Global shipments of new short-staple spindles and open-end rotors increased by 1.5% and 13% in 2018, respectively. The number of shipped draw-texturing spindles rose by 50% and deliveries of shuttleless looms improved by 39%. Shipments of long-staple spindles, circular knitting machines, and electronic flat knitting machines decreased by 27%, 4% and 20%, respectively.

In the finishing segment, the sum of machines shipped worldwide in the category "fabric continuous" and "fabric discontinuous" fell by 0.5% and 1.5% year-on-year, respectively. These are the main results of the 41st annual International Textile Machinery Shipment Statistics (ITMSS) released by the International Textile Manufacturers Federation (ITMF). The report covers six segments of textile machinery, namely spinning, draw-texturing, weaving, large circular knitting, flat knitting and finishing. The 2018 survey has been compiled in cooperation with more than 200 textile machinery manufacturers representing a comprehensive measure of world production.

Spinning machinery
The total number of shipped short-staple spindles increased by about 126,000 units to a level of 8.66 million. Shipments increased for the second consecutive year, but the global trend slowed down. Most of the new short-staple spindles (92%) were shipped to Asia and Oceania where delivery decreased by 2%. The most dynamic destinations recorded in 2018 were Korea, Turkey, Vietnam and Egypt with increases of 834%, 306%, 290%, 285%, respectively. The six largest investors in the short-staple segment were China, India, Uzbekistan, Vietnam, Bangladesh, and Indonesia.

Global shipments of long-staple (wool) spindles decreased from 165,000 in 2017 to nearly 120,000 in 2018. This effect was mainly driven by a drop in deliveries to Asia and Oceania (-48,000 units). This region remained the strongest destination for this type of machinery but deliveries to China and Iran dropped by 60%. The biggest investors were Turkey, Iran, China, Italy, and Vietnam. Some 721,000 open-end rotors were shipped worldwide in 2018. This represents an increase of 83,000 units compared to 2017. Ninety-one percent of global shipments went to Asia and Oceania where the share to total deliveries improved by 20% to 120,000 rotors. However, China, the world's largest investor in open-end rotors, increased its investments by 7% in 2018 while deliveries to Thailand, Malaysia, and Egypt rose by over three times.
Texturing machinery

Global shipments of single heater draw-texturing spindles (mainly used for polyamide filaments) increased by 48% from nearly 15,500 in 2017 to 22,800 in 2018. With a share of 91%, Asia and Oceania was the strongest destination for single heater draw-texturing spindles. China and Japan were the main investors in this segment with a share of 68% and 11% of global deliveries, respectively. In the category of double heater draw-texturing spindles (mainly used for polyester filaments) the positive trend continues and global shipments increased by 50% on an annual basis to about 490,000 spindles. Asia’s share of worldwide shipments grew to 93%. Thereby, China remained the largest investor accounting for 68% of global shipments. Surprisingly, India’s investments in texturing spindles dropped after 2011, after peaking to 90,000 units in 2011. Today, imports of texturing spindles are around 10,000 units.

Weaving machinery

In 2018, worldwide shipments of shuttleless looms increased by 39% to 133,500 units. Thereby, shipments of airjet and waterjet looms increased by 21% to 32,750 and 91% to 69,240, respectively. The deliveries of rapier/projectile looms dropped by 5% to 31,560. The main destination for shuttleless looms in 2018 was Asia and Oceania with 93% of all worldwide deliveries. Ninety-two percent of all waterjet looms, 83% of all rapier/projectile looms, and 99% of all airjet looms went to that region. The main investors were China and India in all three categories. Deliveries of weaving machines to the two countries reached 81% of total deliveries. Turkey and Bangladesh further played an important role in the rapier/projectile segment with a combined 18% of global shipments.

Exports to Turkey show a strong growth trend since 2009. From near zero levels in 2009, Turkey’s imports of shuttleless looms went up to 3000 units in 2013, and are currently at around 4000 units.

Bangladesh too is investing in its primary textile sector. With the result that its imports of shuttleless looms has been going up after a dip in 2011 and 2012. In 2015, Bangladesh imported around 8000 shuttleless looms. However, imports have slowed down, and in 2018, stood at around 4000 looms.

