

WORLD FOOTWEAR

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THE MAGAZINE FOR THE GLOBAL SHOE INDUSTRY



DESMA at 75

A new manufacturing lexicon

Film star sells her shoes

Investors buy into footwear brands



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Part of an exhibition that JM Weston has installed in one of its shops in Paris to mark the brand's 130th anniversary, based on specially designed models to retrace the company's history.
Credit: JM Weston.

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News

DENMARK Hide supplier Spoor has successfully completed a second fully traceable leather project with a footwear brand in its home country, Denmark. At the start of 2021, Spoor announced a partnership with footwear brand Roccamore, which used leather tanned from traceable Spoor hides in a collection called Traceability. Now Pyk Copenhagen, a brand that specialises in handmade children's shoes, has followed suit and is using leather from Spoor hides in a collection of six styles called, simply, Spoor x Pyk Copenhagen.

FRANCE Advertising standards bodies in France have upheld a complaint from a consumer about claims adidas has made for its Stan Smith Forever shoes. Claims about recycled content and the contribution the shoes can make to addressing the problem of plastic waste were misleading, according to the complaint said. A special jury set up by the ARPP, France's professional regulation body for advertising, found that the consumer's complaint was valid.

ITALY Italian tanning industry association UNIC recently published figures detailing the performance of leather manufacturers throughout the country in 2020. Total output for the year was 97.3 million square-metres of finished leather, not including sole leather. This represents a fall of 16.4% compared to the figure for 2019. Just over 35 million square-metres of this leather, a 36.1% share of the total, went into footwear. This means footwear is still the biggest application area for finished Italian leather, even though footwear manufacturers consumed 20% less finished leather from Italy in 2020 than in the previous year.



BURKINA FASO Footwear brand Camper was one of a number of European companies to work with African artisans to prepare exhibits for an event called Bonne Arrivée in September. In Camper's case, it worked with artisans from Burkina Faso, incorporating materials that showed off their weaving, dyeing, and beading techniques into footwear and bags. Bonne Arrivée was organised by the United Nations' Ethical Fashion Initiative and hosted by the Museum of Decorative Arts in Paris.



CAMEROON Outdoor footwear brand Oboz has now planted more than 4 million trees through a partnership with a programme called One More Tree. It has long had a policy of planting a tree for every pair of shoes it sells, but to celebrate hitting 4 million, it has announced that, throughout October and November, it will plant two trees for every pair, mostly in grassroots projects in Africa. In Cameroon and Kenya, the trees protect soil and provide livelihoods for hillside communities. In the arid regions of Senegal and Tanzania, fruit trees combined with vegetable gardens are enabling families to combat hunger.

ETHIOPIA Tanning group Pittards has launched a complete footwear solution for brands, offering services from the leather sourcing, through design to manufacture. Brands including Vivobarefoot already manufacture at Pittard's Ethiopian facility. Pittards' footwear team works across both the company's UK and Ethiopia divisions, with design, development and sampling based at the Yeovil headquarters and full production at its modern Addis Ababa factory.

PAKISTAN Chief executive of Lahore-based Rafum Industries, Zahid Hussain, has been elected chairman of the Pakistan Footwear Manufacturing Association (PFMA) for 2021-2022. In his acceptance speech, Mr Hussain said the challenges the footwear industry faces in Pakistan include the local tax regime and duties on raw materials. He argued that materials footwear manufacturers bring in ought to attract the lowest level of customs duty and that the government should help manufacturers build and promote a 'made in Pakistan' policy.

CHINA Anta Group, the company behind sportswear brands Anta and Fila, has revealed its unaudited first-half results. The organisation said that it had achieved year-on-year revenue growth of 55.5% to reach \$3.5 billion, a record high. It also reported that these results amounted to a 54% increase compared to the same period in 2019.

US For a second year running, footwear brand Wolverine and Old Rip Van Winkle Distillery have come together "to showcase true American craftsmanship" with a limited-edition version of Wolverine's 1000 Mile boot. Following a successful first collaboration last year, the Batch 2 Wolverine x Old Rip Van Winkle 1000 Mile boot is now available at \$400 per pair. Revenue from the sale of these boots will go to the mikeroweWORKS Foundation programme, which supports the training of new generations of skilled tradespeople in the US.

- Luxury group Tapestry has reported a 126% rise in fourth-quarter revenues to \$1.6 billion and record full-year income, with CEO Joanne Crevoiserat describing it as a standout result in a transformational year. The owner of Coach, Stuart Weitzman and Kate Spade achieved \$1.6 billion in digital sales for the year, \$1 billion more than in 2019. It closed 59 stores in the 2021 financial year, added to 30 last year; 13 of these were Kate Spade and 27 were Stuart Weitzman.

INDIA India's Council for Leather Exports (CLE) has reported revenues of \$1.4 billion for the first four months of the current financial year, April-July 2021. The figure for the same months in 2020, at the start of the covid-19 pandemic, was just over \$770 million. This time, exports of leather footwear brought in revenues of \$580 million, up by more than 70%, while finished leather exports rose in value by 80% to reach more than \$150 million.

VIETNAM Sports footwear group Nike told *The Wall Street Journal* in late September that production disruptions in Vietnam, where the company now makes around half of its shoes, had cost it ten weeks of production, which might mean as many as 100 million pairs of shoes, since July. The disruptions are because of covid-19. Nike began producing shoes in Vietnam when production in China became too expensive. However, it said it had now decided to transfer some production back to China.

ARGENTINA A shoe manufacturing facility in Argentina, set up by Brazilian group Paquetá in 2007, but closed in 2018, has reopened for business under new owners and with new customers. Paquetá opened the 9,000 square-metre factory in Chivilcoy, 150 kilometres west of Buenos Aires, and used it to make footwear for adidas, generating around 700 jobs. Local company Bicontinental Footwear Technologies has acquired and reopened it, hired 100 people and has begun making shoes for brands including Diadora and domestic brand Athix. Local media have said Bicontinental will also produce footwear for New Balance and Spanish brand Joma at the factory.

PARAGUAY A first national exhibition of leathersgoods and footwear took place in Paraguay at the end of August. The Sheraton Hotel in Asunción was the venue for the one-day event. Footwear industry body CICPAR was one of the organisers, along with groups representing shoe industry suppliers and wider small enterprise organisations. In total 45 manufacturers of shoes and leather products took part. Small business support groups attached to the South American country's ministry of industry and commerce have a special focus on footwear and leather this year.

Footprints

CEO OF LENZING LEAVES

Fibre manufacturing group Lenzing has announced that its chief executive, **Dr Stefan Doboczky**, has left the role.

His contract ended on September 30 and the Austria-based company announced at the start of the month that Dr Doboczky had informed its supervisory board that he would not be extending his tenure. Lenzing said it had accepted his resignation "with great regret" and announced that it would begin its search for a new chief executive immediately.

Stefan Doboczky became the chief executive of Lenzing in June 2015, succeeding **Peter Untersperger**. This followed a 17-year career at material science group Royal DSM.

ABG FOUNDER WELCOMES REEBOK 'HONOUR'

Sports group adidas has announced its decision to sell the Reebok brand to New York City-headquartered Authentic Brands Group (ABG) for up to €2.1 billion (just under \$2.5 billion).

ABG owns a range of brands including Juicy Couture, Forever 21 and Hervé Leger, plus the Sports Illustrated publication and the likeness rights to well-known personalities such as **Muhammad Ali**, **Shaquille O'Neal**, **Marilyn Monroe** and **Elvis Presley**.

Adidas first revealed formal plans to divest itself of Reebok back in February. Although still subject to final approval, the deal is expected to close during the first quarter of 2022.

Founder, chairman and chief executive of ABG, **Jamie Salter**, commented: "It's an honour to be entrusted with carrying Reebok's legacy forward. We are committed to preserving Reebok's integrity, innovation and values, including its presence in bricks and mortar."

Adding to this, adidas' chief executive, **Kasper Rørsted**, said: "Reebok has been a valued part of adidas, and we are grateful for the contributions the brand and the team behind it have made to our company. With this change in ownership, we



ECCO PROMOTES PANOS MYTAROS TO GROUP CEO

Danish footwear and leather group Ecco has appointed **Panos Mytaros** (above) as CEO, replacing **Steen Borgholm**, who stepped down by mutual agreement.

Mr Mytaros first worked for Ecco as tannery director in Indonesia. In 2002, he returned to Europe to build the Ecco Leather Group, based in Dongen in the Netherlands, and joined the board in 2011.

The group has also added two to its board. **Thomas Gøgsig** is the third generation in his family to work for Ecco. He was appointed head of applied research in 2015 and in 2018, VP and chief of staff in the marketing division.

Mads Fink Eriksen has worked with Ecco for 10 years, starting in China. In 2020, he was appointed chief financial officer.

believe the Reebok brand will be well positioned for long-term success."

CAUTIOUS UK EXPANSION PLANS FOR DEICHMANN

Footwear group Deichmann has conservative ambitions to grow its business in the UK. It currently has 109 stores there.

