Kaizen and Monozukuri: The distinguishing factors behind Japanese manufacturing quality

In the face of regional competition, Japanese manufacturers continue to distinguish themselves through kaizen, monozukuri and continuous product development finely attuned to the needs of clients, industry and society.



"We have long been challenging competitors with KEM's monozukuri"

Kyoko Kishimoto, President, Kyoto Electronics Manufacturing Co., Ltd.

Speaking to the CEO or president of any Japanese manufacturing company about what gives Japan the competitive edge in the face of increasing regional competition over the past few decades, the conversa-

topics of "monozukuri" or "kaizen". The distinctive and unmistakable quality for which Japan is renowned can be mainly attributed to monozukuri, a long-standing philosophy held by Japanese manufacturers that focuses on pride, skill, dedication, high-quality production and the constant pursuit of innovation and perfection. A closely related concept, 'kaizen', meanwhile, meaning "change for better", focuses on continuous improvement.

In the context of Japanese manufacturers, the kaizen concept encompasses working to continuously improve products, the productions processes behind those products, as well as constantly developing new solutions and innovations that are closely aligned with customer and market needs.

Tovota made monozukuri and kaizen famous in the business world some years ago. But beyond being

tion will undoubtedly turn to the buzzwords in the world of Japan's corporate behemoths, they are concepts devotedly and sincerely followed by Japanese manufacturers at all levels, and particularly those smaller specialized companies who develop parts, machinery and components on which bigger companies - including Toyota and many more in Japan and across the world depend to build end-user products. As these chuken kigyo – strong, agile, tech-savvy and innovationdriven companies - work behind the scenes, they are often referred to as the "hidden champions" of Japanese manufacturing, constantly innovating and improving their products and processes for the benefits of

> their clients, industry and society. "We believe that it is our responsibility to accurately grasp the needs of our customers and deliver the best products that are needed; delivering the best products naturally guarantees guality. This is what I think of as the essence of monozukuri," says Masami Iida, President of Oiles Corporation, which develops high-quality bearings for a wide range of industrial clients.

> "The most famous example that is easy (for foreigners) to understand is Toyota's 'kaizen'. We prioritize the position of our customers who appreciate the high quality and functional side of our products rather than prioritizing the price."

> Indeed it is this focus on highquality and not low prices that distinguishes Japanese from Chinese competitors - as well as this strict adherence to monozukuri, kaizen and development finely attuned to customer needs.

> "When we talk about the Japanese culture of monozukuri, the essence of this is to include fine adjustments and technology to suit the needs of the clients," says Masataka Ushio, President of Ichikawa Co., Ltd., which develops parts essential to paper-making and high-tech industries such as automotive and semi-conductors. "We are seeing many Japanese companies that are still surviving despite the competition from the emerging countries. The most successful Japanese companies are the ones who understand

the varving market needs for both the products and services in different markets globally."

KEM: analyzing monozukuri On the topic of facing competition, President of Kyoto Electronics Manufacturing Co., Ltd (KEM) - which develops high-precision analytical and measurement equipment for a wide range of industries - Ms. Kyoko Kishimoto admits: "Historically, western countries have been a little bit ahead of us regarding analytical technology and price competitiveness. We have long been challenging those competitors with KEM's monozukuri."

Indeed KEM's business focuses on providing high-performing analytical devices, such as its Karl Fischer Moisture Titrators, to help its clients achieve their own monozukuri. Having gained a stellar reputation among clients in Japan, KEM aims to strengthen its presence abroad, leveraging on its strong capabilities of delivering customized, tailor-made solutions to its clients.

"We try to provide the proof that the devices we produce, for example analyzers, are highly accurate," says Ms. Kishimoto. "This accuracy gives the users a sense of security or assurance. When we talk about security or assurance, that is directly linked to the actual value that comes out from the analyzers or the measurement devices we produce."

As is often the case with Japanese presidents, the conversation with Ms. Kishimoto again returns to the highlevel idea of monozukuri and particularly the importance of ensuring the concept is passed onto Japan's next generation of business leaders and manufacturing craftsmen.

