

## Press Release

### The challenge of digitalization

## Revolution or evolution?

**Shanghai, China, October 15, 2018 – Today, Industrie 4.0 is already making its mark at many companies across the globe – and is there to stay. The Age of Digitalization has also arrived in the textile sector – manifesting itself in the production of customized apparel within a mere few hours in microfactories or in the form of cost-optimized, self-controlled production based on networked systems and data analysis. At the same time, there are challenges that slowing down the advent of digitalization – data protection and data security being just two of these.**

Analysts at the consultancy PricewaterhouseCoopers (PwC) were astonished: its 2016 study 'Industrie 4.0: Building the digital enterprise' revealed that many companies across the globe are already taking digitalization seriously. The more than 2,000 participating companies from nine sectors of industry in 26 countries were planning to increase their degree of digitalization in 2015, the year of the survey, from an average of 33 percent to 72 percent within the five following years leading up to 2020. To achieve this, these enterprises are planning to invest around five percent of turnover – equivalent to US\$ 907 billion a year. In return, they expect cost savings of 3.6 percent and average annual sales growth of 2.9 percent.

### Huge investment in digitalization

This tendency is not only evident within companies industrialized countries, but also in emerging economies and developing countries – however, the PwC study is able to filter out differing targets. In Germany, Scandinavia and Japan, it is primarily about expanding operational efficiency and product quality. In the US, businesses plan to develop predominantly new digital business models and to expand digital product and service ranges. China is hoping to benefit as a result of automating and digitalizing labor-intensive manufacturing processes.

The study anticipates that the challenges for companies will above all lie in digitally qualifying staff or recruiting expert employees and in establishing an appropriate internal organization and 'digital culture'. This is necessary in order to use data analysis to improve and optimize planning and hence exploit the full potential of Industrie 4.0.

### Textile Industrie 4.0: the status quo

Digitalization is also creating a revolution within the textile industry: clients can today already configure and order customized apparel online and have it delivered with very short lead times. This form of manufacturing is also becoming increasingly profitable for manufacturers, as production and logistics processes will in future be extensively automated and self-controlled. However, some textiles experts are viewing the revolution more as an evolution: there is frequently currently still a lack of qualified manpower, reciprocal networking and interdisciplinary cooperation to realize these visions. When looking at digitally covering the entire value chain, not all links are in place yet for Industrie 4.0: they might be in sewing factories in China, but not at those in Ethiopia or Hungary. And the textile industry therefore requires sector-specific solutions above all.

The fact that these are possible is meanwhile being showcased by ever more Industrie 4.0 pioneers. At its virtually fully-automated Speedfactory, Adidas is able – after a treadmill analysis of the customer at the point-of-sale – to design, and in part manufacture by means of 3D printing, trainers in a matter of a few hours rather than over several months. With their Microfactory, companies under the auspices of the Deutsche Institute für Textil- und Faserforschung Denkendorf (DITF/German Institutes for Textile and Fiber Research Denkendorf) are demonstrating how an integrated production chain for apparel works, manufacturing sweaters and T-shirts using 3D simulation patterns in half a day – customized and profitably even for batch sizes of one. The project can be viewed as a fantastic example of the exchange of knowledge and technology transfer that Industrie 4.0 solutions require. And it enables more flexible, more customer-focused business models away from conventional mass production. The well-known elite German university RWTH Aachen is pursuing a similar approach. In a Learning Factory 4.0, the so-called Digital Capability Center (DCC), the Institut für Textiltechnik (ITA/Institute for Textile Technology) housed there is showcasing how digital transformation can be successful on the basis of a networked textile process chain and using assistance systems, among other things.

## **On the way to the fully networked textile factory**

And with that we move from the consumer product to the actual production and ultimately to the textile machine manufacturers. They are also focusing on digitalization and are intensively driving the development of an entire industry forward. But even the manufacturers of textile machines for mass production are looking at digitalization. The scenario of the future: textile production – from the supply chain through to dispatch – is autonomously controlled in the fully-networked Factory 4.0. The product being created controls and monitors the processes itself using embedded sensors. The manufacturing or order status is known at all times, raw materials are automatically reordered, wear and maintenance are planned as integral parts of the production process and error processes are identified, alleviated or displayed. This should cut costs, convert production lines more flexibly and help reduce downtimes and waste. For this, the machine construction sector has to provide correspondingly intelligent and Web-enabled production systems, capable of communicating using wired or wireless connections. No easy feat, as this requires interfaces between all systems involved and the collation, channeling and evaluation of tremendous volumes of data in real time.