Circular and flat knitting machinery

Global shipments of large circular knitting machines fell by 4% to 26,300 units in 2018. Asia and Oceania was also the world’s leading investor in this category with 85% of all new circular knitting machines shipped to the region. With 48% of worldwide deliveries, China was the largest investor. India and Vietnam ranked second and third with 2,680 and 1,440 units, respectively.

In 2018, the segment of electronic flat knitting machines decreased by 20% to around 160,000 machines. Asia and Oceania was the main destination for these machines with a share of 95% of world shipments. China remained the world’s largest investor. The country kept its global share of 86% of worldwide shipments despite a decrease in investments from 154,850 units to 122,550 units.

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washing (stand-alone), singeing line, relax dryers/tumblers, stenters, and sanforizers/compacters increased in 2018 by 58%, 20%, 9%, 3%, and 1%, respectively. Deliveries in the other sub-segments decreased. In the category "fabrics discontinuous", shipments of airjet dyeing machines increased by 16% and deliveries of overflow dyeing and jigger dyeing/beam dyeing machines fell by 7% and 19% respectively.

Trends during ITMA 2019
Visitorship from India remained high, especially in spinning and related segments. Investments in India’s spinning sector have slowed down, but are expected to pick up significantly over the next few years.

There were many visitors from Vietnam. Vietnam is going strong in its investments - not just in garment but also in the primary textile sector. Interest was especially high in spinning technologies.

The current uncertainty in the US-China trade relations kept many Chinese visitors away. The current thaw in US-China relations could see a spike in interest and orders during the next ITMA Asia in Shanghai.

Uzbek textile entrepreneurs were present in large numbers, scouting for textile manufacturing technologies. The Uzbek government has identified textile and clothing industry as a growth engine, and is supporting its development. The industry is further helped by Chinese investments. China’s Belt & Road Initiative is already bringing in benefits for the Uzbek industry and economy. Investments in the textile industry will continue to grow in the coming years.

Future trends
According to ITMF, China will remain an important player in the textile and apparel manufacturing space. While production costs in China are rising, they are still quite competitive. Labour cost is less than US$ 1 per unit of apparel.

While labour costs from 2005 to 2017 have increased by around 44%, apparel production during the time increased by 62.5%. China’s productivity per person went up by around 67% from 2005-2017. And apparel manufacturers’ revenues went up by 72% during the same period. So, it still remains profitable for Chinese entrepreneurs to remain in the textile business. China, as we know, is moving up the value chain, and is also an important textile technology manufacturer today. If the BRK is even partly successful, logistics costs for China and its suppliers would reduce significantly.

Meanwhile, domestic textile consumption in Asia’s leading markets is growing fast, and domestic players will invest to meet the growing local demand.

It looks like that in China, textile fibre consumption was 20.1 kg per capita, which is expected to grow to 29 kg per capita by 2030. In India, textile fibre consumption in 2017 was as low as 5.8 kg per capita. This is expected to reach 6.3 kg per capita in 2020, and 8.2 kg per capita by 2030. The world average in 2017 was 12.5 kg per capita, going up to 15.2 kg per capita by 2030.

In Europe, in 2017, textile fibre consumption was 22.4 kg per capita, which
will go up to 29 kg per capita by 2030. And in North America, per capita textile fibre consumption was 32.6 kg in 2017, moving up to 34.1 kg per capita by 2020, and 36.5 kg per capita by 2030. 

Textile fibre consumption in China will grow the most - by 44% - during 2017-2030. India’s fibre consumption during the period will grow by 41.38%. While fibre consumption in Europe and North America will increase by 29.46% and 18.10% during the period.

This will be supported by the strong growth in GDP per capita, both in India and China. According to the ITMF report, India’s GDP per capita will grow by 53.5% from 2018 to 2023, while China’s GDP per capita will grow by 50.5% during the same years. In comparison, GDP per capita growth in Europe will go up by 2% to 2020.

Textile technology developers will need to look at these trends to offer better solutions here.

GDP per capita growth in Sub-Saharan Africa will be 37.1% during the period.

An analysis of fibre production preferences shows that polyester will remain the fibre of choice. According to the ITMF report, global polyester (filament) fibre production is expected to increase by 11%, from 35.49 million tons in 2017, to 39.28 million tons in 2020. Polyester staple fibre production will increase by 5% during these four years -from 16.76 million tons to 17.58 million tons.