This is far fewer than its footprint in its home market, Germany, where it has more than 1,000 stores, but also behind smaller markets such as Switzerland and the Netherlands, in each of which it has nearly 200.

Samuel Deichmann, great-grandson of the company's founder and a member of its executive board, recently told the *Financial Times* that the footwear group sees a lot of potential in the UK market and wants to be the market leader in family footwear there.

He said the company did not want to do "anything reckless", but he

suggested Deichmann could double its number of UK stores in the medium term. "The market offers great opportunities for us," he added.

PASSION FOR TENNIS

Former Nike designer **Christopher Bevans**, who has also worked with adidas, Under Armour and Pharrell Williams, was the guest designer on an inaugural project with Fila and will continue the partnership throughout 2022.

A special edition of the Fila Renno tennis shoe is the product that the partners have focused on to start with. An avid tennis fan and player, Mr Bevans said his love of the game had been his inspiration.

The shoe uses a mix of materials throughout, including recycled leather, suede, nylon and ripstop mesh. It is constructed with a padded tongue and collar and Fila's proprietary midsole cushioning system, Energized.

WILLIAM WONG'S WARNING

The 2021 Global Footwear Sustainability Summit will take place in Shanghai from October 21-23.

Presentations and discussions at the event will focus on a range of subjects including chemicals, materials, manufacturing technology, upcycling and 'green' finance for sustainable footwear initiatives.

Founder of the event and former vice-president of the Hong Kong Footwear Association, **William Wong**, said in the build-up to the summit that he hoped professionals from across the industry would take part to help build a more sustainable industry.

"We produce and consume 24 billion pairs of shoes each year," Mr Wong said, "and more than 99% of these shoes ended up in landfills, if not rivers and oceans."

JM WESTON ANNIVERSARY EXHIBITION

Footwear brand JM Weston has installed a special exhibition at its gallery-boutique in Le Marais in central Paris. The exhibition, called Chaussœuvres (combining the French words for shoes and works of art), will run until December.

JM Weston is celebrating its 130th anniversary this year and Chaussœuvres is part of the celebration. It is based on an original idea from the brand's artistic director, **Olivier Saillard**, and is curated by the company's design studio and prepared in its workshops in Limoges. It comprises 11 specially designed footwear models that retrace the JM Weston history, each demonstrating a particular aspect of its know-how and craftsmanship.

Shoes presented in the exhibition include the brand's 180 Loafer, tassels Loafer, Golf Derby, 300 Oxford shoe, Cambre Chelsea Boot and, arguably its most famous product, the Garde Républicaine boot.

RED DRAGONFLY LOOKS UPMARKET

Chinese footwear company Red Dragonfly has released its latest campaign, with brand spokesperson **Angelababy**, a prominent Chinese model, actress and singer.

International footwear designer



RECOVERY FOR GERMAN SHOE MANUFACTURERS

Footwear sales in Germany registered €1.44 billion in the first half of 2021, a 12.5% increase compared to the same period last year.

Speaking at a press conference at Micam in September, the secretary general of the country's main footwear and leathergoods industry association, HDSSL, **Manfred Junkert**, said he was pleased to see this increase. He pointed out, however, that the industry had still not regained pre-pandemic levels.

During the six-month period in 2021, footwear manufacturers employed around 14,600, a fall of 6.2% year on year.

HDSSL has said lengthy lockdowns and shop closures in Germany because of covid-19, led many footwear manufacturers to take measures to cut their workforce. There was government support for companies and many shortened their working week, but this did not halt job losses of almost 1,000.

Mr Junkert said Germany's shoe manufacturers were conscious of a shortage of skilled workers and of employees with digital skills and were now actively recruiting again. He said he was hopeful that a return to office work, to exhibitions and other business events and to cultural events would lead to a further recovery in sales for makers of formal shoes, including HDSSL member companies.

Raphael Young consulted on the collection, which local media said represented an overall "upgrading", a more premium, fashion-forward repositioning for Red Dragonfly.

NEW HEAD OF LEATHER AT TATA INTERNATIONAL

Tata International has announced that **Atul Nagrath** has become new head of its leather products division, taking up the role this September.

He will replace **Vembu Muthukumaran** who is to leave Tata after nearly 20 years.

Atul Nagrath has been working as head of procurement at the leather products division and, before that, ran its men's footwear business. He will be based at Ranipet.

Chief operation officer of Tata International, **Anand Sen**, said he believed Mr Nagrath would grow the group's leather business further and wished Mr Muthukumaran success in his next role.

SALOMON SELECTS CEO

Outdoor group Amer Sports Corporation has appointed **Franco Fogliato** as CEO of footwear and winter sports-focused Salomon. Mr Fogliato has previously worked for VF, The North Face, the Billabong group and Columbia Sportswear Company and has been based in both Europe and North America.

Most recently, he served as executive vice-president for omni-channel at Columbia Sportswear. 📌

Industry&Innovation

GORE UNVEILS NEW, THINNER MEMBRANE

WL Gore has announced a new expanded polyethylene (ePE) membrane called ePE by Gore.

The membrane is formed through combining ePE with polyurethane, Gore revealed, to create a durably waterproof, windproof and breathable membrane with a high strength-to-weight ratio, at roughly half the average thickness.

Gore said that it could achieve this by manipulating the polyethylene to form a highly porous, strong polymer framework, which allows vapour to pass through while blocking water and wind. The membrane can then be bonded to fabrics to create a Gore-Tex laminate.

PURE UPDATE

Materials specialist PrimaLoft is launching an updated version of its renewable PrimaLoft PURE range, which reduces carbon emissions by up to 70% compared with "traditional production methods".

When it launched in 2019, PURE (produced using reduced emissions) brought down CO₂ emissions by 48% compared with the usual process, partly though using 100% post-consumer recycled fibres but also because the technology was engineered to bond through exposure to air, instead of the heat from an oven.

Canadian brand Kodiak was the first footwear company to select PURE, at the start of last year.

AGRICULTURAL WASTE FOR NEW SOLE

Oregon-headquartered footwear brand Keen recently launched Harvest, a new collection of cotton canvas sneakers with a "plant-based" outsole and midsole which it described as upcycled from industrial agricultural waste such as husks, leaves and stems.

Specifically, 51% of petrochemicals typically used in the outsole and 35% of petrochemicals typically used in the midsole – both of which are polyurethane (PU) – have been replaced



SIMAC IS STICKING WITH SEPTEMBER SLOT

Italy's main industry body for footwear and leather technology developers, Assomac, has said the success of Simac-Tanning Tech in September was "beyond expectations", according to feedback it received from exhibitors.

Assomac said it was proud that the events marked a restart for technology companies to the manufacturing sector. Across the three days, there were just under 5,000 registered attendees, with 67% of them from Italy and the other 33% from a range of 50 countries. The association confirmed that it is keeping the autumn date for Simac-Tanning Tech and will not return to its previously regular February dates.

with a biobased polyol made from agricultural waste.

Calling this an "exciting step forward", Keen stated that the more plant-based PU sole has the same feel, performance and durability as before, but with a "lighter footprint".

THE UNBEATABLE MATERIAL

Digital design specialist Assa Ashuach attended the Micam X innovation hub in September to provide an update on a collaborative footwear project called Refream. Artists, scientists and designers have worked together on the project with the aim of "rethinking the manufacturing process of the fashion industry".

A new "biometric evolutionary shoe", the Evolve IM, is the latest product to have come out of London-based Mr Ashuach's involvement in Refream. It uses embedded, 3D-printed sensor technology to collect the wearer's biometric data. Other technology it uses includes thousands of Stratasys gel particles of different densities to capture

information about how the shoe works on the wearer's foot. "Through this, the shoe sends data to the Cloud so that new versions of the shoe will be better," he informed Micam X.

In spite of working closely with these new materials and technologies, Mr Ashuach then surprised some in the audience by saying: "Leather is an unbeatable material. It's optimised by nature and it's been growing on animals for millions of years."

KEEP SKILLS ALIVE

Luxury brand Fendi is running masterclasses on footwear at the Ostilio Ricci State Professional Institute for Industry and Crafts in Fermo in Le Marche to train a new generation of artisans to work with "precision, dexterity and creativity" as part of a project spearheaded by industry association Altagama.

The company is the first of 15 that will work with schools to promote Italian know-how, consolidate the school-business alliance and help reduce the level of youth unemployment.

ADDITIVES TO ADDRESS IMPURITIES IN RECYCLED PLASTIC

Chemicals group BASF has launched a range of additive solutions with the aim of addressing “imminent needs in plastics recycling”.

Recyclers and plastic converters are facing quality and performance issues when processing recycled polymeric material, BASF said. Its new range of additives, called IngraCycle, will improve the quality of these recycled plastics by decreasing the level of impurities and contaminants they contain.

The plastics industry is seeking ways to incorporate higher content of recycled polymeric material in all major applications, the company said, to meet sustainability goals while facing growing consumer concerns and stricter regulatory requirements to reduce plastic waste. But it said mitigating the quality deficiencies that arise from thermal and mechanical stress during the recycling process remained a challenge.

