

20th UITIC Congress

SERGIO DULIO

The evocative title that UITIC, the international association of footwear technicians, chose to celebrate the 20th Congress since its establishment in 1974 was from *From fashion to factory*. It also marked its return to Porto 22 years since the first time UITIC members and attendees gathered in the Portuguese capital of shoemaking. And for this 2018 Congress, there were good reasons to be back. It was not only the beauty of renovated central Porto or the warm hospitality of the organisers which made it an unforgettable event but, more than anything else, the richness and high level of interest shown in regard to its content and collateral events. In fact, the UITIC Congress is not only about presentations and delivering technical information, but very much about sharing experiences by being exposed to the manufacturing capabilities of the

local shoe industry. UITIC always pays close attention when choosing the location for its Congress, considering in particular its relation to the presence of shoe companies and their manufacturing facilities, visits to which are an important part of the programme.

Traditionally the Congress has always offered two days (actually one full day and one half) of technical presentations and one additional day of factory visits. But this time, thanks to perfect organisation by APICCAPS (Portuguese association of footwear manufacturers) and CTCP (the shoe technology centre), plus the convenient geographical location of the most important shoe companies in the area, this was extended to allow more than 20 factory visits to be made altogether. These visits are invaluable occasions to see how the local industry is organised, to appreciate its manufacturing schemes

and share experiences on the day-to-day managing of the business. Participants in these visits were certainly not disappointed as the Portuguese shoe industry is a perfect mix of manufacturing ability, lean organisation and technological innovation. This has allowed the sector to recover from an almost desperate market situation back in the 1970s to the notable achievements of recent years with a 52% increase in exports between 2010 and 2017.

These results have been obtained largely through effective and fruitful cooperation between local companies and the government agencies that supported them in joint innovation initiatives aimed at modernising and improving the competitiveness of the footwear sector. During the years 2000 to 2007, Portuguese shoe companies invested over €90 million in innovation



Leandro De Mello, director CTCP
and Yves Morin, President UITIC.

ALL CREDITS: UITIC

Visits are an important aspect of the Congress – the MOVE exhibition in Porto celebrated the evolution and technical achievements of the Portuguese footwear industry.



projects and received incentives at national and international levels of more than €50 million that enabled the sector to achieve the export results mentioned and to rank amongst the most advanced manufacturers worldwide.

A DIFFERENT WORLD

In the 22 years that have passed since the last Congress in Porto, the worldwide shoe industry has changed dramatically. China has emerged as the undisputed manufacturing leader, accounting for almost two thirds of world production. Other manufacturers have moved into higher grade segments and sustainability is emerging as a top priority for everyone, together with a wide set of other social responsibilities that are changing the priorities of many companies. More recently, the widespread diffusion of Industry 4.0 principles such as flexibility, digital technologies, customisation and management of the new relationship between brands and final consumers, has brought in a wave of changes with the potential to impact dramatically on business fundamentals.

In the vision of the future that the Congress conveyed to the audience, digital technologies will significantly impact all the value chain. Production will be smarter, quicker, customer centric and closer to the final consumer. On top of this, the design process will be technologically boosted by knowledge of the consumer's preferences. Promotion and sales channels will have a huge degree of digital interaction with

the final consumer. We can therefore say that a 'new technological age' is coming and footwear players must be focused on understanding all the opportunities that will emerge to ensure they are in a favourable position to make the most of it. On May 17th and 18th the core programme of the Congress was presented through a series of dedicated sessions each one centred on a specific segment of the value chain: new products and services, intelligent development and manufacturing, sustainability and, finally, training and knowledge management.

WHAT SHOULD COMPANIES BE DOING?

Companies must be ready to embark on a journey through exponential change and emerging business models, as the keynote speech by Maarten Oonk of the Deloitte Centre for Edge made very clear. His most important message was that we must first unlearn in order to begin to really learn the new rules, developing a new set of skills based on key phrases such as collaborate to grow, start being digital and develop an exponential mindset. Thanks to these new skills, companies will be in a position to connect emerging technologies with emerging business models whose exploitation will enable them to take full advantage of the on-going transformation.

