

Creativity + Success: The winning formula from Swiss Textile Machinery Manufacturers

The future is arriving fast, as Swiss companies focus on the plus factors for their customers: Pioneering new applications and practical technology solutions.

This special article is one of a series focusing on the five FACTOR+ advantages of Swiss textile machinery companies. Swissmem, the sector's representative body, has devised the FACTOR+ concept to spell out exactly what makes its member firms so successful in every major textile end-use and all the main geographical production centers.

Cornelia Buchwalder, General Secretary Swiss Textile Machinery Association within Swissmem, says: "The Swiss textile machinery sector is founded on a strong innovative power and unmatched quality – as well as the creativity to solve customer challenges and focus on mutual success."

The 'Creativity + Success' factor reports presented here outline how selected Swissmem members have used their global strengths and technological expertise to develop ground-breaking customer benefits.

IMAGINE a garment label which can communicate using radio waves, interacting with manufacturers, retailers and customers...

...a weaving system which produces 3D fabrics for aircraft...

...or a tiny plastic tube that halves energy use on a spinning machine...

It takes a special kind of creativity to turn those imaginings into fact. A creative impetus born out of technological expertise, a bold innovative spirit and out-of-the-box thinking. Switzerland is where those concepts became reality: developments by world-leading textile machinery companies Jakob Müller, Stäubli and Rieter which exemplify how the 'traditional' values prized by Swiss companies are the launchpad for future-oriented innovation.



Swissmem's Cornelia Buchwalder: "Swiss textile machinery sector has the creativity to solve customer challenges and focus on mutual success."

This creative power itself breeds success in the highly-competitive, globalised business environment of modern textiles, evidenced by repeated sales triumphs such as Benninger's novel energy-saving finishing systems in the crucial Chinese market and the global acknowledgment of Uster technology as the major in-process solution for yarn quality assurance. Again, these success stories, and others from the Swiss textile machinery sector, can be traced directly to the creativity fostered in the individual companies. The national identity plays an important

part here: customers of Swiss manufacturers expect high standards, in quality and durability, after-sales support and detailed product and market know-how. And, as a relatively small country with a limited domestic market for textile machines, Switzerland has of necessity developed a global outlook, through which its textile machinery producers have seen market success and innovative acclaim reaching a level beyond any reasonable expectation. 'Creativity + Success' neatly expresses the essential factor behind this ongoing achievement.

CREATIVITY: intelligent labels

Jakob Müller is a long-established market leader in machinery for narrow fabric production – a relatively mature segment in which progress is often incremental. However, Müller in the 21st Century is not afraid to take on a challenge that is very obviously revolutionary – although rooted in the firm's inherent technical expertise.

Textile RFID labeling is a new and exciting technology which opens up new possibilities from manufacturing to retail – and on to the final consumer. RFID (radio frequency identification) uses wireless electromagnetic fields to capture and transfer data and Jakob Müller subsidiary TexTrace has pioneered its application in woven labels. Its development and current market fruition is testament to the strong creative force within the company.

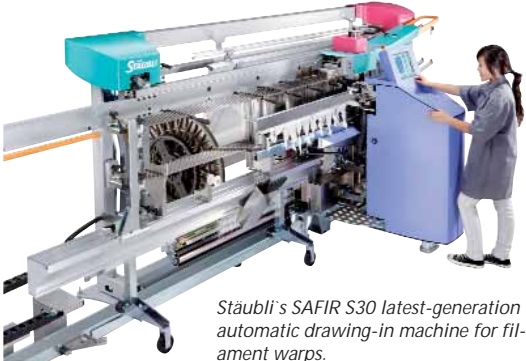
Says Jakob Müller CEO Martin Buyle: "We realize this is a completely new area, so the message is quite tough to get across," he says. "But we regard this as an exciting and innovative future option, so we are ready for the challenge of making it work in a way that will convince the wider market."

With RFID labels sewn into a garment, bag or accessory, product information is coded securely throughout the manufacturing and retail cycle. The possibilities are virtually endless, covering ERP, traceability, proof of authenticity, anti-theft, tracking and accurate stock control. At retail, customers can be offered an enhanced shopping experience, with interactive features such as automatic and instant matching of clothing items, and guidance on related selections.