"The succession of the techniques from the senior people to the next generation is very important. Of course, new generations have their own new and fresh ideas. We think that mixed and combined technology with old and new ideas would be the foundation for producing good products," she concludes. "I would like to succeed in that aspect of manufacturing in the future through our monozukuri process, which joins the spirit of traditional Japanese craftsmanship to the product."

Contributing to environmentally-friendly paper-making

Serving paper industries with Felts and Belts with unique and value-added technologies to "squeeze" the water out during paper manufacturing, Japan's Ichikawa Co., Ltd. develops pioneering products for the press section for energy savings.

Paper-making is an energy-intensive process consisting of three main steps: the forming section, the press section, and the drying section. As the drying section reguires most of the energy in the whole process (like ironing your



shirts at home), extracting as much water as possible from the paper at the press section is essential to reduce overall energy consumption. "Because we manufacture the

most critical product for press sections, we contribute to and synergize the process of reducing

KIMICA: Unlocking the endless potential of alginates

Having pioneered new applications for alginates, which are extracted from seaweed, for the past 80 years, KIMICA continues to develop innovative alginate-based solutions in response to the demands of today's health and environmentally-conscious world.

In the late 1930s, a keen-eyed chemist by the name of Fumio Kasahara took an interest in the seaweed he saw washed up on the shore of the beach. It was then that this visionary entrepreneur decided to make it his life goal to make effective use of this seaweed, establishing Kimitsu Chemical Institute (today known as KIMICA) in 1941. KIMICA became the first-ever

Japanese company to successfully manufacture alginates from seaweed at the industrial level and ever since then has been unlocking the endless potential of alginates for the benefit of society.

Celebrating its 80th anniversary this year, KIMICA is looking towards the future with a renewed optimism and vision as the demand and applications for alginates continue to expand in today's health and environmentally-conscious world - from food and textile products, to cosmetics and pharmaceuticals. "Our goal has been to be the 'Best in the World', and to continue to develop new and innovative applications of alginates," says current President & CEO, Fumiyoshi Kasahara, Ph.D. "As focus towards environmen-

tal and health-related issues increase, demand and expectations for alginates continue to rise. As the leading company in biopolymers, the responsibilities imposed on us also continue to rise. In order to answer those demands, and to be the front-runner in this day and age, we have established

Innovation in analytical and measuring instruments



the total energy used for production. We play a very crucial role in the paper-making process and we consider ourselves to have a very important responsibility," explains Masataka Ushio, President of Ichikawa Co., Ltd. "Globally, there are only three companies that are able to manufacture all of these critical products: the press felts, the shoe press belts, and the transfer belts. The global market share of the shoe press belt is number one or two and number one for the transfer belt."

Ichikawa also engages in the production of heat-resistant industrial materials. Based on its advanced technologies, these highperforming industrial materials are used at demanding production lines around Japan and the world, supporting the galvanizing lines of





ultra-high-tensile steel materials for automobiles, and high temperature laminating press lines of printed circuit boards for 5G. IoT, automated driving and other areas of rapidly advancing technoogical innovation.

"Our production facility can handle products up to 13m wide and 195m long. We make 1µm design adjustment, as customers use our products with a maximum speed of 130km/h and dewatering on

"We are ranked number one or number two in global market share for our shoe press belts, and number one in global market share for transfer belts"

Masataka Ushio, President, Ichikawa Co., Ltd.



the paper machine. We are putting more efforts in our R&D, and focusing on continuous quality

and productivity improvement as we aim to increase our global market share and keep our competitiveness for all existing services, and also in order to create new markets with our technology," adds Mr. Ushio. "Ultimately, we want our customers to enjoy our products and say, 'Ichikawa manufactured-products are best in their class."











80th

From left to right: Katsunobu Kato. Japan's Chief Cabinet Secretary: Fumivoshi Kasahara, President & CEO, KIMICA Corporation; Yoshihide Suga, Prime Minister of Japan; Toshimitsu Motegi, Japan's Minister for Foreign Affairs.

a stable production, quality assurance, and R&D system."

Such efforts led to KIMICA being awarded with the Special Award (SDGs Partnership Award) at the 4th Japan SDG Awards in December, 2020, in recognition of the company's initiatives and activities to address the United Nation's Sustainable Development Goals (SDGs).