We are all becoming more and more familiar with the funding technologies that are driving the path towards

Industry 4.0, the fourth stage of the industrial revolution. But we do not realise that each of these technologies has a companion in the business domain. Artificial intelligence goes hand in hand with crowd sourcing, augmented/virtual reality with crowd funding, advanced robotics with prize-based competition, additive manufacturing with the maker movement, networks and sensors with gamification, advanced materials with mobile economy, biotechnology and bioinformatics with democratisation of fabrication.

According to Deloitte's analysis, manufacturing will be driven by four main shifts. First, the changing nature of consumer demand, with the growing importance of personalisation and customisation, with a transformation of consumers more and more into creators and a prevalence of access towards ownership. The second change will be in the nature of products that will evolve from dumb to smart, becoming platforms increasingly oriented towards offering services rather than being mere products. Another big change will be in the economics of the value chain, triggered by the direct engagement of consumers. This will speed up commercialisation and a prevalence of build to order versus build to stock. Eventually this will lead to a deep change in the economics of production, introducing what we can truly see as Manufacturing 4.0. We will see the emergence of new manufacturing models eroding barriers to learning,



From left to right, Chris Hillyer (Decker), Andreas Tepest (Deichman), Nicoline Van Enter (Footwearists) and Matt Priest (FDRA).

entry and commercialisation. In order for companies to survive these new challenges they must change their mindset and learn the new language of the transformation.

GLOBAL SHOE PRODUCTION

To set the framework of our report, we should look at the numbers involved in global shoe production. These tell us that in 2016, 23 billion pairs were produced worldwide. Certainly a remarkable figure if it was not for the fact that what appeared until a couple of years ago to be an unstoppable rate of growth now seems to be slowing, indicating a global easing in the amount of shoes consumed and being produced. Something to be worried about? Possibly, also considering that the flattening of this growth actually happened in the financial post-crisis years and could possibly indicate the end of the low hanging fruit era. A further indication that the rules of the game are changing and that companies must adjust to the new scenario. Besides this, no other changes: Asia accounts for 87% of total production with China alone taking 57% of that, followed by the three Asian tigers (India, Vietnam and Indonesia), Brazil, Turkey and a bunch of other producer countries. No European nation appears in the list of the top 10 producers in actual pairage terms.

This market scenario was further commented on in the subsequent panel discussion chaired and moderated by FDRA (Footwear Distributors and

Retailers of America) director Matt Priest. Through the contributions of the experts involved who came from different backgrounds, Chris Hillyer from Decker (manufacturing), Andreas Tepest from Deichman (distribution) and Nicoline Van Enter founder of Footwearists, a footwear innovation think tank), the audience had the possibility of learning from their comments how relevant the impact of the digitalisation of processes, 3D printing and other modern technologies will be in the future, particularly when younger generations of consumers are predominant. The final message was clear: do not believe these are just technologies of the future. They are already here, they can be adopted and someone will certainly do so under pressure from a market made by consumers whose attitudes will be much different from those in the past.

NEW PRODUCTS AND NEW SERVICES

Companies therefore need new products and new services to face this challenge and was the topic of the opening session on May 17th. Attention to fashion trends combined with a deeper understanding of the behaviour of future consumers are vital to being competitive in the future. However, these capabilities alone are insufficient if they cannot be translated carefully and rapidly into design requirements for

new products that are more market and consumer focused. Among the trends that will shape future shoe products we can certainly mention sustainability, as was presented in one of the lectures of the session. Also, customisation also brings greater attention to how shoes and, in particular, lasts are designed to guarantee quality, good fitting and comfort.

Where serving individual consumers is the final goal, a specific set of tools is needed to allow them to choose and configure the shoe they like, to get the best fit advice based on a foot scan and to connect to the manufacturing supply chain in order to have the shoes produced. This platform was presented by Andrey Golub from the Italian start-up ELSE Corp who gave a full insight on how this modern, cloud-based infrastructure works and also demonstrated the application of technologies including machine learning and artificial intelligence for tasks such as individual fit and style suggestion.

