

The might of *monozukuri*: how Japanese companies remain untouchable in many niche fields

Japan has faced stiffer regional competition from the likes of China, Taiwan and Korea in recent decades, as these countries have grown increasingly stronger in areas such as electronics, semiconductors, and automobiles. But behind the scenes, Japanese SMEs still dominate niche B2B-facing industries, leveraging Japan's *monozukuri* craftsmanship philosophy, which entails the development of superior-quality components and machinery defined by unmatched performance; as well as an acute understanding of customer needs.

"Japanese companies are very meticulous in responding to the end user's needs. By doing so, they have greatly improved their product line-up," says Toru Nishido, president of Iwatsu Electric, which manufactures communication systems, printing systems, and test and measurement systems. "Japanese *monozukuri* lies in the developers, that is, the team always caters to the needs of users in great detail."

"For our company, *monozukuri* means pursuing customer satisfaction with regard to quality and cost, which is the only way that a small company that operates in a niche field like ours can survive," says Takayuki Ochiai, president and CEO of industrial fastener manufacturer, Ochiai. "We have stable demand because our products have diversified applications in various industries such as construction equipment, housing, and automotive. I truly believe that the cost and quality are the two major factors that allow us to prevail against harsh competition."

Harsh competition has also been a challenge for Japan's semiconductor industry. But as the nation has lost significant market share in the production of semiconductors, it leads the globe when it comes to semiconductor manufacturing equipment, thanks to companies like Tokyo Electron (TEL), which aims to invest ¥400bn (\$3.5bn) in R&D.

"Each 'new age' means new technologies and more investment in R&D to keep ahead of the curve. We pride ourselves on being one of the only companies in the world to always assure the best quality, and



Toru Nishido, President & CEO, Iwatsu Electric Co., Ltd.

the most advanced technologies," says TEL president, Toshiki Kawai.

"In order to be market leaders, we have enhanced the patterning activities in lithography, etching, singular deposition, and wet cleaning, and we are one of the only companies in the world to have these four elements in the production process. In addition, we have the largest worldwide share of EUV and coater developer manufacturing."

meistier corporation also excels in the field of semiconductor manufacturing equipment. Its unique strengths can be divided into two major categories, as explained by president, Seiya Kudo. "First is the ability to make proposals using technologies that we excel at, such as image processing AI," he says. "The second is our global support capability that maximizes the LTV (lifetime value) of field service equipment. A lot of semiconductor manufacturing equipment stays in use for more than ten years. Our goal is to improve the accuracy of such equipment and extend service life."

Cleaning is another vital part of the semiconductor manufacturing process and the field in which SCREEN Holdings has a strong market share. Having started as a printing business, SCREEN also supplies equipment to the PCB and electronics industries, and has recently leveraged its innovative capabilities to enter renewables and life sciences.

"Our business model, which is to create solutions together with our customers, whatever their needs may be, remains unchanged. Beginning with our printing business, we have always pursued this model," says president, Toshio Hiroe. "The same applies for our other business areas such as semiconductors or displays: we go to the markets



Tetsuya Nakayama, President, TRUSCO

where our customers are and we work together with them to find the solutions to their problems."

Moving to materials science: Nippon Carbon is one of the world's largest suppliers of carbon products to the semiconductor market, supplying around 60% of what is used by semiconductor wafer companies. "Our expertise is heat treatment, and as such we can propose C/C composite, a reinforced carbon material that prevents distortion, to our global clients," says president Takafumi Miyashita, adding that the company plans to invest more in R&D to meet the latest demands of the semiconductor industry. "Due to the higher levels of purification needed from the silicon semiconductor field, we are exerting more energy into our material R&D. Carbon plays a key role, but it is such a simple material, which compels us to increase our R&D strategy to offer more attractive proposals to our clients."

For its part, Nihon Parkerizing also counts heat treatment among its main strengths, with its rust-prevention materials and coating technologies used for a wide range of industries and applications, including components for electric vehicles (EVs). "In terms of chemicals for electronic components used in EVs, our clients require greater functionality, better heat treatment and greater accuracy. Luckily, we have the experience, the technology and the will required to answer all of their demands," says president, Mitsuru Matsumoto. "Furthermore, our products and services help clients attain higher sustainability. By providing chemicals free of hazardous materials, such as chrome-free chemicals, we contribute to the creation of safer industrial standards."

Also playing its part in environmental sustainability, Asaka Riken



Toshiki Kawai, President, Tokyo Electron Ltd.

operates in the extremely niche but increasingly important area of lithium-ion battery (LIB) recycling, as well as recycling of precious metals. "Today, we have the technology to recycle LIB in a safe and reasonable manner. While this technology is known to various companies, not all firms employ the same process. At Asaka Riken, we have developed our own LIB recycling technology and no other company utilizes the same technique," says CEO Yusaku Yukita.

"We are currently aiming to use LIB recycled materials for new LIB processes, which means that we aim to recover 100% of the materials from all the metals and components used in the production process."