The fact that such recognition came on the eve of the company's 80th anniversary was a particularly proud moment for Fumiyoshi Kasahara, Ph.D, who has and will continue to ensure his father's legacy and unstoppable drive to find the most effective uses of seaweed, remains at the core of KIMICA for decades to come.

Tsukasa Chemical Industry: Providing high-quality packaging with a focus on the customer

Tsukasa Chemical Industry's high-performance packaging and outstanding customer service have given it a position of strength in the domestic market, and the company now has an eye on global expansion.



Takeshi Nishimura, CEO. Tsukasa Chemical Industry Co., Ltd.

Since its establishment in 1968. Tsukasa Chemical Industry has been a leader in the production of high-performance packaging machines and a range of plastic products for several industries. The company follows the philosophy of monozukuri to ensure it meets the demands of the domestic market for perfect packaging, making its

product difficult to replicate for cheaper competitors. Tsukasa Chemical enjoys a com-

manding market share in Japan, with the quality and durability of its flagship products, the PP strapping and the Tying Tape, leading to a loyal customer base. The company has used this strong domestic position to expand its production to Malaysia and Vietnam, where it uses its specialist technical knowledge to ensure the highest standards remain.

Tsukasa Chemical uses its unique in-house model to develop high-performance air cushion machines and film, as well as boasting tailor-made distribution and afterservice channels. The company is aiming to expand into Europe, where CEO Takeshi Nishimura explains "we must make inroads by focusing on the superb quality



standards that we represent being a Japanese company."

Tsukasa Chemical is committed to a sustainable businesses approach without compromising on quality. "The company is steadfast in its pursuit of reducing the amount of plastic waste associated with its products," says Mr. Nishimura.

Tsukasa Chemical focuses on remaining loyal to its customers, and this philosophy extends to its workforce, who operate



as a family unit to provide the best possible service to clients. Tsukasa Chemical has an ambitious medium-term goal of reaching ¥20 billion revenue, vet Mr. Nishimura explains this is not a strict target he has set but simply an attainable example. "We prefer to grow in a steadier, more sustainable way," he states.

🔁 司化成工業株式会社 ASA CHEMICAL INDUSTRY CO., LT www.tksc.com/en/

Seisan Nipponsha: Pioneers in zipper bag technology

For more than half a century Seisan Nipponsha has been developing these simple yet highly functional zipper bags which have become indispensable in our daily lives.

The resealable zipper bag: so ubiguitous, so simple and such an everyday part of life that not many end-consumers would be aware

continuous product development that has gone into making these products both incredibly useful and easy to use.

Much of this innovation began with Japanese company Seisan Nipponsha, which introduced the world's first zipper bag, the 'Unipack', in 1955. Later came the 'Minigrip' made from polypropylene, which improved the

transparency of the bag, before the launch of 'Lamizip' and 'Lamigrip'. which boasted oxygen and moisture barrier properties and improved food preservation capabilities.

Since then, Seisan Nipponsha has been improving the multilayer structure and shape of the zipper bag, working to meet the of the decades of innovation and ever-changing market demands.



Takavuki Noguchi, the requirements Chairman and of the market with Representative Director, one material and Seisan Nipponsha one bag shape."

> Seisan Nipponsha's product portfolio now comprises of more than 400 types of zipper bags, originally designed with specific dimensions and structure. Re

sponding to the latest market trends, the company has developed 'Unipack' biodegradable zipper bags and furthermore is just about to release 'Unipack Eco' made from bio-polyethylene and recycled polyethylene in accordance with the UN Sustainable Development Goals (SDGs), while expanding its line-up of zipper bags for the fast-growing e-commerce market. After consultation with clients. Seisan Nipponsha has also developed a custom-made filling machine to improve the efficiency of the zipper bag filling process.

"We will continue to grow into being an excellent company that can contribute to a wide range of customer issues by optimizing the process of customers who use our zipper bags," concludes Mr. Noguchi. "We strive be a company that sticks to the spirit of monozukuri."









RP Topla: Producing high-performance and sustainable plastic parts

Established in 1955, plastic parts producer RP Topla made its name through supplying Japanese electronics giants such as Sanyo, Panasonic and Sharp. Since then the company has grown to become a global leader in supplying high-performance plastic parts and sheets for the home appliance, office automation, automotive, and packaging industries.