TEXON SAYS PANDEMIC DID NOT SLOW R&D

To prove the point, it put a range of new technologies under the spotlight at Lineapelle in September. These included ProWeave jacquard weaving technology and a range of structural component products that have been re-engineered to make them more eco-friendly, with boosted recycled content.

ProWeave delivers zonal, multi-directional stretch, which provides stronger and enhanced structural support as well as greater creativity in footwear design, it said.

ISA TANTEC LAUNCHES FIRST MYCELUM-BASED MATERIAL

Footwear-focused leather manufacturing group ISA TanTec has confirmed that a new division, Creation of Sustainable Materials (COSM), has launched its first product.

The first material to come to market under the COSM label is called HyphaLite HP. It is 80% bio-based, complies with brands’ restricted substance lists and is, according to ISA TanTec, biodegradable.

Hyphae are the filaments that make up mycelium. The Lite part of the

material's name comes from the LITE (low impact on the environment) system that ISA TanTec uses to produce leather with low consumption of water, chemicals and energy.

ISA TanTec confirmed that it is bringing HyphaLite HP to market to offer footwear brands an alternative to petrochemical-based synthetics.

NEW VERSION OF PREDICT

Fit and comfort have been the key areas of focus for sports brand Salomon in an update of its Predict running shoe. On launching Predict 2 in the summer, the company said it was offering “exceptional levels of fit and comfort” in the shoe, promising runners the ability to adapt to any stride and all terrains.

Cushioning comes from the brand’s proprietary Infiniride foam and the shoes fit system includes a seamless interior in which the forefoot is “enveloped as though by a sock”.

SHOE CELEBRATES MONT BLANC

Footwear brand inov-8 has unveiled a limited-edition version of its Trailfly Ultra G 300 Max, the Ultra G 300 Max running shoe. The black and white shoe features the height of Europe’s most famous mountain (4810m) on its midsole and footbed. It also has contour lines – inspired by mapping from The Alps region – across its upper.

The shoe, is the only running shoe to use both graphene-enhanced foam and rubber. Designed for trail runners tackling ultramarathon distance events and challenges, the shoe has become one of inov-8’s best-selling products.

FENC CONVERTED 6,000 TONNES OF OCEAN PLASTIC IN 2020

Taiwan’s materials specialist Far Eastern New Century (FENC) has published its 2020 Sustainability Report.

As the pandemic hit, the group moved into producing non-wovens and materials for personal protective equipment, including turning waste PET bottles into face shields and PET into blood collection tubes.

Douglas Hsu, chairman of FENC Far Eastern New Century, said: “To amplify the benefits of circular economy, we have been developing chemical recycling for polyester materials, and 2020, we had a breakthrough.”

The breakthrough is its chemical recycling process of PET named TopGreen ChemCycle, which will be used by Coca-Cola Bottlers Japan, and was announced last August.

FENC has collaborated with adidas and Parley for the Oceans on the Ocean Plastic since 2016, keeping waste plastics from the ocean. In 2020, the scope of the project was expanded, capturing over 6,000 tonnes of ocean plastic, which were converted into new products.

REEBOK REVISITS AIRBAG MATERIAL FOR FOOTWEAR COLLABORATION

Reebok has produced a limited edition made with leftover airbags in collaboration with South Korean label Kanghyuk, following an initial collection last year.

The Reebok x Kanghyuk SRS Classic Leather for Advanced Concepts features an upper made using material from Kanghyuk’s ready-to-wear collection.

ECONYL STEPS OUT OF COMFORT ZONE

Italian material specialist Aquafil has launched a website for Econyl to target the consumer market, rather than dealing only with the B2B sector.

Customers will be able to shop products made from Econyl, which is made from waste nylon such as fishing nets and carpets and can be regenerated without losing quality.

Initially launching with 15 brands including ACE, Aisy dance, Botanical Beach Babes, Tenue De Soleil and WAO, Aquafil plans to roll out the e-shop to other “sustainably minded businesses who are aligned with its vision for a better future”.

The website will also include blogs and features on topics such as sustainability and the UN’s Sustainable Development Goals.

Giulio Bonazzi, CEO and chairman of Aquafil, said: “In this very challenging historical moment, we are looking to the future with very different eyes. We stepped out of our comfort zone, something we know very well. We want to get closer to consumers and create a community where people share values and dreams for a better future. We envision a sustainable future driven by the responsibility to change the world one choice at a time.” 🌱



Backtrack

World Footwear's publishing cycle and limitations on space make it impossible for us to run more than a carefully selected sample of news from across the industry. However, we publish hundreds more stories on **www.footwearbiz.com**. The site is updated every day with news from every continent and every part of the industry, making footwearbiz.com one of the most

comprehensive archives of news anywhere on the web for the global footwear industry.

We list below just a few of the headlines that have appeared on the site in recent weeks — **www.footwearbiz.com** allows you to read those you have missed.

06 OCTOBER 2021

COTANCE renews calls for zero allocation for leather

Applications open for €500,000 footwear recycling scheme

Winners selected for Taiwan's 'Real Leather, Stay Different' competition

29 SEPTEMBER 2021

Footwear export growth for Pakistan
Hoka unveils 'race-capable' footwear for all

Lineapelle surge prompts hope of 'big comeback' for footwear leather

Sneaker redesign part of fourth Puma-BALR collection

28 SEPTEMBER 2021

Visitor quality made Simac worthwhile for Elitron

27 SEPTEMBER 2021

Availability of supply is the hot topic at Tanning Tech

New FDRA guide on EPMs gets help from Nike, VF, Allbirds and others

24 SEPTEMBER 2021

Oboz parent group promises global presence as revenues grow

AAFA appeals to Biden as shipping crisis worsens

23 SEPTEMBER 2021

Kodiak gives nod to suppliers with 'snikers' collection

Reopened exhibitions are a show of confidence

22 SEPTEMBER 2021

Foot Locker completes acquisition

China applies to join Pacific trade agreement

Furla debuts at Micam

Footwear deal aims to restore Tacchini 'to original majesty'

21 SEPTEMBER 2021

Visitors return to Micam

20 SEPTEMBER 2021

Nike launches 'most sustainably-minded' performance shoe

17 SEPTEMBER 2021

Xiansheng shoe factory at centre of Putian covid storm

16 SEPTEMBER 2021

Record H1 results for JD Sports

Saucony chooses suede for fastest-shoe update

15 SEPTEMBER 2021

Bio-based material to help ambitious Crocs deliver targets

Putian shoe factories close because of covid spread

Redress Design Awards' winner to launch collection with Timberland

14 SEPTEMBER 2021

Dior's 'Designer of Dreams' blooms in Brooklyn

Support from Asics for online fitness academy

13 SEPTEMBER 2021

Archive Liberty prints bring flower power to Puma shoes

CLIA participates in major Dalian fashion fair

10 SEPTEMBER 2021

Fila exhibits at Gwangju Design Biennale

08 SEPTEMBER 2021

Microplastics standard one step closer to formalisation

Allbirds pops up in Gangnam style
Senior appointment at BLC

07 SEPTEMBER 2021

Synthetics get a free pass on methane
On lunge forwards with IPO

06 SEPTEMBER 2021

Authorities wrong to block deal, JD Sports says

02 SEPTEMBER 2021

Allbirds navigates IPO

A strong six months for Caleres

01 SEPTEMBER 2021

Inditex is the loser in Dr Martens court case

China's Red Dragonfly soars 17%

New Nike biomaterial to replace plastic

Footwear automation boost from new Covestro idea

Truck company works with Wolverine on Labor Day collection

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Quality in Puma's sights

Rwanda could build industrial park for leather

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Xtep gets H1 boost

Peroni toasts Italian leather sneaker collection

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UK footwear trade show announces line-up

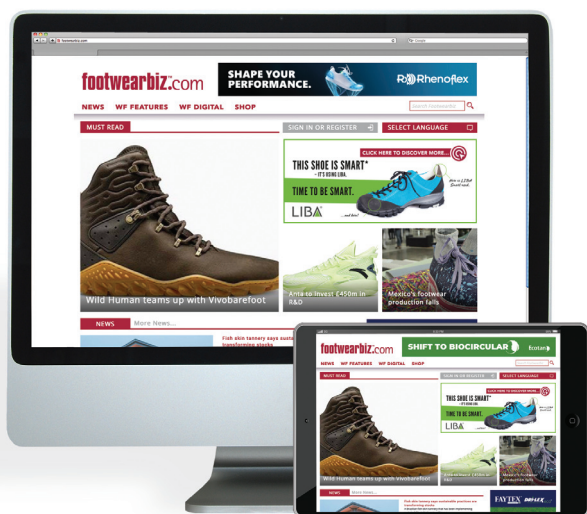
Adidas hits on 'no-dye' golf shoes

New investment leads Lotto to dream big

Innovation for famous Puma football boot



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DESMA - 75 years young

DESMA celebrates 75 years in business this year, an achievement of which it is justifiably proud. The company had intended to celebrate this milestone with a special anniversary edition of its House Fair this September but, due to the covid-19 pandemic, it, like so many other gatherings and exhibitions, unfortunately had to be postponed. In view of this and as an acknowledgement of DESMA's contribution to the footwear industry, *World Footwear* is reviewing the company's growth from small beginnings and a wealth of subsequent technical achievements over those 75 years.