The product comprises a sewn-on label containing an RFID chip beneath a protective pad, with a specially-made, high-performance yarn which is interwoven during the label weaving process and forms the required antenna. Industry uptake has already started, and Müller sees the potential as virtually limitless.



Front and rear views of a textile RFID label produced by Jakob Müller subsidiary TexTrace.



Stäubli's SAFIR S30 latest-generation automatic drawing-in machine for filament warps.

CREATIVITY: new dimensions in technical fabrics

Aerospace and textiles. A combination which would probably not come immediately to mind? Stäubli has other ideas, as do a number of other Swiss textile machinery companies now actively providing manufacturing solutions for this most technically-demanding of industry sectors.

Stäubli is already a major player in the 'conventional' textile world of shed-formation and weaving preparation technology, with an unrivaled track record of market success. Innate creativity has extended its reach into dramatically different fields. Robotics is one, now handled by a separate Stäubli division, but the company's textile operation, headquartered at Sargans, is also flexing its creative muscles. Drawing on existing



The Alpha Leantec machine from Stäubli, combined with the Unival 500 dobby for the production of 3D technical fabrics.

expertise within the group, including the Stäubli Schönherr carpet-making activity, the demand for three-dimensional fabrics for specialized technical textiles end-uses has been a key driver of progress.

The Alpha 400 Leantec is an example of this progress. Born out of the woven carpet machines, it also draws on Stäubli's Unival servo-control dobby to produce multilayer fabrics in 3D. Suppliers to aircraft makers need to observe the toughest standards of quality and consistency to win and retain orders, so this machine has been precisely engineered to guarantee top performance. The key is precise control of warp threads in each fabric layer, to ensure a carefully-structured fabric which meets the requirements of final customers in aircraft manufacture. An optional Multi Weft Selector broadens its scope further by allowing insertion of multiple different wefts at the top and bottom fabric.

Quantum leap technology is also marketed through Stäubli's latest generation of automatic drawing-in machines, SAFIR S30. A tenfold performance increase in preparation of filament warps is achieved in industrial operation.

"Active control of warp and weft is an important feature of latest Stäubli innovations across all our product ranges," states marketing and sales VP Fritz Legler.

CREATIVITY: Energy saved in spinning

How to save energy? It's a major headache for textile producers worldwide. Both the cost and actual availability of power is problematical, depending on the market area, and it is clear that creative thinking is needed to provide solutions that give practical help to the mills.

Rieter, one of the world leaders in textile yarn technology, has responded



Rieter's suction tube ECORized offers greater energy efficiency in spinning.

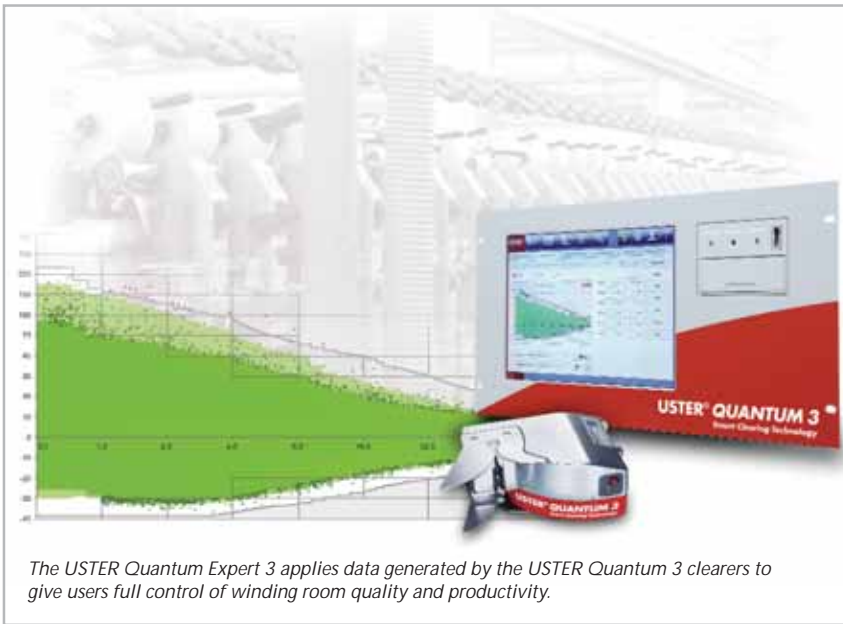
with an innovation that is physically small but with a potentially enormous impact on spinning costs. The suction tube ECORized is an ingenious, yet simple invention. In ring spinning, suction tubes are a constant drain on power, yet are 'in action' only sporadically, to clear tangles and remove ends-down.