As the automotive industry looks to replace heavy metals with lighter

materials to improve

performance and fuel

efficiency, RP Topla

has tasked itself with

developing light-

weight plastic parts

based on its special-

ized technologies. For

example, the com-

pany has patented a



of tomorrow.

Masuo Namme, plastic pipe designed to replace traditional President, RP Topla Ltd. with about 20.000 metal pipes, which is www.rptopla.co.jp

Developing the machines that have revolutionized Japan's postal and packaging industry

Morico was among the first companies to develop, commercialize, and sell automatic stamping machines that are needed in various areas of the economy.



"Morico's automatic canceling machines are used at post offices all over Japan"

Yukio Mori. President, Morico Co., Ltd.

In 1932, the Japanese Ministry of Posts and Telecommunications put out a request for the development of an automatic postal canceling machine suitable for the Japanese postal system.

"My grandfather developed it based on the automatic postal canPresident of Morico Co., Ltd. which is now a manufacturer of a wide range of high-speed imprinting and packaging-related machines. After that, Morico was among the first companies to develop, commercialize, and sell automatic stamping machines that are needed in various other industries, not just for postal services. For example, in the 1960s, when it was legally required to show the date of manufacture on the label of sake bottles. Morico developed such a stamping machine to do this specific task. Around the same time, the government

RP Topla's specialized technologies allow the company to produce lightweight plastic parts which deliver outstanding performance as well as incorporating recycled materials that reduce their environmental impact.

> being utilized in BMWs and Volkswagens. In the long-term, RP Topla aims to play a more significant role in the automotive industry by developing components for the cars

> Leading by example in the plastics industry with green and sustainable production, RP Topla incorporates recycled PET bottles as a base material for many of its products. "I anticipated the growth potential of the PET sheet business and PET bottle recycling market," says company president, Masuo Namme. "In terms of the manufacturing of the PET sheet we have about 60% of the market share in Japan. We are dealing



Foldable tray table on a Shinkansen

bottles per year and we would like to grow this to scale going forward."

Environmental consciousness is a key aspect of RP Topla's strateqy, especially given Japan's search for a solution to its plastic problem. "Our role is to face up to that problem and to reduce the amount of plastic waste tons of recycled PET in Japan," says Mr. Namme.

Looking towards the long-term future, Mr. Namme hopes to play a role in revitalizing the Japanese economy through partnership and acquisition opportunities to support domestic companies in decline. "Many companies, maybe more than ten thousand, do not have their successors and a lot of executives of such companies have lost their motives and I am always watching the situation and trying to find the chance to build partnerships with them," he says. "If they want us to acquire them, we will pursue that possibility and that is how we are growing and entering new business by targeting growing areas like the recycling market."



celing machine that Japan Post had imported from the UK. This greatly contributed to the labor saving of the Japanese postal canceling business which had been done by hand until then. To this day, Morico's automatic canceling machines are used at post offices all over Japan," explains Yukio Mori,



Coding Machine M-570PC

ordered unique serial numbers to be stamped on medicine cartons.

"Since we were the first in Japan to commercialize a stamping machine for pharmaceuticals, we were flooded with orders, and manufacturing of the machine could not keep up," says Mr. Mori "We are great at applying our core technology according to the special circumstances of each industry."

Evolving from a business that in 1932, helped revolutionize hand-driven work through the introduction of machinery, how is Morico looking to continue to



Card Sanitizer

innovate amid the Fourth Industrial Revolution?

"What we are aiming for now is to develop machines that allow the operator to communicate with the machine in both directions. For example, if an error occurs, the machine will notify you via the smartphone, or you can operate the machine with the smartphone. That's just one of our developments."



Itoh Denki: Automated conveyer solutions delivering the fully-integrated package

Incorporating both software and hardware. Itoh Denki's fully-integrated conveyer solutions enable customers to reach the cutting-edge of logistics technology.

Over the coming years both the global e-commerce market and the demand for factory and warehouse automation will continue to expand at a rapid pace. Both of these trends bode well for Japanese company Itoh Denki, a global leader in modular automated conveyer solutions for logistic centers and factories.

Driven by both its capabilities in robotics and the urgent need to address its own domestic labor shortage issues due to its shrinking and aging population, Japan has placed itself at the forefront of factory automation in the Industry 4.0 era, thanks to a large base of innovative manufacturers like Itoh Denki, whose vision is to build "Technology for Tomorrow".

