



WORLD MANUFACTURERS FORUM

Digitally transforming the sporting goods industry

The sixth edition of WFSGI's World Manufacturers Forum took place in Vietnam last week, discussing manufacturing and human labour in the digital age. WTiN brings you the highlights.

Whether we like it or not, Industry 4.0 is coming, and how we respond to this and take advantage of the opportunities it brings will determine our success. That was the key message of the sixth World Manufacturers Forum (WMF), organised by the World Federation of the Sporting Goods Industry (WFSGI), which focused on the theme of 'Manufacturing 4.0: Steps toward a future vision'.

Held on 11-12 December in Ho Chi Minh City, Vietnam, the forum addressed the key topics of blockchain technology, smart garment factories, human labour in the digital age, and digital transformation of the textile value chain. It also covered raw materials disruptions and innovative software technologies.

Opening the conference, Robbert De Kock, president and CEO of WFSGI, described the WMF as a 'neutral platform because it deals with issues that concern the whole global sporting goods industry'. He also encouraged the delegates to talk to their competitors so that they can 'learn from each other and exchange ideas to develop further'.

Meanwhile, Sean O'Hollaren, chairman of WFSGI and senior vice president, Government and Public Affairs, Nike Inc, said that speed is driving everything, giving a nod to e-commerce giants Amazon and Alibaba. "Consumer expectations of how quickly we're getting products to them are evolving day by day – making all of us work a little bit differently". He said that sustainability is not an optional add-on, it is a consumer expectation. "Our labour and environmental practices are something that our consumers expect from brands, so how we do this is critical – and this is what helps maximise human potential and performance."

Setting the scene of this year's forum, moderator Edwin Keh, CEO of the Hong Kong Research Institute of Textiles and Apparel, said: "This is a story of Asia and the changes that Vietnam has gone through in the last decade or so in manufacturing. It's such an exciting place to be."

Blockchain solutions

The presentation programme started with an in-depth look at blockchain technology – a concept that has changed how we communicate with each other and revolutionised the way we transact. Nicholas Russell from IDEA London, University of London, UK, said that "every 10 years, you get something that you really think is going to be disruptive", listing the internet and smart phones as key examples. Now we have blockchain – defined as a digital record of transactions – which is seen as another opportunity to change the industrial landscape.

Russell invited the audience to participate in a poll which started by asking: 'To what extent will this technology affect your business?' Most people selected the first option which was 'a lot'. In the question that followed, most delegates answered that they were aware of the technology's potential impact but were unsure of where it was going.

Blockchain technology started to take off after the financial crisis of 2008. Despite the depleted state of the economy back then, it 'wasn't the end; it was the start of a new digital revolution that is now pushing transparency to the surface in a lot of ways', said Russell. Since then, we have seen the creation of cryptocurrencies such as Bitcoin which have grown through blockchain technology. How this technology is now applied goes far beyond simple online cash payments. "So, now is a great time to become aware and look at how it's been used," he said.

For instance, blockchain has enabled the growth of data-driven manufacturing systems, commonly used by Apple, Amazon and BMW, which electronically track stages of the supply chain and allow customers to access them remotely, advancing efficiency and transparency. This IoT initiative, said Russell, will be driven further by cheaper system components – enabling smaller companies to offer a similar service in future.

Blockchain could also be used to improve the traceability of recycled plastic, Russell suggested, by doping the plastic with a compound at the manufacturing stage. If the plastic was then to end up in the ocean, it could be traced back to where it came from, allowing people to identify what type of plastic it is, easing the recycling process. That level of traceability, said Russell, 'creates a closed loop sourcing programme – identifying where an object goes and who put it there'.

Driving automation

Manufacturing in the digital age demands a need for real-time visibility and data-driven decision making, according to Martin Strommer, advisor to the Board, nCinga Innovations, Singapore. The future of Industry 4.0, he said, is the ability of machines to talk to other machines, systems, sensors and other types of technology. And the people in a manufacturing entity can be interlinked via these physical systems.

He spoke of a new paradigm related to Industry 4.0 known as decentralisation – comprising autonomous systems or artificial intelligence (AI). "Essentially, the end goal is a factory that pretty much runs itself," said Strommer. "And, the only time when we need to get involved is when there is

some exception – for instance, if the machines or systems can't agree and require human intervention.”

He explained that Industry 4.0, or Industrie 4.0, is a platform that was originally developed for the German industry to work more efficiently and to stay competitive amid high labour rates and the high cost of manufacturing. It does this through shortening a product's time to market, increasing flexibility for individualised mass production, and enabling return on investment.