Originally founded in 1946 by Herbert Ludwig as Deutsche Spezialmaschinen Co. U.E., the company initially produced a number of products among which were sole presses and roughing machines for the footwear industry. In 1955, it introduced the DESMA 100, a simple electrically heated vulcanising press for direct moulded slippers using microcellular rubber. Although

only a single station machine and crude by modern standards, it saved a large number of separate operations and made a real impact. The 200, 201 and 202 machines that followed were able to produce other types of footwear including sneakers and basketball boots. DESMA was on its way.

In 1961, it introduced its 606 moulding machine for processing PVC granules into footwear soling. It was a massive 15 tonne machine that caused a sensation as only two operators were needed to produce 1,000 pairs of boots per day, compared to 25 that were needed to produce 700 pairs using existing methods. It was followed by a succession of PVC injection machines including the 701, with the first one going to adidas. It proved to be a winner and no less than 1,500 in total were sold. Successes achieved by German sportsmen and women wearing footwear produced on this machine gave the company's technology a tremendous boost globally.

DESMA's new facility in Achim, Germany, opened last year with 12,000m² factory and warehouse space plus a further 4,500m² of office. ALL CREDITS: DESMA



ROTARY TABLE

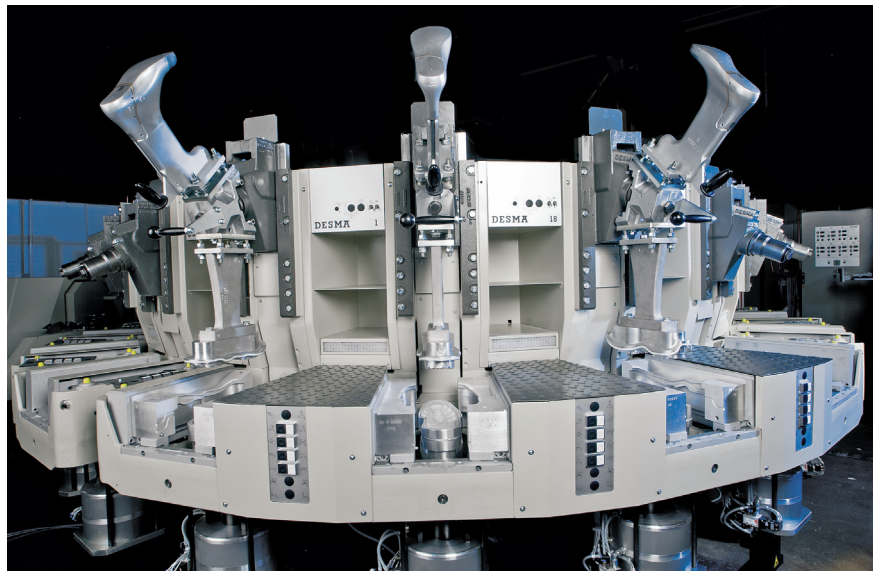
Around the same time, it introduced its first rotary moulding table based on those of Foster-Yates in the UK but with an additional gear mechanism that translated continuous rotary motion into an intermittent one. This meant that on a rotary injection moulder, the mould injection point could be aligned precisely in line with the injection valve each time the table stopped. The rotary moulding table is in fact perhaps the most significant development the company has ever made, as it became the central feature of DESMA PU (polyurethane) moulding machines ever since.

There are two main types of table, pouring and injection. In the former, pouring units (manually or robotically controlled) pass over an open mould and pour in the correct amount of material. The mould is closed and the material (usually foamed PU) expands until final hardness is reached. Those for use with injection moulding have the material injected into a closed mould using low pressure units in front of the rotary table. Moulds on these tables open horizontally and there can be varying numbers of stations to cater for all sizes of factory output. The rotary table also made it possible to introduce increasing degrees of automation and the sophisticated manufacturing systems we see today.

DESMA has continued to optimise the direct soling process ever since. What began with manually operated machines is now performed by highly automated rotary table machines with up to 36 individual stations. The degree of success achieved can be demonstrated by the fact that every tenth pair of the 24 billion pairs of shoes sold annually worldwide prior to covid-19 was produced via the direct soling process. While it has spread its wings to envelop new technologies over more recent years, it has never lost sight of its origins and direct moulding technology based on the use of PU as a soling material remains the foundation of its business.

AUTOMATION

During the 1980s, the company introduced robots in order to assist the production process. It had realised early on and, long before anyone had even begun to think about Industry 4.0, that robots and automation could play a vital part in cost-effective production of



The rotary table principal has been the foundation of all DESMA's PU moulding machines.

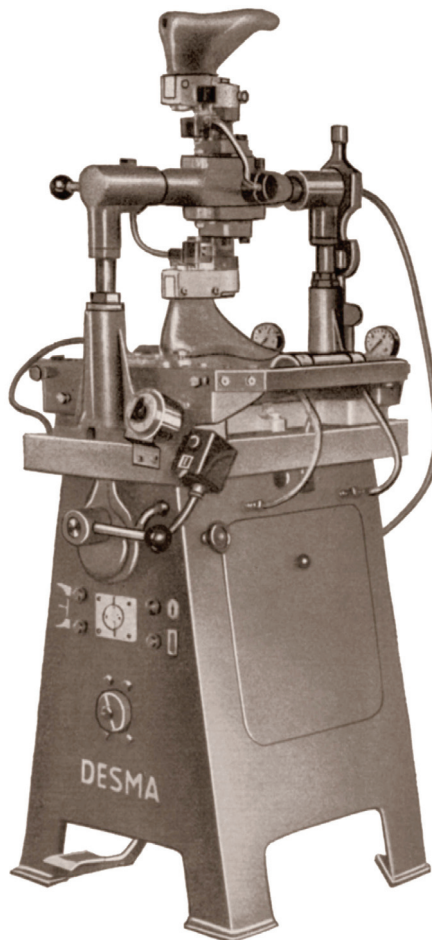
quality footwear. Their big advantage was that they could be programmed to perform a given task with absolute precision and at a consistent rate, time after time, something that even the most skilled human operators could not do.

In order to save time and money, it

cooperated with ABB in Sweden, which lent it a robot for trials. This was adapted to the special needs of the footwear industry and the first production IRB 1000 robot was supplied to adidas in early 1987. It was an immediate success and constant improvements and updates enabled robots to be used in an increasing number of footwear applications. The company has now installed more than 1,500 of them with software and tools to meet the demands of footwear manufacturers worldwide and numerous companies have adopted its automation solutions.

At the same time, DESMA was also working on an automated work flow system that would allow robots to be integrated into a total manufacturing entity. This was AMIR, (automated material flow technology with integrated robots). The system contained an amalgamation of all known conveyor technology for bringing goods to and from all the machines and work centres on a production line using data technology and with links to production planning, operational data capture and processing. AMIR rationalised and streamlined production, reduced variables and was yet another footwear industry first.

Over time and working closely with its customers, the company has developed robotic solutions for a wide range of key shoe making operations including roughing, cementing, inserting sole plates on safety footwear, spraying mould release agents, flash



The DESMA 100 was the first step in the company's path of innovation and development of direct soling systems.

trimming, last slipping and many others besides. Any or all of these can be incorporated into an AMIR system to provide fully automated production from lasted upper to finished shoe. The only human involvement is the actual force lasting of the upper over the moulding last which is something that robots have so far been unable to master.

INNOVATION

In addition to automation, DESMA has also come up with innovative solutions in response to the ever growing trend towards customisation. One that it regards as being perhaps its most important development in recent years is called MSI (Multi Section Injection). The new injection techniques it employs coupled with its own mould making capabilities, enables PU midsoles to be produced in a wide range of designs, colours and characteristics, including combinations of highly diverse materials as well as different degrees of hardness and shock absorption.

The degree to which a midsole can be customised includes varying the degree of hardness or softness and shock absorption can not only be varied from midsole to midsole but also for different sections of the same midsole. In addition, this can all be individually controlled and, if required, changed from shot to shot. This high degree of customisation offers optimum comfort, energy absorption and stability. Production nevertheless still takes place



Multi Section Injection allows a high degree of customisation of midsoles in terms of hardness, softness and shock absorption.

