Sanlian Hope
Powering smart manufacturing with AI

Sanlian Hope develops technology and equipment for the production of synthetic fiber and its raw materials to other manufacturers in China. Alongside a digital data-driven platform designed to converge its finances, technologies, and data, the company's Director and Investment General Manager Zhang Minzhe believes that AI technology, powered by Huawei Cloud, brings production flexibility and will accelerate the company's shift to smart manufacturing.

By Xu Shenglan, Xue Hua

New opportunities

As a branch of the textile industry, synthetic fibers are perhaps more prevalent than we think, as the natural fiber content in most silk and cotton products is actually very low. "That's because natural fiber has been impacted by the increase in the area of cultivated land," explains Zhang. "Output is low and the production methods are highly polluting. Synthetic fiber offers advantages in these two regards, which is why demand has increased."

The US company DuPont invented synthetic fiber in the 1930s. From its origins, the burgeoning industry soon made its way to Europe for production, before setting sail for Japan and then Taiwan. With its complete supply chain, Taiwan soon emerged as the global heavyweight in the

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industry. To ship materials to South Korea, for example, Zhang recalls that Taiwan's turnaround was just two days, compared with two weeks from either Japan or the US. Taiwan's mature and optimized supply chain ensured very high response efficiency coupled with excellent product quality.

Today, China perhaps unsurprisingly accounts for 50 percent of the world's synthetic fiber production. According to Zhang, "Because demand in China is vast, its production soon evolved to be the largest, most efficient, and most advanced in the world." China's late-stage advantages in production capacity have historically compensated for the lack of supply chain coordination. Technology is changing that. China shaped the two major directions of future development in the industry. "The first is industry chain synergy. After synergy is achieved, international competitors can easily be outpaced," says Zhang. "Second, healthy growth and world-class competitiveness in supply and demand will encourage integrated solutions."

Intelligence means flexibility

While Sanlian benefits from a very high standard of core technology that boosts production efficiency for its customers, entry barriers to the industrial Internet are very high, requiring a deep understanding of the technologies and business models that power the

industry. Zhang believes that, "Correctly understanding a customer's correct requirements is actually more difficult than meeting those requirements later on."

He goes on to say that, "Huawei may face this confusion when it enters this industry, because customer requirements are random. Order is disrupted. And there's no differentiation in difficulty. Moreover, most customers don't know how to utilize data to tell you what you need to do to help, or what they need to provide." This, Zhang adds, causes a huge waste of resources.

So, what's the answer? "I believe that cooperating with an engineering technology service company, such as Sanlian Hope, is a good decision," he says. "We own synthetic fiber technology and power production lines. We serve customers at all levels of the industry and have real service capabilities that can help Huawei respond to different customers. As such, Huawei only needs to build a good platform and provide a universal solution. It won't need to be directly entrenched in the enterprise. So it's a good decision to work with Sanlian Hope."

He's positive about Huawei's focus on developing a healthy ecosystem based on infrastructure, rather than trying to occupy all links in the value chain, and also supports Huawei's pledge not to commercialize customers' business data. "Our service is provided on the premise that we ensure the security of

all channels, enabling efficient production for our customers and information security for upstream and downstream players," says Zhang.

AI in action

Huawei's full-stack, all-scenario AI solution supports IoT and AI technologies in both hardware and software. That, Zhang believes, makes Huawei an excellent system integration partner. Sanlian Hope has installed Huawei's AI-powered chip in its control systems, "Huawei has helped us quickly realize digital and intelligent transformation."

Partnerships for E2E success

Huawei's many suppliers and system integrator partners add to its pull. In Zhang's words, "This gives us the chance to find technology partners to help the synthetic fiber industry solve the problem of digital transformation. We're enjoying excellent collaboration with Huawei Cloud and the Enterprise EI team."

When working with system integrators, Sanlian Hope has found that one key problem is the lack of production-related data that's ready for data analysis — an issue that plagues manufacturing as a whole, and one that requires partners to quickly and efficiently work together to adapt data.

Sanlian Hope expectations of Huawei is that it delivers industry insights. In turn, Sanlian Hope needs to change how it expects to add value from data, adjust the way its control systems collects data, and maximize the value of analytics — changes that it's already making.

According to Zhang, "Because we're in process-based manufacturing and the production lines are automated, we tend to receive high-quality data. So we can really extract value and increase production capacity." Previously, manufacturing was all about Six Sigma and process optimization. "But by bringing data into it, we're able to use accurate data to identify different situations in large-scale production and adjust production. This kind of flexibility can't be matched by humans."

In data collection, dimensions and frequency are crucial. Machine data collection can be performed at a frequency of seconds or milliseconds, compared with the metrics of human data collection whereby a scale of minutes is considered to be very good. According to Zhang, "Aside from dimensions, an explosive increase in frequency allows for real-time, more precise, and more flexible control. This is what we want to achieve with Huawei. And we hope to promote the results of our cooperation in the industry."

Intelligence means progress

In China's synthetic fiber industry, production capacity has increased from 5 million tons in 2000 to 40 million tons today.

"In the new era, digitalization and intelligence will help us utilize the experience of the industry. It will bring huge opportunities for development, and play a very important role in taking us into the future," says Zhang.

In the past, the synthetic fiber industry's unified standards system developed as far as it could go. Looking to the future, requirements will only become more segmented and complex. How do we face these changes? Personalized and small-batch production runs coupled with digitalization and intelligence are ways of increasing flexibility, so that different situations can be categorized and production plans formulated.

"When responding to the needs of the more complex and more varied requirements of downstream industries in the future," says Zhang, "We need to be prepared to provide support using technological approaches such as AI." ⬛