Cellulosic fibre production will grow significantly during this period. Cellulosic staple fibre production will increase 19% to 5.10 million tons, and cellulosic filament fibre production will go up by 10% to 0.29 million tons by 2020. Nylon filament and staple fibre production too are estimated to show strong growth of 14% and 11% during the period. Cotton fibre production will go up by 2% to 2020.

Textile technology developments

This ITMA saw the unveiling of many revolutionary textile technologies across all segments. Industry 4.0, interactive machines, data analytics, higher levels of automation and digitalization, were the basis of all new development. Also, the focus is very much on sustainability and rationalization. The trend is certainly towards forcing mills to become more efficient, ensuring high and consistent levels of quality and productivity, predictive maintenance.

While textile processing and finishing is getting greener, developments in digital printing could significantly reduce the industry’s carbon footprint. Digital printing technology providers are focussing on increasing printing capacities to suit bulk printing needs. This would mean lower printing costs, resource savings, and higher productivity.

We take a look at some of the interesting developments showcased at ITMA 2019, by four textile technology providers.

Oerlikon debuts new eAFK Evo texturing machine

Oerlikon’s new eAFK Evo texturing machine, which was unveiled to selected clients at the ITMA trade fair in Barcelona, has proven to be a breakthrough in the manufacture of yarns. This is evidenced by leading global yarn producer, Unifi Manufacturing, Inc., who placed a significant order for these revolutionary machines on the first day of the trade fair.

Unifi collaborated with Oerlikon to develop a specially-designed eAFK Evo pilot machine that has been operating for the last eight months, using it to manufacture various Unifiber virgin and REPREVE®-branded polyester and polamide yarns. Unifi has obtained exclusive rights in the Americas to their unique design, which enables the new machine to operate at considerably higher texturing speeds, delivers consistently high-quality yarn across a broad range of products, and enables new, innovative performance yarns.

Cost-efficient production, reduced energy consumption

Oerlikon also exhibited a configuration of the eAFK Evo texturing machine at ITMA, designed for the cost-efficient production of commodity yarns. At just 4.7 metres in height, the compact machine still comes with a four-deck winding system. The most important foundation for both machines is the 300-millimetre-long EvoCooler with its active cooling technology.

The EvoCooler’s controllable cooling unit opens a huge production window, with titer ranges from around 30 to 300 denier and including microfilaments; combining it with the EvoHeater increases texturing speed by about 20%.

The EvoCooler also enables extremely even yarn dyeing and provides significant benefits using no additional energy compared to current offerings. With the optimised, extremely energy-efficient EvoHeater and its connected peripherals, the machine offers up to 25% energy savings.

Digital textile printing excellence

Digital textile printing pioneer, Epson unveiled its...
new Monna Lisa Evo Tre range and new Genesta pigment inks at ITMA 2019, demonstrating the latest Epson innovations for an evolving digital textile market.

The new Monna Lisa Evo Tre range features Epson Precision Core Technology to offer a complete solution for all textile market needs, from large scale, high speed production to small run, on demand sample printing. At ITMA 2019, Epson showcased its new Monna Lisa Evo Tre 64 and Monna Lisa Evo Tre 8, as well as its Monna Lisa Evo Tre 32 (displayed in the 16 channel configuration) and Monna Lisa Evo Tre 16.

Genesta PG-Revo are breakthrough pigment inks which provide the textile market with high rub fastness and high print quality. This assures eco-friendly performances because the fabric does not need any post-print treatment.

Monna Lisa Evo Tre 64 - Top quality and productivity for high volume
The new flagship Monna Lisa Evo Tre scanning printer with 64 Precision Core print-heads is built for high productivity (maximum printing speed of 779 sqm/h) without compromising the printing quality. Monna Lisa Evo Tre 64’s Precision Core technology combines quality, accuracy and speed which provides the maximum level of flexibility and reliability so that it is the right solution for a dynamic and diversified textile market.