Similar standards have been developed globally: “The whole world is looking at manufacturing excellence based on these Industry 4.0 standards,” said Strommer. He added that Industry 4.0 needs to be adapted to the whole of Asia and developing countries. “There is a lot of manual work, it is labour intensive, but it gives ample opportunities to digitalise some of these labour-intensive operations.

“It is a journey and the time to start the journey is now.”

The first morning session concluded with a brief talk from Rakhil Hirdaramani, board director of the Hirdaramani Group, who discussed the changing role of the manufacturer in the age of the so-called smart factory. “We have a business model that has disrupted everything we do, so we talk about speed as the new normal,” said Hirdaramani, who added that the industry needs to start automating its knowledge base.

Boosting skills

Catherine Cole, executive director of Alvanon, Hong Kong, said that as digitalisation takes place across the supply chain, staff need to contend with new skills – from understanding big data facilitated buying and merchandising, to 3D design, automation, and more collaborative ways of managing product lifecycles.

Cole began her presentation by asking the audience a couple of questions including: ‘How worried are you about the relevance of your team's skills over the next five years?’ The majority (65%) answered ‘moderately worried’, while 31% said ‘panic!’ and just 5% expressed no concerns whatsoever.

It seems that the delegates have a right to be worried, considering that robot automation is expected to take over the jobs of 800 million global workers by 2030, according to a 2017 report by McKinsey Global Institute.

“The fact is, there is a slowing labour force growth rate,” Cole pointed out, which can be attributed to many factors including an ageing population and migration. She said the apparel industry was the first to automate with the sewing machine, so it is ironic that it was not the first to embrace digitalisation.

To put this into context, Cole presented the results of a global survey Alvanon recently conducted entitled The State of Skills in the Apparel Industry 2018, which explores what digitisation and automation mean for the current workforce. It also offers various case studies on how to tackle the apparel industry's digital skills gap.

The survey features 642 respondents from various apparel brands, manufacturers or factories, retailers and sourcing companies. 73% of respondents said that employee learning and skills development is a key business issue; 62% said they have difficulty filling certain positions due to a

lack of skilled workforces; and over 50% of respondents are 'concerned' with the lack of training and development opportunities.

In addition, time and budget constraints were considered the biggest roadblocks to enhanced training programmes for managers, prompting Cole to say: "We need to think about new ways of training".

Three potential solutions for improving workers' skillsets, noted by Cole, are: preserving the craft and fundamentals, upskilling/transitioning current employees, and collaborating across supply chains. "Skills are going to be your competitive advantage going forward... and there has to be continuing professional development," Cole concluded.

The increasingly important role workers play in automation was emphasised by Harry Nurmansyah, senior director, Field Operation, Social and Environmental Affairs, Asia Pacific, Adidas. Worker empowerment is quickly becoming a common trend in supply chain management because it signifies workers' contribution to the factory's operation and improves communication between management. Worker insights can lead to improved staff engagement, which directly improves retention and productivity at the factory level, said Nurmansyah.

He spoke about Adidas' social compliance programme, which takes an in-depth approach to managing the relationships with its suppliers. The programme stemmed from three major factors: a lack of awareness of workers' rights; weak legal enforcement; and greater scrutiny by stakeholders.

According to Nurmansyah, Adidas strengthened its programme by adding a new element called Worker empowerment – giving workers a voice, roles and opportunities to drive changes and/or improvement. This, in turn, drives productivity and efficiency.

Digital transformation

The emerging digital transformation of the textile and apparel industry is being driven by three factors, according to Mark Jarvis, managing director of WTiN, including a paradigm shift in the manufacturing process, material innovation, and a new economic model.

These three fundamental changes to the competitive environment, he added, present a 'once in a generation opportunity for manufacturers to reinvent their business'.

Jarvis presented the findings from the recent Digital Transformation Survey carried out by WTiN in collaboration with CEMATEX, Gherzi Textil Organisation, International Apparel Federation, International Textile Manufacturers Federation and WFSGI, assisted by Dornbirn Global Fibre Congress. The aim of the survey was to provide a rounded analysis of the pace of change at the beginning of the Fourth Industrial Revolution, covering investment with regards to people and technologies plus current and expected impacts on the industry as a whole.

According to Jarvis, the overall findings of the survey present a 'slightly positive' outlook for digital transformation across all geographies in the textile and apparel industry.

Asia is the geographical front-runner in digital transformation, with 71% of respondents from this region having implemented digital transformation initiatives. Most of the investments are made in data analytics, with 18% of participants using predictive data analytics.