Established in 1946, innovation has always been at the core of Itoh Denki, which developed the first 24V brushless DC powered roller for conveyer lines, the Power Moller 24, in 1988, which became a safer, guieter and more energy efficient alternative among clients in Japan's reputed manufacturing sector. Having entered the United Stated more than two decades ago, Itoh Denki played a pivotal role in the modernization of the U.S. Postal Services' (USPS) logistics system and today boasts worldclass technology centers in Amsterdam and California as it looks to continue its global expansion in the US, Europe and beyond.

Drawing on its 75-year experience in motor manufacturing, Itoh Denki aims to develop market-leading automation solutions for factories and logistical centers based on innovation, modularity and security.

"Our goal is to combine software technology including control and communication, and





hardware technology, including conveyor modules, on top of our motor technology to achieve the connected factory, seamless logistics, and eventually contribute to the solutions to address the labor shortage," says Tetsuva Itoh, president of Itoh Denki Co., Ltd., which continues to update its Power Moller® (MDR or Motor driven roller) to incorporate the latest Industry 4.0 solutions, enabling customers to reach the cutting-edge of logistics technology.



"To be more specific, having our Power Moller® (MDR or Motor driven roller) as a master cell, we build up our own MDR-based intelligent platform, where every peripheral device is connected through autonomous decentralized control, so as to combine tor technology to every part the internet and computer with the physical conveyor equipment. Though these efforts, we endeavor to achieve conveyor innovation for the next generation, by capitalizing on Big Data from the logistics site to achieve predictive maintenance as well as a waveless workload."

With traditional material handling and factory automation equipment being big, heavy and cumbersome, Itoh Denki's key concept is based on developing solutions that are "light, thin, short, and small". Itoh Denki's motorized roller, for example, is

"We endeavor to achieve conveyor innovation for the next generation, by capitalizing on Big Data from the logistics site to achieve predictive maintenance as well as a waveless workload"

> Tetsuya Itoh, President, Itoh Denki



the ideal replacement for conventional handling equipment that requires a compressor to produce air through high pressure, as Mr. Itoh explains.

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"What we are trying to achieve is to introduce our moof the material handling process. Interestingly, the airless technology which eliminates pneumatics is drawing a lot of attention from every segment of material handling."

Based on the "light, thin, short, and small" concept, idPAC is one of Itoh Denki's popular solutions defined as a "point and click solution". Enabling guick, easy and efficient installation, idPAC systems come with complete modules, including rollers, transfer modules, circuit boards, frames and software. With everything preassembled, wired and ready to be put together, installation costs and time are drastically reduced, ensuring an early start of operations and a fast return on investment.

Having cemented its reputation as a leading supplier of automation equipment among clients in Japan and across the world, Itoh Denki aims to reach a wider base of global clients looking to get ahead with the highest-quality and highestperforming modular automated convever solutions.





Oiles: A global leader in self-lubricating bearings and vibration control devices

Oiles' revolutionary self-lubricating bearings not only vastly improve performance, durability and energy efficiency of moving machinery, but also significantly reduce pollution and environmental impact.





PS Bearing

"Since they do not require oil, our bearings are environmentally friendly products, and serve as indispensable parts for machinery, equipment and social infrastructure"

Masami Iida. President, Oiles Corporation

From automobiles and electronic devices, to construction machinery, buildings and hydro-electric power

plants, these are just some of the areas in which the industry-leading technology of Oiles has a true bearing on performance. Working closely with clients

across a range of industries, Oiles' relentless R&D focus has led to the development of the highestguality, longest-lasting and most technologically advanced bearings on the market. Compared with normal plain bearings, Oiles bearings offer superior sliding and friction properties and are built to perform under the toughest conditions, from high-and-low temperature environments to underwater environments.

Oiles has also been a pioneer in the area of seismic isolation and vibration control devices, with its





state-of-the-art technology adopted in buildings and bridges across Japan, Korea and Taiwan.

Striving to accurately and whole heartedly respond to the needs of clients. Oiles' continuous innovation and product development stays at pace with the rapid technological advancement in the industries in which it operates. This unrivalled ability to meet ever-changing demands is what sets the company apart from its competitors.