While it is not involved in manufacturing, TRUSCO plays an important role in the manufacturing supply chain as a trading company supplying products to Japanese SMEs across a wide range of industries. Also operating as an MRO (maintenance, repair and operation supplies) wholesaler, TRUSCO has accelerated digital transformation to further enhance the quality of its services.

"One of our strengths is that we have a great digital network in terms of distribution. We even have our data centre set up within our headquarters," explains president, Tetsuya Nakayama. "I don't think there are any companies putting this much investment into digitizing their system."

"There are many ways for us to continue growing, like in MRO or direct delivery systems," he adds. "In this way, we are able to provide services that don't exist in the industry or the world yet and by doing so, we create greater value. We will always strive to be a company that is indispensable with our contributions to Japan's manufacturers."

Optimal solutions for ever-changing industries

IWATSU ELECTRIC is constantly striving to create new value and contribute to enriching society through a diverse array of communications systems, printing, and test & measurement equipment.



IWATSU Head Office in Tokyo

We live in a world that is shaped by the speed of science, technology, and communication. Companies today face a myriad of challenges, including flexible product development that is in sync with the state of the market, increasing sales, and making product availability more efficient and more sustainable.

IWATSU ELECTRIC, whose advanced technology supports businesses with these increasing demands placed upon them, offers high-caliber tech solutions

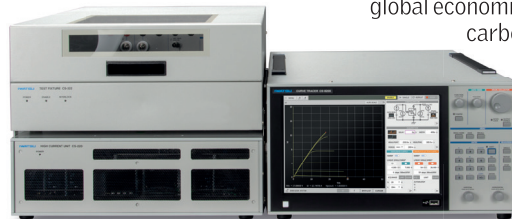
to its customers through a fusion between hardware and software systems development.

"Our goal is to further the satisfaction of our customers through offering the best solutions. IWATSU is constantly striving to create new value and contribute to enriching society," says Toru Nishido, President of IWATSU ELECTRIC.

"Our three main business pillars are communication systems, printing systems, and test and measurement systems, and with the adoption of IoT we are now able to combine the strengths of these three pillars together."

The company's contribution to social, economic and scientific fields includes the Super-Kamiokande, a measuring device developed for the neutrino observatory; and the next-generation

detector Hyper-Kamiokande, a gigantic detector used as a microscope to observe elementary particles, and also as a "telescope" for observing the Sun and supernovas using neutrinos.



CS-8000 Semiconductor CurveTracer

"The Super-Kamiokande won a Nobel Physics Award, and there is strong demand from research institutes as it is an unbreakable device that does not require maintenance, as it has to be constantly working properly



DS-8000 Digital Oscilloscope

in order to extract neutrinos," explains Mr. Nishido.

IWATSU ELECTRIC is also active in sustainability and energy efficiency – a sector set for significant growth as Japan and global economies strive to reduce carbon emissions.

"Our DS-8000 and CS-8000 measurement equipment (pictured above) have been developed to test SiC and GaN devices for high efficiency," says Mr. Nishido, adding that the company aims to utilize its advanced technologies to enter other new fields as well.

IWATSU
www.iwatsu.co.jp/ENGLISH

Giving shape to ideas through *monozukuri*

To be chosen by the customer is no easy task, but thanks to Chuo Koki's 75 years of experience in responding to its customers' needs in the machine tool industry, this becomes possible.



Anjo Office

In our daily lives, metal products are used in a variety of settings, but the suitable tools are needed to create their final form. Since its establishment in 1946, Chuo Koki has been heavily involved in this important process, providing the necessary machining accuracy in a timely manner for the required applications.

Because Chuo Koki is a small-to medium-sized business, it is able to act with the mindset of "customer first". To achieve this, the company has adopted "horizontal integra-



"Our business is focused on responding quickly to our customers' needs, delivering products they demand."

Yasuhiro Minoura,
President and Representative
Director, Chuo Koki Co., Ltd.

tion" to provide one-stop services, from product development to sales as an integrated service.

"Our goal is to be chosen by our customers, so we need to support them. We aim for prompt delivery and strive to deliver value-added products," says president Yasuhiro Minoura of the company's policy.

At the core of Chuo Koki's business are the recently established "Sales Innovation Division" and the "Metrology Solution Center", which are dedicated to investigating and developing new products. Establishing these departments has enabled the company to quickly respond to customer needs.

Many of Chuo Koki's custom-



Tapped hole automatic inspection machine



Automatic Guided Vehicle (AGV)

ers have a large share of the global market. To meet the needs of these customers, Chuo Koki is proud and passionate about using its extensive partnerships to guarantee the latest information, respond quickly to inquiries, and support the design and development of new high-precision tools.

Moving forward, the company will continue to channel its strong ability to discover and understand its customer needs and then provide innovative ideas and solutions for those needs.



Clean Create Challenge

中央工機

http://chuo-koki.co.jp/eng