Monna Lisa Evo Tre 64 - Key Points:
- Printheads: 64 Epson PrecisionCore Printheads, that combine quality, accuracy and speed.
- Productivity: Up to 779 m²/h (600x600 dpi; 2 passes) with PrecisionCore MicroTFP printheads.
- Resolution: Up to 1200 dpi.
- Ink types: Genesta Acid, Reactive, Disperse and Pigment.

Pailung’s innovations in circular knitting
Here we look at two of Pailung’s seven innovations showcased during ITMA 2019.

Spacer
Spacer is very common in shoe materials and other industrial use, but it is rarely used in apparels. In 2016, an intimate wear manufacturer wanted to create an undergarment that fits the female body curve and provides more comfortable support, so they came to meet Pailung with a collaboration request. Then, the Sculpted Spacer was developed to provide a changing-thickness spacer fabric.

Quadro Stretch
The ideas of Quadra Stretch came from the yoga trend for the past few years. In 2013, an international brand of yoga wear faced a problem in knitting leggings and wanted to find a solution from Pailung.

After putting much effort in developing how to feed spandex into structure perfectly, Pailung found the way to solve problems in knitting 4-way-extension fabrics. This development, through high-rate spandex and extraordinary interlock struc-
ture, delivers the ultimate extension to particular exercises which need more body stretch. It gives the most appropriate pressure to support body muscles and offers wide-ranging properties to all sports. In flat knit, Quadro Stretch is adopted to be close-fitting to body shape for active wears. In early 2018, OIL (Open Innovation Lab) collaborated with R&D department and developed a knitting technology which gives 3D knitting effects in body close-fit. Meanwhile, this technology replaces the labour-intensive process of cut-and-sew which even cannot closely fit to shape. Also, it brings the best breathability and comfort to indoor sports avoiding stuffiness. Moreover, the Quadro Stretch gives a snug support and is skin-friendly to wearers.

**Santoni takes knitting to a new level**

At ITMA 2019, Santoni showcased its very latest seamless circular knitting machines, together with sock knitting machines, large diameter fabric knitting machines, and also process finishing machines. Added to these are the brand new, patented ‘X MACHINE’ and ‘XT MACHINE’ with their ingenious intarsia technology, a new automatic finishing system for seamless boxers, and the innovative ‘K Fabric Project’ that introduces a completely new type of knitted textile process.

The updated versatile Mec-Mor technology, with the type Cmp2/Open and type HP machines, are still the only machines on the market equipped with needle-shifting movement of the needle beds (=racking) a bi-directional transfer on the same feed allowing variable widths of the knitted panel (=Variatax technology). Mec-Mor is known throughout the world as the only alternative range of machines that look circular but perform like a V-bed machine. This unique technology, displayed on 20 gauge, enables the production of well double-face knitted garments with high quality designs and record production times. This technology is also used to produce accessories, such as 3-D backpacks, where various yarns can be knitted into ad-hoc positioned areas, in order to obtain a seamless structure that guarantees superior product performance. The Mec-Mor can manufacture sportswear performance garments, knitted men’s jackets and various other eye-catching products.

Recently, acclaimed footwear brands have appreciated the wonderful shoe uppers created on the Mec-Mor bringing sharpness to high definition patterns, and the flexibility to place logos and different structures practically anywhere within the shoe upper. It can create the shoe upper structure in a single operation, so reducing the seams usually prevalent in standard footwear production cycle.

**Shipped Finishing Machines (Continuous)**

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<tr>
<th>World &amp; Region, per Sub-Category</th>
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<td><strong>Mercerizing - Line</strong></td>
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<tr>
<td><strong>Dyeing - Line (CPB)</strong></td>
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<tr>
<td><strong>Dyeing - Line (Hotblue)</strong></td>
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<tr>
<td><strong>Singeing Line</strong></td>
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<td><strong>Bleaching - Line</strong></td>
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<tr>
<td><strong>Washing (stand-alone)</strong></td>
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<td><strong>Sanforizers/Conprotexers</strong>*</td>
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<tr>
<td><strong>Relax Dryers/Tumblers</strong></td>
<td>88</td>
</tr>
<tr>
<td><strong>(thousand units)</strong></td>
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**Shipped Large Circular Knitting Machines**

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<td>Turkey</td>
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<td>Cambodia</td>
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**Shipped Electronic Flat Knitting Machines**

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<th>2016</th>
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<tr>
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