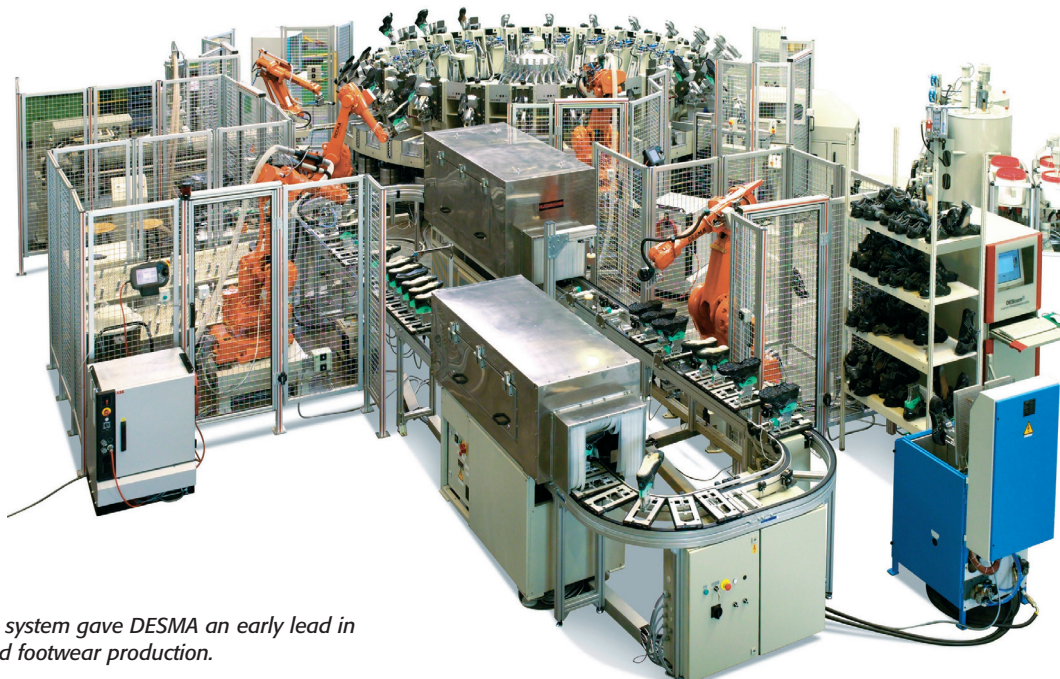
on a conventional rotary machine using standard moulds; the clever part is the sophisticated variable mixing head that is employed.

Two further processes, Centre Wedge and DESwing, make it possible to enlarge the range of design options and/or features for multi-coloured soles as well as the mix of different materials. The company has also developed an in-mould labelling process in which the use of integrated plastic sheeting or textiles creates new product variations for outsoles, offering a virtually unlimited choice of colours and effects for the finished shoe. Only a few short years ago, none of this would have been possible, which only goes to show just how quickly DESMA's technology and innovation has advanced.

The past 20 years has seen further

innovative shoe making ideas. The DESflow system has simplified the production of TPU (thermoplastic polyurethane) soles and reduced costs by allowing standard aluminium moulds to be used. The Laser Cell revolutionised the preparation of lasted uppers for sole attaching in the cemented process by using a laser instead of a roughing brush to improve both accuracy and consistency in terms of quality. The Sole Processing Cell that followed had a sole fed in at one end to emerge at the other fully treated and ready for attaching. It also applies precisely the exact amount of adhesive needed to create a satisfactory bond, resulting in significant cost savings.

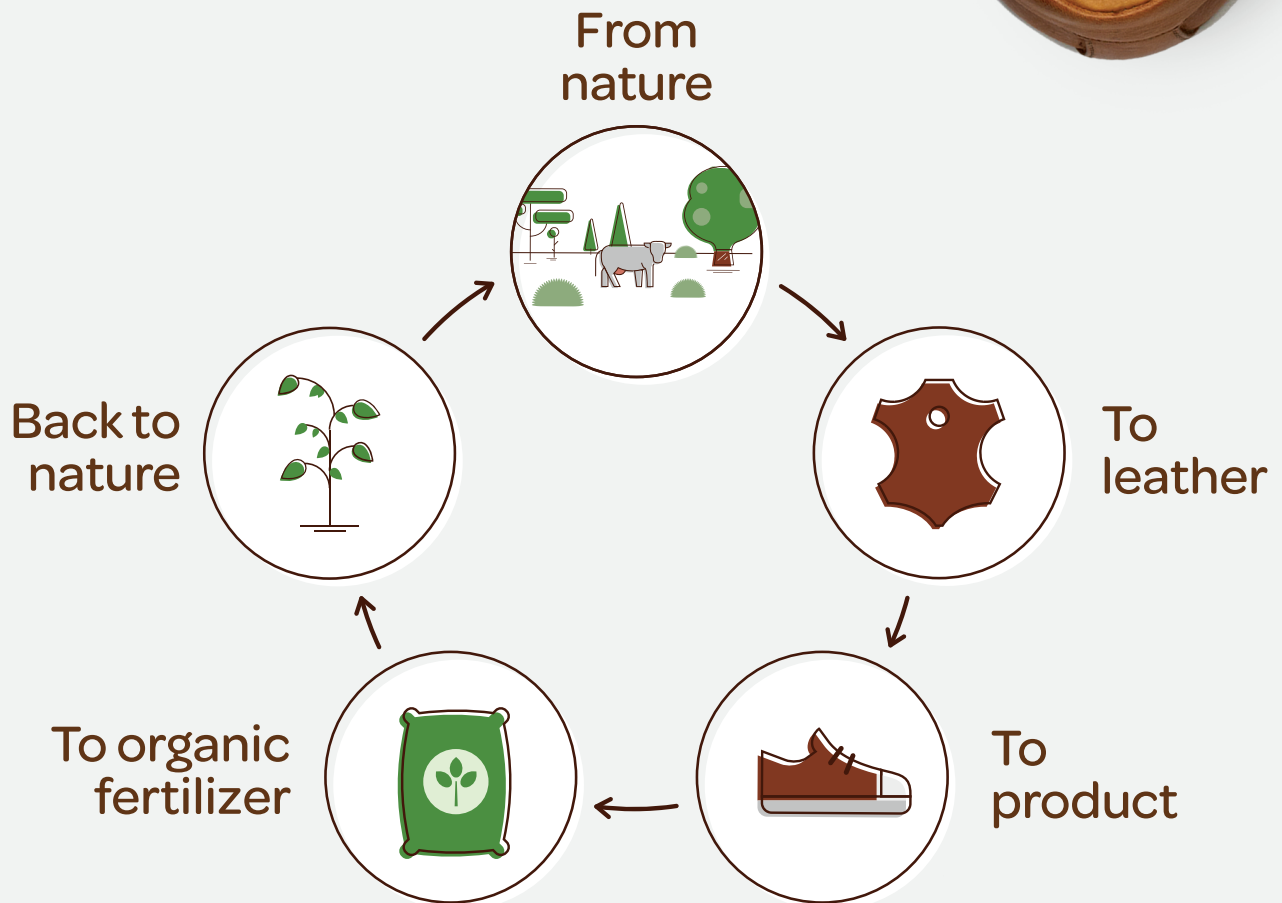
One of the most important factors in the production of PU soling is the stability of the processing conditions



The AMIR system gave DESMA an early lead in automated footwear production.



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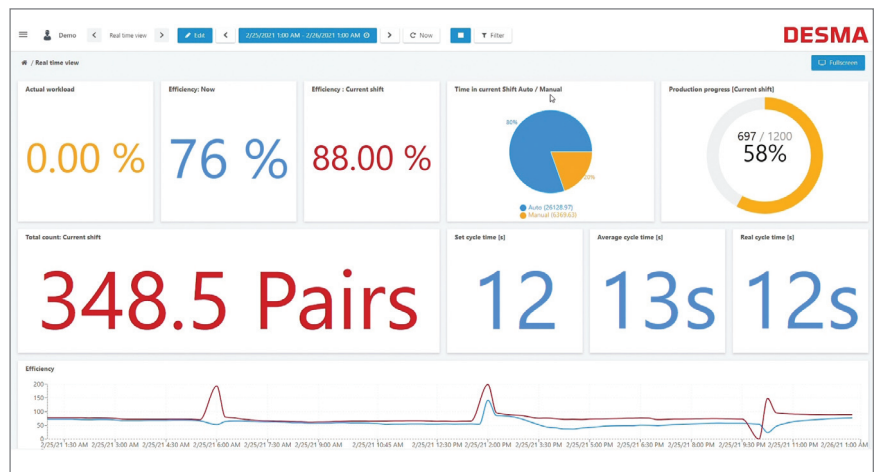
and, in 2010, DESMA announced its RGE 4011 mixing and injection unit. This employed low pressure mixing technology, where an auger is used to mix the polyol and isocyanate. As a result, all varieties of material could be processed, whether ether- or ester-based, as well as additional solid fillers even when they comprised a large proportion of the formula. The technology was able to handle such a huge variety of different PU components that it set a new standard for efficiency and versatility.

NEW CONCEPTS

In 2014, the company launched its Quadwrap process whereby a casual shoe could be produced on a single DESMA D522 machine and two mould sets per size for left and right feet. The shoe was broken down into four parts using different densities of PU: a load bearing inner frame to stabilise the shoe and carry the lacing, a flexible upper to provide the desired visual aspects, a lightweight midsole to provide cushioning at low weight and a slip and abrasion resistant outsole. Quadwrap is a revolutionary concept that has only been made possible by DESMA's extensive technical knowledge and earlier innovations.

Like the fashion sector, the shoe industry is driven by short collection cycles and enormous pressure in terms of time and cost. DESMA and German knitting machine manufacturer Stoll recently entered into a cooperation in order to find a solution to the problem. The two partners have developed an integrated solution that enables innovative shoe models to be manufactured using a highly efficient process. It starts with the production of seamless, 3D-knitted uppers, which are then hardened in order to activate the functional yarns woven into them, before being attached directly to dual-layer sole constructions.

