The End of the Two-State Solution?

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HOW THESE FIVE PLACES ARE **LEADING THE WAY** TO A GREENER WORLD

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Japan's *monozukuri* ready to shine once again

Global events such as the covid-19 pandemic, the war in Ukraine and the U.S.-China decoupling have forced companies to rethink and diversify their supply chains as they seek more reliability. Japanese firms are known for their reliability and advanced technology, and thus are in an interesting position due to the weakened yen, with observers believing this is a very unique opportunity for Japanese *monozukuri* to shine once again.

"The covid-19 pandemic and U.S.-China decoupling have created chaos for overseas companies. However, Japanese companies have previously experienced similar disruptions caused by events like the Lehman Shock and the burst of the economic bubble," says Yoshinori Abe, President of EIWA Corporation, a trading firm specializing in inspection, measurement and analysis equipment. "These experiences have led Japanese companies to develop countermeasures to navigate such challenges, while the depreciation of the yen has prompted many companies to relocate their production bases back to Japan."

Monozukuri – the manufacturing philosophy focusing on craftsmanship and constant innovation – is another factor that sets Japanese companies apart from regional competitors. "At the heart of Japanese *monozukuri* lies a commitment to achieving the highest levels of quality and reliability," states Naoki Matsumoto, President of Matsumoto Kosan, a manufacturer of high-precision parts for the automotives, medical and telecommunications industries. "Japan's unwavering dedication to producing one-of-a-kind, top-notch products has garnered significant global recognition, exemplified by the success of products like the iPhone [which is made up of many Japanese parts]. When global companies meticulously compare and evaluate products from Japan, China, and India, they consistently choose Japanese offerings for their exceptional quality and reliability."

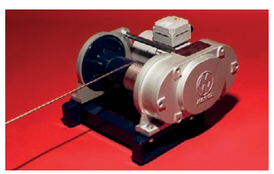
Also important to the Japanese manufacturing philosophy are the concepts of *gemba* and *kaizen*, as highlighted by Nobuo Okita, President of Okita Iron Works. "*Gemba*, which is a Japanese word that translates to 'the place where action happens', combines quality control, customer satisfaction, and corporate culture into a melting pot symbolizing Japanese workplaces. Regarding the capabilities of *gemba*, I think that the Japanese people are very good at pursuing improvements, under the *kaizen* philosophy of continual improvement. In terms of quality control, Japanese people tend to raise the bar for quality further than any other country on the planet, beyond any standard criteria required."

One focus of Maintech's *monozukuri* is its Dryer Section Passivation (DSP) Technology for paper manufacturing, which the company aims to make the global standard in line with its ambition to expand internationally. "We have some competitors in the U.S. and Europe who just copied our technology. However, their chemical performance is not so good. Right now, we have over 800 applications across the world. We plan to increase the figure in Asia, Europe and North America and expect to reach the 1,000 mark in a few years," says company president Hiroshi Sekiya. "With the expansion of the e-commerce business, the demand for corrugated packaging has been increasing worldwide and is expected to increase by 24.5% in the next 10 years. In the U.S. quite a few paper machines have converted from printing and writing grades to paperboard. I believe that this global trend will definitely give us many opportunities to expand our DSP business worldwide."

One of the world's leading high-tension washer manufacturers, Ono Manufacturing is also expanding its international presence and plans to better serve the North American market with the establishment of a new manufacturing facility. "Producing washers in the U.S. is one of my personal dreams and it is finally coming true," says chairman Mamoru Ono. "We are aiming for mass production that meets American standards. The first step is to bring new AIDA press machinery, and currently, we are planning on bringing just a single washer. This is because there is no equivalent machine in the American market. We will use this AIDA press machine to produce products that meet U.S. specifications."

Harnessing 3D tech to the Max

A specialist winch manufacturer, Maxpull is using CAD technology to provide an enhanced customer experience.



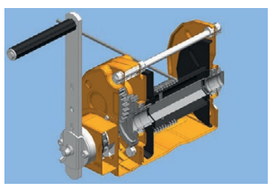
New BMW-Air series with many advantages

The Japanese manufacturer Maxpull has made it easier than ever for customers to get the full lowdown on its world-class industrial winches.

Visitors to the company's website can now peruse 3D, interactive CAD representations of its winches, with both exterior and interior views of products. Created using Fujitsu's iCAD platform, the cutting-edge feature also allows graphics to be downloaded on files compatible with a range of design software.

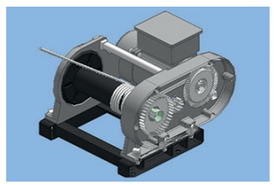
"This epoch-making system enables you to easily and intuitively view and operate 3D data on a smartphone, tablet or PC," says Maxpull's president, Koichi Ono. "Our sales staff can easily explain the winch's internal structure without bringing the actual machine to the customer and disassembling it on the spot."

Accessing the new tool requires no prior registration, Mr. Ono adds: "We felt that for true user-friendliness, we needed to cut out the time spent logging in or signing up before obtaining product data."



Industry-first feature with 3D views of the winch

Among Maxpull's wide variety of winches, a stand-out item is the updated BMW Single-Phase 100V. Boasting enhanced compactness, it can be installed in narrow spaces; in addition, the winch now has a longer continuous operating time. "Since its launch last year, sales have been steadily increasing," Mr. Ono reveals.



CAD files compatible with a wide range of design software

Such expertly-crafted products have made Maxpull a domestic leader – and the company has a growing global reach, too, aided by its presence on the French online B2B marketplace Virtual Expo and its participation in international trade fairs in several countries. Furthermore, it is preparing to hold its own exhibition, in an online-offline format.

"We aim to make this service easily accessible for customers."

