve the efficiency of various types of vehicles, including EVs. "We want to make sure that more customers are aware of our technology and how it can be used in EVs," says company president Hitoshi Kotagiri. "In this sense, the technology we most want our customers to know about is the Ultra-Fine Texture Plate. Tokuhatsu has seen demand for its products combining ultra-fine texture technology and high-precision stamping double in five years. "The ultra-fine texture has excellent friction behavior and helps improve fuel consumption," adds Mr. Kotagiri. "Improving efficiency is an essential issue for EVs as well, so we believe our products can be used in units related to this kind of production."

A main supplier to Toyota, Futaba Industrial is the top company for exhaust systems in Japan. But with the shift to EV and hybrids, it has shifted more focus towards body parts, while also "investing funds and resources into developing new exhaust systems more suitable for the diversified power sources for pure internal combustion engine,

hybrid and plug-in hybrid cars," explains president, Hiroyoshi Yoshiki. Futaba has 30 production bases in North America, Europe and Asia, and has established a system to supply auto parts to major automakers in Japan and overseas. "The Futaba Group intends to maintain its position as a trusted and successful supplier," says Mr. Yoshiki. "Accordingly, we continue to enforce the basics of safety, quality and *monozukuri* to pursue optimization globally."

Going global has become ever-more important for Japanese companies facing a dwindling domestic market and contracting labor force due to the nation's aging population – be it in search of new customers or production bases. "A declining population inevitably means a shrinking market, so we must grow together, including overseas. We would like to preserve and develop the essence of *monozukuri* in Japan while fusing it with overseas cultures," says Kazumasa Iida, President of spring maker Hayamizu Hatsujou. Another answer to the labor pool shortage is automation. "No matter what industry, digital processes and automation in factories are increasing and we are adapting to the changes

in all our Japanese and international manufacturing sites," Mr. Iida adds.

Dhowa Technos, a leading provider of solutions for the Japanese manufacturing industry for more than 70 years, is supporting many Nippon companies with the shift towards automation and DX. "There are many social problems, but right now there are not that many young people who wish to work in the factories in Japan; this is a fact," says president Hirokazu Ono. "For that reason, automation will improve the efficiency of production amid the lack of manpower. On the other hand, there is a need to employ people with specific knowledge who work behind the scenes to make sure the machines work accurately. From that point of view, IT and DX specialists are needed rather than factory workers. That is the only way to transform the operation of many companies in Japan."

As one of many Japanese players reorienting towards the overseas market, Yokoyama Kogyo established a base in Thailand, which, according to president Eisuke Yokoyama, has given the company "a chance to rethink our *monozukuri*".

"Our *monozukuri* continues to produce essential building mate-

rials and automotive parts, and although they may appear to be disparate businesses, our *monozukuri* is connected through metals and processing methods," he explains. "Our global experience in Thailand has given us a perspective on how to build many strengths in smaller details yet at a wider range. And I feel that Yokoyama Kogyo's ability to consider global market options when commercializing its new strengths has become a new starting point for our *monozukuri*."

Specializing in the area of functional chemicals, rubber products and molded products for a range of industries – including automotive, construction, semiconductors, pharmaceutical and medical devices – Kohyei Trading's global expansion is focused on India, where it is constructing a new factory. "Currently, our biggest focus is the Indian market, where we are focusing on selling our products to local companies and not Japanese-affiliated companies," says president Yoshihiko Tsuchihashi. "Our sales in India will be about \$23 million this fiscal year and \$30 million the next fiscal year. Japanese companies in India experience a

difficult phase because the Indian market is very cost-sensitive and also there are many competitors. However, we have an excellent local partner, and we are actively investing to increase sales."

For Japanese companies expanding to India, China, Southeast Asia and beyond, leveraging *monozukuri* as a competitive edge proves essential. Yoshihiro Watanabe, President and CEO of Toyo Seiko – a leader in peening surface treatment technologies for the automotive and aerospace fields – stresses that *monozukuri* gives Japanese companies a unique ability "to see things from the customer's perspective".

"Thinking about customers is the number one rule that describes Japanese *monozukuri* and that is what gives rise to our corporate philosophy in many ways, as well as the philosophies of many other Japanese companies. Japanese companies think about long-term perspectives and about what else the customers might want and what else might be needed in the industry. That is what results in the best quality and service levels possible; and how we win customers' trust."

Springing into international markets

For over 60 years, Hayamizu has been making high-quality springs for a number of vital domestic and industrial uses. Now the company is focused on expanding its international presence.



Engine starter recoil spring

Whilst Hayamizu started out in 1953 making spiral springs for clocks – before going on to manufacture spring parts for various household items – nowadays, the company makes spring components for many different products in several industries.

"We are proud to say that we are the go-to company for spiral springs and constant force springs in Japan," says company president Kazumasa Iida. "We strongly believe that the spring has potential uses in a variety of industries. We are always ready to meet the needs of these different clients and sectors, and have the expertise to respond to customers' high technical demands."



Constant force spring

As proof of the company's technical capabilities and flexible and responsive processes, Hayamizu boasts a record in meeting strict quality requirements for seat belts, an industry in which it holds the top market share in Japan for spiral spring parts. With bases in China, Indonesia and Mexico,

the business is now aiming to further expand its presence overseas in order to meet a wide variety of international demands through deliv-



Cord reel

ering high quality and low price springs, serving a whole range of products and industries.

"Somewhere in your life as a consumer, it's likely that we support you through our spring components in products and machines," says Mr. Iida. "Based on our advanced technical expertise and experience as a

global company, we support the lives and safety of people around the world – from automobiles and industrial equipment to medical devices and domestic products."



Seatbelt



"We possess creativity, imagination and passion for manufacturing, and will invent brand new items with our unique technology."

Kazumasa Iida, President, Hayamizu Hatsujou Co., Ltd.



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