The advantage of this method is that it minimises lead times in the development and production process and allows the machine settings to be adjusted for optimum product quality without any additional investment. The machine technologies used are Stoll flat weft knitting combined with DESMA direct soling which together reduce the number of time consuming production steps required to a minimum. It is also



Smart ShopFloor is designed to monitor and improve the overall efficiency of DESMA's rotary moulding machines.

claimed to be a sustainable innovation, as the seamless manufacturing technique means there is no scrap or waste, so no resources go to waste.

THE FUTURE

Covid-19 has hit the footwear industry hard and, at the time of writing, it is still struggling to get back on its feet. One thing of which there is no doubt is that further changes are coming. DESMA sees two major developments that will dominate how the industry operates going forward – one is automation and the other is data.

Even before the pandemic, the industry was already asking the (rhetorical) question of whether automation could be the key to long-term success. Although a large proportion of footwear is still produced manually worldwide, automation is nevertheless becoming increasingly prevalent. Most experts are agreed that footwear production in the future will largely be achieved without human manual labour, even if some problems still have to be resolved. A few years ago, adidas CEO Kasper Rorsted remarked, "The greatest challenge facing the footwear industry is to develop a robot which can insert shoelaces properly. As yet, there is no technology available to do so." In view of the companies past record, it might well be working on just such an idea.

As far as data is concerned, the company says that it considers this to be the 'new gold' and that profound data analysis is key to improving both the efficiency and the sustainability of footwear production. Its Smart ShopFloor suits a group of cloud-based

software applications aimed at increasing production output by improving the overall production efficiency of any of its direct injection machines.

Within the MDA (machine data acquisition) module, operation and machine data is read from the machine's SPS (signal processing system), sent to cloud-based data storage through the DESMA Gateway and displayed as and when required. Live access to machine data can be gained anywhere and at anytime. Different widgets illustrate key KPIs (performance indicators) and allow a comparison to be made between current and historic values to identify any bottlenecks. The MMS (machine maintenance system) module due to be launched in early 2022, will enable users to digitally plan, allocate, document and improve regular maintenance tasks for DESMA rotary machinery.

The companies core technology is automation which it adopted in the 1980s and direct injection of PU soling systems which it pioneered even further back. Many of its developments and innovations have been industry firsts and trend setters, and it is without doubt a global leader in its field.

Today, automation technology is very much a growth sector for the company as data systems promise to be in the future. DESMA has a tradition of pushing technology just that little bit further, so we may expect it to continue at the forefront of technical innovation whatever happens. It can certainly look back with pride on 75 successful years and forward to an equally successful future. 🔄



ALL CREDITS: SPINNOVA

Spinning tannery waste into a textile

Spinnova Plc is a very interesting company indeed. It was originally formed in 2014 as a spin-off from the VTT Technical Research Centre of Finland since when it has been developing and producing versatile, recyclable yarns from, mainly, paper-grade wood pulp. The process it uses exploits the manner in which pulp flows and is why the company says that its method for developing pure, bio-based materials for the textile industry is totally unique. Using a very specialised technology, it mechanically refines the pulp to transform it into a fibre suspension, ready for spinning without any harmful use of chemicals.

Upon spinning into filament, the suspension flows through a unique nozzle at high pressure. The right kind of

extrusion causes the fibrils to rotate and align with the flow to create a natural textile fibre. This fibre is then simply dried and collected, ready for spinning into a yarn. Spinnova says that it is the only company in the world able to convert cellulose into textile fibre this sustainably.

Needless to say, safekeeping the process is crucial and there are currently 36 international patents granted and over 40 more pending, in seven different patent classes covering the most critical elements of the process.

One of the fibre's unique features is that it can be upcycled, again without dissolving or use of harmful chemicals. This suggests that in the future, a product could be taken back from the end user, delivered to the processing plant and ground back into microfibrils. Spinnova says that the upcycled fibre is

just as good, if not better, quality than the original fibre and can be turned into new products without having to add any fresh fibres. This is a recent finding and the company is still in the process of making further trials to see how many times this can in fact be repeated.

NEW PARTNERSHIPS

Because of the way the process works, almost any cellulosic biomass can be used and, although wood is the spearhead raw material, the company has also looked into agricultural waste such as wheat straw and cotton waste. It has now gone a step further and added leather to the list of natural raw materials it can work with. To do this, it has joined forces with wet blue, crust and split supplier KT Trading to produce what the two companies call 'a new

category of sustainable and circular textiles'. The intention is to use waste from the tanning process as a raw material for a Spinnova yarn that can be woven or knitted into material for shoe uppers and other applications. They intend to begin pilot-scale production of the yarn, which is called Respin, before the end of this year.

The chief executive of KT Trading, Kristian Geert Jensen, says that he views setting up the Respin joint venture with Spinnova as a step forward in making the leather industry more circular. Based in Switzerland, KT Trading has close ties to Ecco Leather and other tanning companies. KT itself works more as a wholesaler of semi-finished leather, sourcing pre-selected material from leather manufacturers, storing it in its own distribution facilities and supplying it when required for tanners to turn into finished leather. The company is, therefore, in the slightly unusual position of having tanners both as its suppliers and as its customers. Ecco Leather, for example, is both.

WET BLUE SHAVINGS

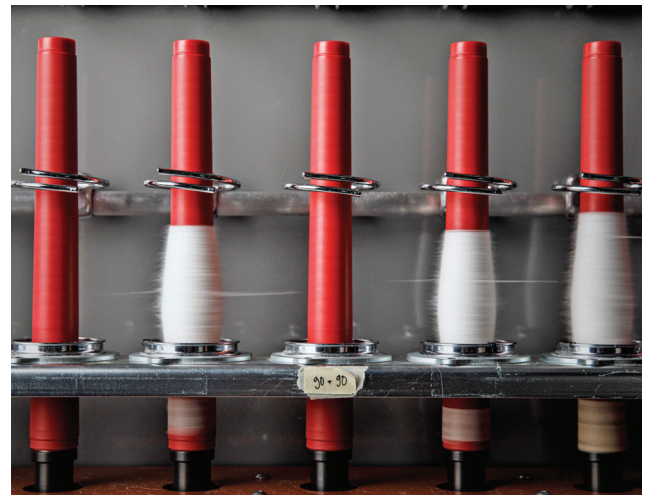
Ecco's in-house research department began to look into Spinnova three years ago. Now, wet blue shavings from the Ecco Leather tannery in Dongen in the Netherlands will provide, via KT Trading, some of the initial raw material that will be shipped north for conversion into Respin yarn by Spinnova. A pilot plant for the new yarn will be part of a new manufacturing facility that is already under construction at the yarn manufacturer's headquarters in Jyväskylä, a university city in central Finland. Spinnova chief executive and co-founder, Janne Poranen, says his company is delighted 'to close the leather loop' with Ecco and KT Trading as partners.

Kristian Geert Jensen, confirms that the woven and knitted fabrics resulting from Respin yarns will be suitable for use in footwear uppers, which goes some way towards explaining Ecco's interest. In fact, it is a compliment to Ecco's vision that it saw this as a possibility three years ago as Spinnova's work with Bergans (outdoor clothing) only became public knowledge in 2019, followed by announcements about its further work with Bestseller in 2020 and H&M in 2021 (both clothing chains). All of these big-name partnerships are, however, the fruit of years of proof-of-concept work.

Jensen says that the Respin materials deriving from leather waste will provide a good alternative, not to leather itself, but to the synthetic substitutes that some brands use instead of leather. "Leather is an amazing high-quality material with unique properties," he insists, but also points out that, in spite of extensive effort, tanners have so far been unable to find any 'real sustainable solution' for the type of waste that will now go into Respin. "With this new textile, we have taken another step towards completing the circular economy for leather," the KT Trading chief executive adds. "We have made a truly unique breakthrough."

BREAKTHROUGH TECHNOLOGY

Respin could be a real breakthrough for companies that want to move away from petrochemical-derived synthetics as more and more of the huge athleisure market adopts woven and knitted upper technology currently dominated by polyester and nylon fibres. Producing them with a fibre that is in all senses leather scores all round. It is compatible



Spinnova yarns from wood waste are already used by major clothing brands and it will employ the same technology to produce Respin for footwear.

with the latest shoemaking technology and, at the same time, makes use of a raw material that would otherwise go to landfill. Furthermore, processing leather waste will require no new development in Spinnova's technology. The system it has put in place for transforming waste from the wood industry into yarn, will work with waste from tanners just as well.

"It's very simple," says chief technology officer and co-founder, Juha Salmela. "It's the combination of two factors, the raw material sourcing and the technology we use, that makes this work." It is clearly more difficult to achieve than he makes it sound, otherwise all fibre producers would soon be doing the same thing. Spinnova produces its yarns without complex chemical processes and without dissolving anything. Lifecycle assessment results show figures for carbon footprint and water consumption that are 'minimal compared to anything else'. Naturally, the process generates no microplastics and is, in fact, zero waste.