"By responding to customer needs and issues, we do not make the world's first and best products, but our customers do. Our bearings exist for our customers to achieve their goals," explains Masami Iida, President of Oiles Corporation.

"We believe that our strength lies in the ability to add value to our customers' products and provide technologies and products that satisfy our customers by solving

their problems."

As a result of this commitment. Oiles has developed revolutionary self-lubricating bearings that not only vastly improve performance, durability and energy efficiency of moving machinery, but also significantly reduce pollution and environmental impact by eliminating



the need for oil-based lubricants. In comparison to traditional bearings that need to be changed several times a year, Oiles self-lubricating bearings do not require replacement for 10 years on average depending on the usage environment. Offering such superior properties, it is no wonder that an increasing number of clients have adopted



Biomass Plastic Bearing

these bearings in their machinery. from automobile and construction machinery manufacturers, to hydroelectric power plant operators.

In response to era-defining changes, such as the shift towards electronic vehicles, advanced ro-

500 SPB Series

botics and renewable energies Oiles will remain at the forefront by developing bearings made from groundbreaking new materials that are thinner, lighter and stronger These include innovative metal allov bearings such as its SP5B series, as well as bearings made from plastic polymers and environmentally friendly biomass plastic. In the automotive industry, for example, Mr. Iida says Oiles can contribute in the era of electronic vehicles (EVs) by supplying plastic bearings to improve steering, reduce noise and improve fuel efficiency.

"Currently, the automobile industry is at a major turning point with the wave of EVs. We would like to be part of this revolutionary period of the automobile industry with our customers by supplying our products as indispensable parts," he says, adding that the company's bearings and thrust washers will also be essential to the functioning of the latest robotics and factory automation equipment.

"Another area of interest is offshore wind power generation, which is expected to be in demand in the future. We believe that these changes in the environment and the trends of the times are a tailwind for us. We would like to use our technology and know-how to provide products that match market needs."



Fukoku: From one-man venture to world leader through a focus on quality and innovation

Having grown into the world leader in wiper blade rubber production over the last 68 years, Fukoku's dedication to constant innovation enables the company to produce custom-made solutions for the automotive industry and beyond.

Trusted carmakers like Tovota and Nissan's reputations have been built on superior build guality and reliability. And behind these car manufacturing giants lie the Japanese SMEs that produce their vehicles' high-quality and high-performing parts which together work in perfect unison

These specialized SMEs, which form the backbone of the Japanese automotive industry's success, are dedicated to the tenets of monozukuri, focusing not just on quality and durability, but also a commitment to constant innovation. This innovation allows them to create groundbreaking products which meet the changing needs of an automotive industry undergoing a revolution.

Since its establishment in 1953. Fukoku has become the world's leading producer of wiper blade rubber, using innovative technology proven consistent over many years to cement its international reputation. The company produces a range of high-performance rubber products for the automotive industry, such as pioneering antivibration products created with composite technologies. These custom-made products have also allowed Fukoku to expand into more industries including construction machinery and railroads.

This expansion is based on what the company calls the 'Fukoku Way'. "It's about being responsive to the needs of the wider community, not just talking about our company but also beyond that, to our stakeholders and the company's contacts around the globe," Takashi Ogawa, President of Fukoku, explains. "The slogan is not 'Yes, we can' but 'Yes, we do' because we put a lot of effort into what we do."

The company's commitment to R&D has also been a cornerstone of its growth. "Our R&D fuels us from the design point of view. Later on we switch to the manufacturing site to actually implement those ideas that are coming out from the R&D



competition, Fukoku constantly The company's technology means it is able to bond rubber adjusts its best practices, preventing less costly alternatives from and metal, as well as blending being able to replicate the perforrubber with other materials. By mance of its superior products. An ensuring the best materials for

customer needs in all aspects of its production, Fukoku's products can help increase the safety and comfort of automobiles.

Whilst the automotive industry accounts for 80% of Fukoku's sales, the company is also focused on growing the other 20% of its business in a wider range of industries, including healthcare. "It's a new kind of approach from our company. Some time ago the company introduced this bio-related section, leading to our healthcare department developing cell culture bags and cell culture medium," Mr. Ogawa explains.