The first steps on this journey have already been taken – with Oerlikon in the very vanguard. With its Plant Operation Center (POC) for process monitoring, Oerlikon Barmag, for instance, enables the collation of existing production data in a central location and to make these data available. On the occasion of the ITMA ASIA + CITME 2018 in Shanghai, China, the company also showcased the prospect of a development designed – on the basis of machine data – to identify error patterns or deviations as well as provide diagnosis support and help using artificial intelligence. An assistance system based on mixed-reality glasses (Microsoft HoloLens) has already been launched by Oerlikon – supporting predictive maintenance concepts and enabling virtual 360-degree tours through spinning systems. “The market is increasingly looking for more intelligent machine technology in order to more speedily and profitably collate and evaluate production data. And we are addressing this trend and are presenting solutions in a new, digital dimension”, comments Markus Reichwein, Head of Product Management for the Oerlikon Manmade Fibers segment.

## **Digital visions require the qualifying of employees**

Digital visions indicate a future in which consumers are able to codetermine their textile products to a considerably greater extent. New business and production models are emerging that will also make smaller batch sizes profitable. This will once again make high-wage countries attractive manufacturing sites. But experts do not anticipate that intelligent, extensively-automated factories will not be able to

dispense entirely with people. People will, however, assume other tasks – in part within the context of newly-created professions. Against this backdrop, qualifying employees and their positive (or negative) view of the opportunities offered by digitalization will be decisive in how swiftly the textile industry embarks on its digital future. And data protection and data security open up many questions that could slow down the speed of the revolution that is Industrie 4.0. Ultimately, many things depend on the textile companies themselves and their ability to embrace – and prepare themselves and their employees for – the opportunities offered by digitalization.

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Caption:

Oerlikon Barmag's texturing machines are digitally networked to ensure smooth production of quality yarns.

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#### About Oerlikon

Oerlikon (SIX: OERL) engineers materials, equipment and surfaces and provides expert services to enable customers to have high-performance products and systems with extended lifespans. Drawing on its key technological competencies and strong financial foundation, the Group is sustaining mid-term growth by executing three strategic drivers: addressing attractive growth markets, securing structural growth, and expanding through targeted mergers and acquisitions. A leading global technology and engineering Group, Oerlikon operates its business in two Segments – Surface Solutions and Manmade Fibers – and has a global footprint of over 9 500 employees at 171 locations in 37 countries. In 2017, Oerlikon generated CHF 2.1 billion in restated sales and invested around CHF 100 million in R&D.

For further information: [www.oerlikon.com](http://www.oerlikon.com)

**About the Oerlikon Manmade Fibers segment**

With its Oerlikon Barmag and Oerlikon Neumag brands, Oerlikon Manmade Fibers Segment is the world market leader for manmade fiber filament spinning systems, texturing machines, BCF systems, staple fiber systems, solutions for the production of nonwovens and – as a service provider – offers engineering solutions for the entire textile value added chain. As a future oriented company, the research and development at this division of the Oerlikon Group is driven by energy-efficiency and sustainable technologies (e-save). With the continuous polycondensation and extrusion line systems and their key components, the company caters to the entire process with automated and digitally networked Industry 4.0 solutions – from the monomer all the way through to the textured yarn. The primary markets for the product portfolio of Oerlikon Barmag are in Asia, especially in China, India and Turkey, and – for those of Oerlikon Neumag – in the USA, Asia, Turkey and Europe. Worldwide, the segment – with just under 3,000 employees – has a presence in 120 countries of production, sales and distribution and service organizations. At the R&D centers in Remscheid, Neumünster (Germany) and Suzhou (China), highly-qualified engineers, technologists and technicians develop innovative and technologically-leading products for tomorrow's world.

For further information: [www.oerlikon.com/manmade-fibers](http://www.oerlikon.com/manmade-fibers)