CORNERSTONE INVESTOR

What has been the reaction from footwear brands so far? Earlier this year, the yarn manufacturer announced its intention to go public by listing on the Nasdaq Helsinki First North Growth Market. It has also been able to announce that it is taking this important step with the backing of another major partner, adidas. The global sports group has committed to being one of Spinnova's cornerstone investors. As part of the agreement, adidas has 'committed irrevocably' to invest €3 million in Spinnova when the company's initial public offering is launched.

Adidas has said little so far as to what it hopes to gain from this commitment, but it seems safe to assume that, like Ecco, it sees potential for using Spinnova yarns in its products, including woven or knitted Respin in some of its shoes. "We feel we are an ideal match with the adidas sustainability strategy," Janne Poranen says. "Our scalable technology platform can make fibre out of renewable materials that are abundantly available, provide full recyclability and quick biodegradability." These abundantly available, renewable raw materials now include waste from the leather-making process, something that has long been sought. 🔄



Post-operative healing *Hallux valgus is a condition that occurs when a lateral deviation of the great toe causes a deformity on the first MTP joint, commonly known as a bunion. It is the most common forefoot problem in adults, with women the most affected frequently due to wearing tight-fitting and/or high-heeled shoes. If ignored, the condition can become increasingly painful to the extent that remedial surgery is called for. Incorrect flexion location in post-operative footwear can adversely affect the healing process.*

CREDIT: SHUTTERSTOCK/THEAPFLUEGER

Flexion location

According to research by a team led by Dr. Anette Thompson at the University of KwaZulu Natal, Durban, South Africa, everyday footwear worn by millions of people could have a built-in flex point which might not match the anatomical fulcrum location of an individual's foot. This can adversely impact joint function and, particularly, may delay healing of an injured first metatarsophalangeal (MP) joint in instances such as post-operative hallux valgus, a not infrequent foot health problem for women. The team therefore carried out a study using 3D foot measurements taken from a group of 510 female participants of varying ethnic backgrounds to find the actual fulcrum location of their first MP joints.

To do this, the distance between the heel and the first MP joint was measured and expressed as a percentage of the overall length of the unshod foot. Similar measures for sandals and closed shoes were also taken and all three compared to existing shoe last data. It appeared that the location of the first MP joint could vary by nearly 10% of the overall foot length and that there were significant differences, ranging from 4% to 16%, between the South African study and design specifications used in Europe. Variations also exist between those in Europe and for North American lasts.

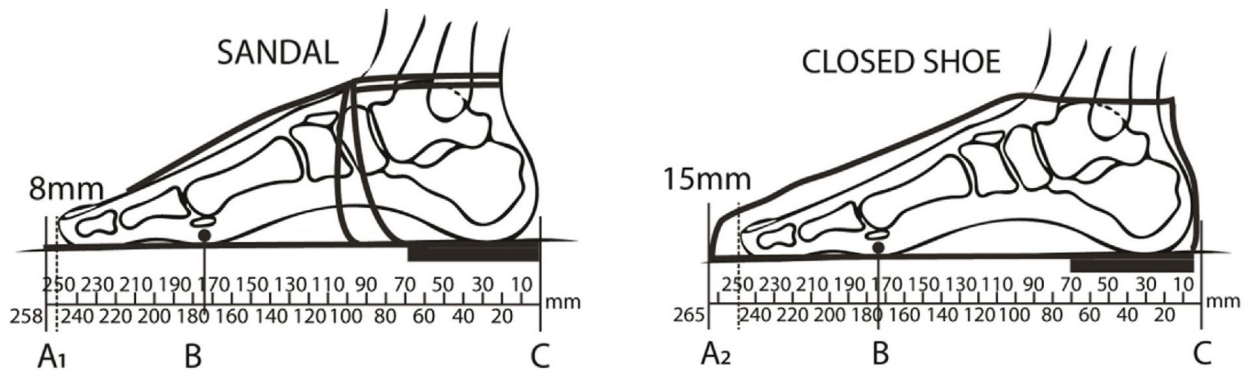
As women wear both closed shoes and sandals and lasts for the latter are shorter in front of the toes for cosmetic reasons, the team wanted to know if this had any effect. It found that, although a sandal last is shorter compared to that for a closed shoe, the location of the forefoot bend is set at the same percentage of overall last length regardless, resulting in

a different bend location for a shoe compared to a sandal.

To illustrate this, let us assume a shoe has a last length of 170mm. The bend location for the first MP joint would be located at 112mm using, for example, 66% of overall last length. Assuming the corresponding sandal last would be 163mm long, 66% of overall last length would place the bend location for the first MP joint at 108mm, resulting in a variance of 4mm from that of the closed shoe. Furthermore, the fact that the first MP joint was significantly further forward than the location of flexion in both instances (70% to 79% as against 66% or 63% as some research suggests), means that it is likely to be incorrectly located in most shoes and sandals. This raises important concerns regarding the potential of ill-fitting footwear to cause harm, particularly when worn post-operatively.

In actual fact, the extent of the possible first MP joint fulcrum locations in the trial sample, extrapolated between what it would be in sandals and what it would be in closed shoes, was found to be a median of 24mm wide and could range from 21mm to 29mm in zone width. Bearing in mind that the first MP joint cannot properly function as a fulcrum unless footwear has a matching flexion location, it would appear that women's footwear designs should therefore seek to incorporate a wide flexion zone located under the forefoot to permit an adequate range of first MP joint flexion locations. This also means that wider straps across the forefoot should be used for sandals, to provide coverage over the inner joint.

When investigating whether other variables were associated with location of the first MP joint, it was found that weight could



The example sandal last shown on left allows 8mm toe clearance in front of the toes (B–A1) while the corresponding closed shoe last shown on the right allows 15mm (B–A2). Thus the closed shoe last is 265mm long while the sandal last is 258mm. The lasts for either variation nevertheless place the flexion location at the same fixed percentage of overall last length, instead of using a measure related to the foot.

CREDIT: A T THOMPSON/ELSEVIER

have an impact, too. The trial included both underweight and obese subjects ranging from BMI 13 to BMI 56. The obese subjects (BMI > 30) may have exerted greater downward force on the medial longitudinal arch, thereby decreasing its height and so lengthening it, which could well shift the first MP joint further forward. However, the mean variance occurred near the 75kg point and it was thought that this weight could not generally be considered as an obese body weight for average-height (1.65m) adult women in South Africa (the global average in 2012 was 62kg).

It should also be noted that this trial measured participants unshod (zero heel elevation). Since the plantar fascia shortens when the heel is elevated, the percentage of overall foot length represented by the heel to first MP joint segment may vary at differing heel elevations. The foot segment percentages established in the trial cannot therefore be used for sandals or shoes with higher heels and this is something that Dr. Thompson says warrants further investigation. Furthermore, as the trial only applied to women's feet, it is not known whether similar results would be found for men. 🚫

Acknowledgement: For full details of the study, see Foot and Ankle Surgery 25 (2019) pp.340–347, 'Flexion location of the first metatarsophalangeal joint and the location of forefoot bend in general purpose women's footwear'. Anette T. Thompson, Bernhard Zipfel, Moise Muzigaba and Colleen M. Aldous. Copyright Elsevier Ltd.