Jarvis echoed the sentiments of the previous speakers by saying that the industry should focus on overcoming several challenges, including the inability of business partners to collaborate, a lack of clear vision and leadership, unclear economic benefits of digital investments, high financial investment requirements, a lack of skilled professionals and a lack of basic infrastructure technologies.

He concluded by quoting US business tycoon, Bill Gates: “We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next 10. Don’t let yourself be lulled into inaction.”

Smart supply chain

Christian Decker, CEO of DESMA, Germany, discussed the digitalisation of the footwear industry and software automation.

He said that over the last 60 years, the consumer’s influence on the supply chain has changed considerably. Such that, supply chains are becoming ‘demand chains’ where the consumer is demanding what businesses are producing instead of the brands themselves – transforming the business model that has existed in shoe making for 150 years.

Decker said ‘supply chains need to get smarter, extremely dynamic and far more integrated’ to keep up with this demand which, as discussed previously, centres on speed.

Some brands, including Nike and Under Armour, have responded with reshoring initiatives – opening plants overseas to be closer to the demand. Under Armour believes that ‘local-for-local manufacturing drives growth with better products and a more efficient supply chain’.

The question that should be asked, said Decker, is: ‘How are your consumers today integrated into your supply chains?’ The data they require – be this a specific shoe size or colour, for example – should be integrated into the supply chain to provide the right product.

He also suggested that the development of a smart supply chain gives new possibilities regarding the ‘ProduTrainment’ trend which focuses on offering not just a product but also entertainment to the consumer by mixing production with entertainment.

This consumer focus was echoed by Jonas Wand, chief sales officer and Louise Leuchtenberger, head of marketing and PR at Germany’s Foursource Group – a global B2B platform for apparel and textile sourcing. The speakers introduced a case study of Mammüt Sports Group who intends to be a digital leader in the outdoor sportswear industry. They presented some parts of the interview with CEO of Mammüt, Dr Oliver Pabst, in which he said the decision behind this was to be ‘faster and closer to the consumer’.

The speakers said that ‘direct connection of all the partners in this industry will speed up the entire process’ and emphasised the importance of solutions and data processing that go to the source and enable direct connection. This, they said, is particularly important due to the emergence of new direct competitors, such as vertically integrated companies and e-commerce players who can easily understand consumer trends, translate them into their offering and deliver them with high speed.

Smart clothes

Marius Janta, senior project manager, research, application and BD, WT | Wearable Technologies, Germany, discussed the need for smart textiles in today's sporting goods industry. This is primarily because they enable more user interfaces to be integrated into products, generating new user experiences. One way of implementing smart technologies into textiles is through RFID tags, which provide new information to the customer and new solutions to brands and manufacturers. They can be sewn into the jacket and record data via a smart phone.

"We need to give smart textile platforms a chance to increase product value with heating and lighting applications and vital sign monitoring etc to take a health-orientated approach," said Janta, who added that the smart textiles market will be one of the biggest growth markets in the next five years because it "tackles a very important theme of our everyday life".

Materials disruptions

Another presentation by Kanji Kajiwara from the Faculty of Textile Science and Technology, Shinshu University in Japan, focused on the important role fabrics and materials play in sporting goods. Kajiwara reviewed high-performance materials developments and showed how much we can learn from nature. His presentation included some examples of exciting materials inspired by nature. One of them is Spiber – a lab-made spider silk which draws on the great properties of natural spider silk, including a toughness that is said to be much stronger than nylon and carbon fibre.

Smart manufacturing

The last presentation focused on Industry 4.0 applications for industrial parks, by Professor George Huang, Department of Industrial and Manufacturing Systems Engineering, The University of Hong Kong, China. According to Huang, "operations are very complicated in the physical world, but once they are converted into the digital space, things are very simple because everything is based on data."

Huang said that in the future, instead of using expensive warehouses, "we will achieve zero warehouse manufacturing, where visibility and traceability hedges time risk in inventory management".

Summing up this year's forum, moderator Edwin Keh suggested that we need to allocate more room to conduct experiments and try new things. He also said that "there is an opportunity to create some sort of platform for collaboration so that we can think like an ecosystem rather than a one-off side specialist, because what we talked about is bigger than what any one organisation can do on its own."

This year's edition of the World Manufacturers Forum was partnered by DESMA, Delta and L&E International, alongside media partners Just Style, WTIN and Bike Europe. To learn more about the event, visit <https://wfsqi.org/>