With a single piece of creative thinking, Rieter specialists came up with a tube with a closed flap, which opens – and therefore consumes energy – only when an excess of material is presented by the drafting system, indicating a problem. Suction tube ECORized is the name of this breakthrough product, and it means each spinning position needs 50% less energy, if conventional tubes are replaced with the ECORized type. With an adjustable inverter control, the suction tubes ECORized can be optimized for energy savings and process efficiency, as many of Rieter's spinning mill partners are already discovering.

Says Edda Walraf, Vice-President Technology & Marketing for Rieter Spun Yarn Systems: "ECORized conversion can offer payback within a year, after which the full impact of the energy savings will kick in."



Artificial turf – a product which is gaining rapid acceptance for sports fields – is produced on the Alpha Leantec machine from Stäubli.



The USTER Quantum Expert 3 applies data generated by the USTER Quantum 3 clearers to give users full control of winding room quality and productivity.

SUCCESS: optimizing of quality data

With sales totaling over half a million, Uster Technologies already has a proven market success with the latest USTER Quantum 3 yarn clearers, providing in-line fault detection and quality control in automatic winding after ring spinning. But the company was keen to extend the functionality of the yarn clearing process, as well as offering users a simple, quick and effective way to apply clearer data to achieve genuine quality and productivity benefits.

Naturally, there was a creative impetus at the heart of the next development, responding to, and amplifying the market success of the clearers. The new-generation USTER Quantum Expert 3 gives users full control of their entire winding operation, including, as the name suggests, 'expert' guidance with a whole range of spinning mill decision-making.

USTER Quantum Expert 3 takes maximum advantage of the data generated by the USTER Quantum 3 clearers, turning the data into clear advice on essential quality and cost issues. Innovative features such as the 'Yarn Body' concept – an instant view of any potential faults – and a focus on identifying single rogue bobbins, or outliers, help spinners to adjust yarn clearer settings to reach an optimum balance between fault removal and keeping machines running at a productive rate.

USTER Quantum Expert 3 shows all this in an easy-to-view format, with remote access when required. Feedback from spinners suggests that the partnership between clearers and expert system helps them produce exactly the right yarn quality their customers demand, without adversely impacting on the mill's profitability.

SUCCESS: Chinese investment in novel finishing system

Success in textile machinery today is often judged by a company's impact in the Chinese market, the biggest potential customer in many processing branches. That

is what makes Benninger's work with Guangdong Esquel Co. especially significant. One of China's – and the world's – largest textile and clothing producers, Esquel has underlined Benninger's credentials in open-width finishing of knitgoods by investing in a complete range. Dyeing and bleaching, as well as washing and mercerizing technology for knitwear are now installed at Esquel's Gaoming plant, making it the first Chinese customer to operate a total Benninger system for knits.

Benninger developed the Trikoflex technology in response to customer demands for significant savings in both water and steam consumption. Specially-designed rollers, controlled fabric tension and novel washing compartments enable the system to process at maximum washing efficiency. These creative innovations have taken the finishing of knitted fabric in open-width format to a new level.

The result is 50% lower energy use than with conventional exhaust processing equipment. Quality benefits are also reported, with improvements in dimensional stability, hairiness and fastness levels.

"Sustainability and energy savings are very important to Esquel, so the choice of the Trikoflex washing range is ideal," says Benninger CEO Gerhard Huber. Esquel uses the Trikoflex range for soaping after jet dyeing and washing after cold pad-batch processes, as well as for softening and finishing. ♦



Benninger's Trikoflex takes the finishing of open-width knitgoods to a new level.