"First of all, the major product here is the culture bag itself. The bag is made from our technologies developed in house and based on our rubber technologies. We came to the realization that it's not just the infusion bags, but also cultivating the cells inside the culture bags. We are conducting research with the aim of realizing safe and efficient cell culture. (Refer to our video treatise: https:// www.jove.com/video/57922). It is something that might help in the medical field. The customers have also been satisfied in this regard," explains Mr. Ogawa.

The 'Fukoku Way' not only encompasses tailoring solutions to customers, but also creating a warmhearted atmosphere within the company. This atmosphere is aimed at ensuring every employee in the company perfectly understands the goals they are aiming for, and what the company's principles are as a whole. "The dream is very ambitious. It is to create the 'atmosphere' not only among the company's employees but also for our customers and everybody related to the company," Mr. Ogawa proudly states. "We aim to be an institution where no words are needed to understand each other perfectly on what goals we're aiming for."



essential to the manufacturing process, customizing its products to meet each client's specific needs.

Many Japanese SME manufacturers have long been leaders in niche fields, making highprecision parts and components that can be customized to the needs of each client. This is the case for Everloy, a manufacturer of specialized spray nozzles and cemented carbide used in manufacturing machinery across a wide range of industries.

"Our strength is our ability to customize products based on the customer's requests, and we don't engage in mass production of any

which plays an essential role in the hot rolling processes by removing an oxide layer on the steels. As Mr. Fujiwara stresses, descaling is a very important part of the process "because if it's not done properly, it would se- 🦯

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verely affect

product qual-

Nippon Coke: "We have a big responsibility to address the climate crisis"

The manufacturer says that carbon-emitting, heavy industries such as the coke sector must be proactive on tackling environmental issues.

first half of the 20th century, but like most developed countries today, the industry and its importance has undergone a dramatic shift. "Back then, by bas-

ing ourselves in coal we were able to make a huge contribution to the Japanese economy and we were at the Kazuya Kage, President

foundation of many Nippon Coke & industries here. While coal was the main re- Engineering Company source supporting industry in Japan, this slowly changed and the mining industry declined. So, in 2003, we completely shifted our business trajectory," explains Kazuya Kage,

Supported by industry giants, Nippon Steel and Sumitomo Corporation, to help transition its operations away from pure coal to the production of coke (a by-product of coal) the company has since successfully diversified into other areas such as fuel sales, engineering and environmental services. As a company engaged in the manufac-

In Japan, coal was the dominant President of Nippon Coke & Engibatteries), Mr. Kage says companies energy source for much of the neering, which was founded in 1889. like his have "a big responsibility" to address the climate crisis. "It goes without saying that coke plants must address the emissions that they release. Minimizing the effects on the environment and local communities is something that is very important for our company," he stresses. "More than this, what we should do is to be proactive and do things that will really address the environmental issues moving forward, and one aspect of that is our pursuit of hydrogen as a greener and cleaner fuel. I believe that we have a huge responsibility ture and sale of carbon-emitting to change society's view of busifuels (it also has a recycling business nesses such as ours. This is not an that reuses its waste products and is easy task for our heavy industry, now providing machines manufacbut we must work cooperatively turing materials needed for lithium in order to make that a reality."

Everloy: The undoubted leader in customized nozzles

Based on its long-cultivated know-how and industry-leading technology, Everloy develops specialized spray nozzles

items," explains Keiro Fujiwara, President of Everloy. Drawing on its industry-leading technology, the company creates customized products such as its descale nozzle,

ity." Major steel companies entrust the development of their descale nozzles to Everloy due to the company's vast experience and knowhow, which enables it to meet even the most stringent customer needs. Everloy's latest descale nozzle, the DNEX, allows customers to reduce the amount of water in their descale process by approximately 40%. Various kinds of demands are also





Having earned an 80% share of the Japanese market for its highly reputed descale nozzles, Everloy is now looking to expand into emerging markets like those in Southeast Asia and India. "Our future management vision is based on the idea that creating value benefits our customers and society by contributing to technological progress," concludes Mr. Fujiwara.



"Our strength is our ability to customize products based on the customer's requests"

> Keiro Fujiwara, President, Everloy



www.everloy.co.jp/english/





www.n-coke.com/en