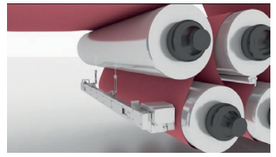
Koichi Ono, President, Maxpull Machinery & Engineering Co., Ltd.

"With the pandemic, the culture has changed from offline to online," Mr. Ono says. "However, if the information you need requires all five senses, an online exhibition isn't ideal. What's more, on-the-spot negotiations can be slower. That's why we're planning a hybrid exhibition in which we select and invite visitors interested in an online event to attend in person as our main target."

MAXPULL WINCH
www.maxpull.co.jp/english

Maintech working with clients to create platform for the future of eco paper-making

Maintech aims to ensure its Dryer Section Passivation (DSP) Technology becomes the global standard in recycled paper and paperboard manufacturing.



DSP applied to dryer cylinder

While the recycling business is generally perceived as an industry that was established and has grown over the past few decades, Japan has in fact been a leader in papermaking and recycling for some 300 years.

Japanese paper production has been consistently among the top five in the world, while recycled paper accounts for two-thirds of the raw materials used to produce new paper and paperboard products in Japan. Against this backdrop, Maintech, which supplies solutions to improve the productivity of paper mills and the quality of recycled paper, has shone. The company now aims to expand its DSP (Dryer Section Passivation) Technology globally.

"Japan is a global leader when it comes to paper recycling. Moreover, I believe Japan will continue to be a leader. The paper recycling business was established here in Japan in the Edo era," says Maintech president Hiroshi Sekiya. "Therefore, the paper recycling culture has been historically rooted in the Japanese lifestyle for more than 300 years. I believe that the recycled paper utilization rate will continue to be high." Maintech's DSP technology can be mainly used and particularly beneficial in producing paper products using recovered paper.

The paper machine consists of three main sections: the forming section, the press section, and finally the dryer section, where the wet paper sheet is dried with steam-heated cylinders. DSP is used in the dryer section, helping to prevent deposition from building up on the paper machine (dryer cylinders, dryer fabrics) surface due to unwanted materials and substances, such as packing tape, labels, ink, etc., present in the recovered paper.

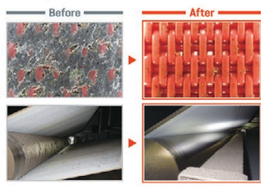
"Paper can often have several defects due to this deposition. When it comes to the use of paperboard at cardboard-making factories, any paper with a defect size of over 10mm is never accepted because it would ruin the appearance of the cardboard box," explains Mr. Sekiya. "Therefore, the paper machine operators must eliminate the production of defective paper in the mill before shipping. This defective paper often goes back to the pulping process as raw materials, which reduces productivity and requires more energy to manufacture the same amount of paper. This is the main reason why most of the recycling paperboard mills have introduced our DSP in Japan."

"We have sold over 800 units across the world. We plan to increase that number in Asia, Europe and North America."

Hiroshi Sekiya, President, Maintech Co., Ltd. **https://maintech.co.jp**

Dryer Cylinders

Dryer Fabrics



"In Asia and Europe, they have been introducing cutting-edge paper machines which can run at high speeds, running almost twice as fast as Japanese equipment," adds the Maintech president. "Therefore, even small deposits on the paper machine can cause sheet break problems down the line and reduce productivity. This is one of the reasons why our DSP sells so well outside of Japan." Utilization of DSP, therefore, can ensure reduced energy consumption, improved paper quality, increased productivity and savings on labor costs. It's no wonder then that DSP has already proved popular among paper mills worldwide.

Having secured a 100% share of the domestic market and market shares of between 60 and 70% in China and regions of Southeast Asia, Maintech's goal is to expand its DSP solutions in Europe and North America. While cracking these markets can be difficult for a relatively unknown Japanese SME, Maintech has started to make headway thanks to a growing reputation on both sides of the Atlantic and has now sold more than 50 units of DSP in the U.S. and Europe. "Though there are some U.S. and European competitors, comparative tests to date have proven that our authentic DSP technology with the highest track record is the most cost-effective solution," says the company president. "Right now, we have sold over 800 units across the world. We plan to increase that number in Asia, Europe and North America and expect to reach the 1,000 mark in a few years."

To ensure the same quality of service as in Japan, Maintech also provides equipment maintenance services and technical services in China, Europe, and the U.S., having an office in Dusseldorf to serve European clients, a subsidiary company and five offices in China, while its new office in Atlanta is set to open this year to cater to a growing base of customers in North America.

Moreover, Maintech has also developed Smart Papyrus. This system has been developed using sensing IoT to digitize deposit levels on the paper machine and AI technologies to manufacture recycled paper more efficiently and effectively. The Smart Papyrus Ver.1, offering a surveillance camera to watch dryer section deposition and a DSP chemical dosage management system, was followed by the recently launched Smart Papyrus 1.0, which boasts a defect categorization system. "Our Smart Papyrus Ver.1 focuses on the dryer section, while Smart Papyrus 1.0 categorizes the defects," Mr. Sekiya adds. "When we analyzed the defects, we realized that the dryer section was in perfect condition thanks to our DSP. Most of the defects came from other parts. That is why we have expanded our field to the press section and the forming section as well as the wet-end section." Currently under development, Smart Papyrus 2.0 will come with a more sophisticated system to anticipate defect generation not only in the forming press and dryer sections but also in stock preparation (paper material process), using Big Data and IoT.

Looking towards the longer-term future, Mr. Sekiya reveals, "Right now, our DSP is just an Asian standard. My first goal is to expand our DSP business worldwide and to make it the global standard for recycled paper manufacturing. My second goal is to develop our Smart Papyrus technology with our customers to create a platform for the future of eco paper-making."