Good fitting shoes need well designed lasts, whose volumes and shapes are based on an observation of a certain cross-section of consumers' feet that can be used as a starting point for the calculation of their relevant characteristics. On the other hand, it is extremely valuable for a company to assess how well its lasts actually fit their target population of consumers. This is



The Congress was very well attended by delegates from across the world.

the objective of research presented by CTC France, the final outcome of which will be a set of software tools aimed at providing shoe companies with an assessment service for their lasts.

3D printing and augmented reality were other enabling technologies, both part of the Industry 4.0 portfolio, that received attention during the Congress, with two papers addressed to them. The first one highlighted challenges that modern shoe CAD systems face in order to generate geometries that can be immediately and effectively exported and printed by FDM or other machines with the desired quality. The second introduced an interesting application of augmented reality to create a virtual fitting room where consumers can see themselves wearing the digital shoes they have just created. Nothing really new because similar applications have been around for almost 15 years. Now, however, thanks to the rapid evolution in software and hardware, they are due to deliver much more convincing results.

NEW MANUFACTURING CONCEPTS

Moving from design to manufacturing, the keywords to be remembered are once more digital processes and robotics. They will increasingly define the efficiency standards all companies will be called on to adopt and how manufacturing will

be managed and monitored in future. This expanding wave of robot adoption in shoe making is now progressively moving from direct injection processes where it is well established, on to the more traditional segment of lasted shoes with cemented outsoles, as proposed by ATOMLab with its RAMS solution that was extensively covered in the January/February issue of *World Footwear*. The sheer scope of this digital transformation was clearly illustrated by BM technology from China, which gave a full insight into the technological vision of the future of shoemaking that Chinese manufacturers are developing. It may not be called Industry 4.0 as such but all the relevant pieces of the paradigm are properly taken into consideration in the Chinese interpretation of digital manufacturing.

Besides all these technological challenges, it is commonly accepted that there is no way of progressing into the future without considering sustainability and all its related issues. A full session of the congress was dedicated to this topic which was tackled from three different perspectives: biodegradable materials such as PU that dissolve in the environment without polluting it, disassembly and recycling processes for a complete circular economy of footwear and regulatory aspects that should help (or compel when necessary) companies to adopt the right

behaviour in order to safeguard the environment and future generations. Some interesting examples of virtuous countries from this standpoint such as Brazil, were presented.

Despite all the technological advancements we have mentioned and the futuristic, highly automated setups that they will enable, human workers are not due to disappear completely from shoe factories. That said, their skills and capabilities would have to change and to adjust to the new scenarios. Hence, Industry 4.0 calls for 'workers 4.0' who need to be selected, trained and continually 'augmented' both in their skill sets and with the help of mechanical servants such as the new generation of cobots (collaborative robots) that is on the verge of making its way into the factories of the future.

A very relevant topic that deserved the whole final session in the congress, with speakers from industries, service centres and training institutions all contributing. Eventually a positive message was sent to the audience in that footwear factories in the future will be better places for workers, requiring different and more modern skills so as to attract the younger generation, yet without losing that human, craftsman touch that is a distinctive element of shoemaking.

As a conclusion, we can safely say that the second UITIC in Porto was a great success with more than 500 delegates coming from virtually all the countries of the world, delivering encouraging messages for delegates to take away with them. While it is true that we live in a time of profound transformation which requires high flexibility in following emerging trends, these are also times of great opportunity if companies can adjust their mindsets smartly enough. It also concluded with a little bit of a thrill. While in all the previous editions of the Congress the location for the next one was communicated in the closing ceremony, this was not the case in Porto. For the first time in the history of UITIC there are several candidate countries to host the next venue so we will have to wait until the members of the UITIC board make the final choice in the forthcoming weeks to know the winner. None the less, you can be sure it will certainly be in a perfect shoemaking place. 🎯