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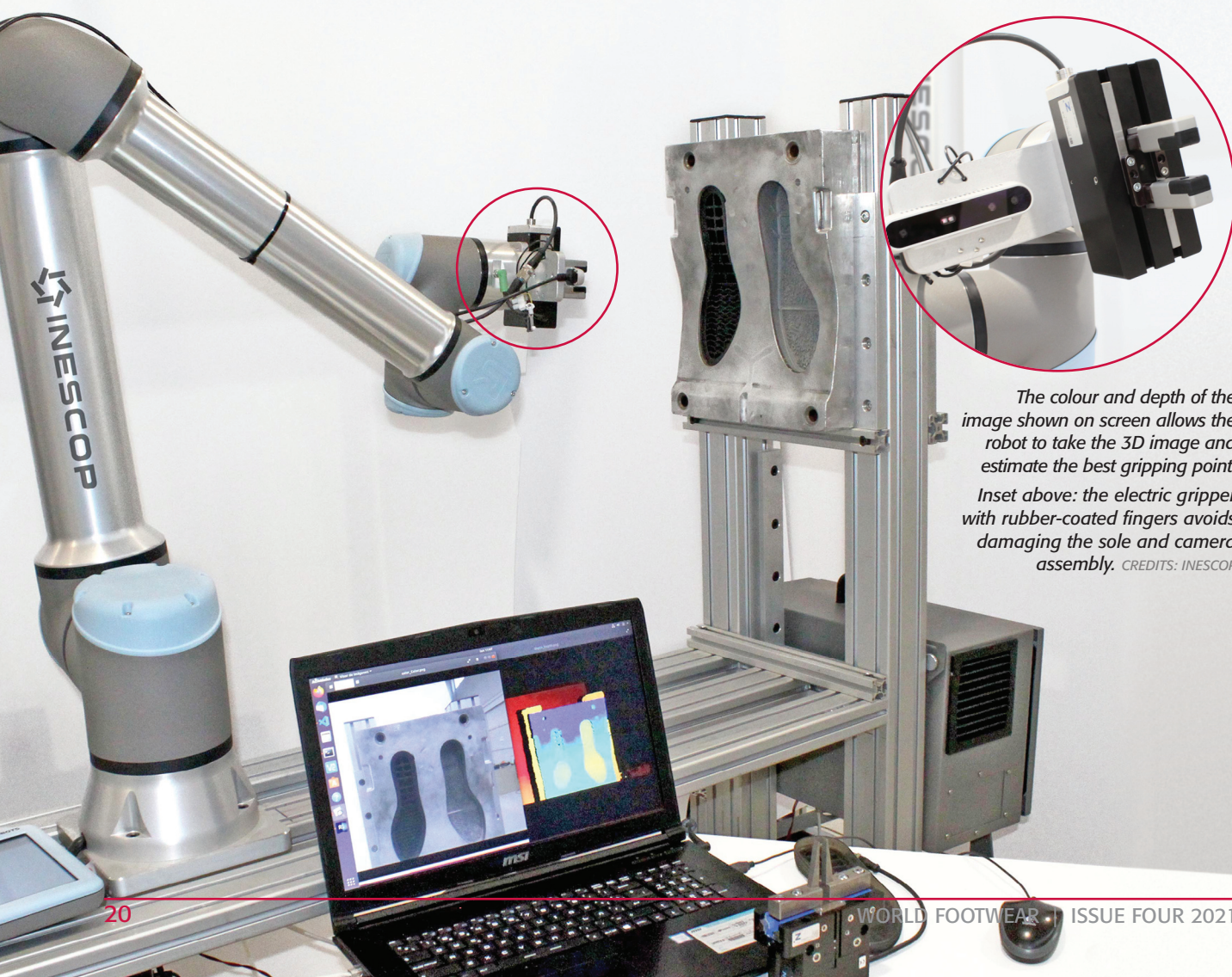
CARLOS VÉLEZ, M. DOLORES FABREGAT, JOSÉ FRANCISCO GÓMEZ, EDUARDO CALABUIG
INESCOP, SPAIN

Footwear production is a complex process that encompasses several phases that, in most cases, still have a strong traditional manufacturing component. However, with the technological transformation that the industry is undergoing, the sector's automation has been speeded up in recent years, giving rise to an improved product and making it more sustainable, from the economic, social and environmental points of view. But getting to this point has not been easy. In fact, INESCOP, after decades accompanying the footwear sector on its way towards digitalisation and sustainability, and adding value through technological and innovative solutions, continues to work in this direction, with special emphasis on the field that is the subject of this article: robotics.

On analysing the manufacturing side, it can be said that the footwear sector is still one of the most traditional and least automated when compared to others such as automotive or cosmetics. One of the main reasons is that it mostly works with flexible and deformable parts and materials. There is however another determining factor to be considered and that is because footwear is a fashion product where different brands design a wide variety of models that must then be manufactured in short runs to satisfy an increasingly demanding market that is looking for distinctive products. These issues, among others, make it difficult to implement conventional automated production systems, which tend to be very robust and adapted to large-scale production. They are also not very flexible and are costly to adapt to the

needs of the footwear sector.

The SoftManBot project, funded by the European Union under the Horizon 2020 research and innovation programme, was launched to address this problem. It is an industrial project that aims to develop a holistic and transversal robotic system for handling deformable and flexible materials used in the manufacture of products as diverse as footwear, toys, textiles and tyres. With regard to footwear, INESCOP identified and aligned the global objectives of SoftManBot with the operation of demoulding injected outsoles in order to work with other partners on its automation. Robotisation of this task presents a major challenge at a technological level due to the diversity of the materials injected and models produced, which leads to a great



The colour and depth of the image shown on screen allows the robot to take the 3D image and estimate the best gripping point.

Inset above: the electric gripper with rubber-coated fingers avoids damaging the sole and camera assembly. CREDITS: INESCOP

variability in extraction strategies. For this, INESCOP, together with an industrial partner Platinher Urban, chose a selection of models that were representative of the different requirements involved in the task and addressed the challenge of automating them.

DEMOULDING INJECTED OUTSOLES

Demoulding injected soles has many features that make its robotisation as attractive from a technological research point of view as much as it is necessary from an industrial one. One of the main reasons that led us to face this challenge was to seek an improvement in the impact of the ergonomics of this task on the daily life of production operators. Typically, an operator attaches various decorations, technical parts or brand inserts, after which the machine cycle begins. After injection and once the injected material has cured, the operator must remove the sole from its mould, which requires the use of considerable force and risky unergonomic body postures. If we add to this the repetitiveness of the task, the possibility of injury to the operator in both the medium and long term increases exponentially. Changing the method of extracting the soles from manual to one using an automatic system supervised by the operator therefore needed to be considered.

However, not just an ability to exert a high degree of force is needed to demould injected soles. In actual fact, the manual dexterity applied to the demoulding path is even more important, as has been stated by operators themselves. The integration of many different active and appealing robotic research areas, such as manipulation, human-robot interaction and artificial intelligence for robotics has therefore been required in order to successfully automate the task.

MANIPULATION

As stated, the handling of flexible and deformable objects is the main objective of the project; therefore, correctly gripping and manipulating the injected sole in order to demould it, is still a challenging task. To this end and working jointly with Platinher Urban, 12 models were identified which most represented the peculiarities of the

demoulding process in terms of materials, flexibility, grip, force required and dexterity of the path needed to demould the sole and more.

A UR10e collaborative robot has been used, as well as two different robotic grippers which are being developed by Zimmer, another technology partner in the project, to cover the different extraction needs. The gripper to be used in each case has largely depended on the difficulty of the extraction involved and the available surface area of the individual soles to be grasped when the mould is opened.

On the one hand, a Zimmer electric gripper which, among other things, offers a controllable stroke and grip strength, has been used when the surface of the sole available for gripping is the outer and visible part of the finished shoe. Such electric grippers are equipped with soft fingers designed not only to optimise the grip but also to avoid damaging or scratching the soles. On the other hand, a stronger Zimmer pneumatic gripper has been chosen when the surface of the sole available to be gripped is the inner part which is not visible when the shoe is crafted. This kind of extraction is usually the most challenging as the sole is embedded inside the mould so that the friction is very high. This pneumatic gripper is equipped with fingers designed to resemble the pliers that operators use to grasp deep inside the cavities of the injected sole before pulling with dexterity and strength to demould it without deformation or breakage of the final product.

An intensive and active research programme is being conducted by the different projects' technological partners (SIGMA, STAM, SORBONE) to integrate tactile sensors into the gripper fingers as they will be able to provide valuable information in order to contextualise the status of the contact between gripper and sole, and so help to prevent errors such as slippage, scratches or breakage due to bad grip.

AI FOR ROBOTICS

What makes humans expert manipulators is the connection between the brain and hands. As humans, we are capable of precisely controlling movements and integrating different sources of information such as visual or tactile, to plan and react almost

unconsciously. In an effort to replicate human behaviour, many different AI techniques are being applied. To this end, the robot end-effector is equipped with a 3D camera to provide the system with visual perception. Such visual information is forwarded through a deep neural network trained to estimate which is the best gripping point of the injected sole. Once the sole has been gripped, the decision-making module responsible for the pulling path will approximate a human operator's expert behaviour. This point is still under development and is one of the most innovative bits to solve the proposed problem.

HUMAN-ROBOT INTERACTION

In the context of the SoftManBot project, human-robot interaction (HRI) plays a fundamental role as the robotic solution will coexist and share the workspace with humans while working in a sequence. The development of the solution has considered the expectations and opinions of people with different profiles in the manufacturing workplace, such as operators, supervisors or managers, through interviews and questionnaires. An ongoing research line of the project focuses on the social interaction between the robot and the operator so that the latter feels safe and trusts and accepts the system.

To this end, the task will be performed by UR cobots, which are a new kind of robot designed to be collaborative. Moreover, the robotic system will count on different sensors to detect and contextualise humans around it and react accordingly, always putting security first. The robotisation of traditional manufacturing sectors such as footwear or toys is an important challenge necessary for their modernisation and improving their competitiveness and quality standards. However, it is not a trivial task and will only reach real solutions when based on a thorough knowledge of their peculiarities and applying the tools that new technologies offer us. 

This work is part of the SoftManBot project which has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 869855.

Manufacturing lexicon

SERGIO DULIO

The covid-19 pandemic has changed the world and our lives forever. The health situation worldwide will eventually improve, the pressure on the sanitary system will ease and the economy is already on the way to what appears to be, at least in some parts of the world, a very robust recovery. Yet some of the dramatic transformations triggered by it will stay with us for a long time, possibly forever. Travel, particularly business travel, will probably never get back to what it was before covid, workspaces are going through a profound revision in terms of where people spend their working time and how. Both these aspects play a role in how business will be done in future. It is therefore to be expected that manufacturing will not be spared from these effects and change indicators are already visible.

In general, shoe manufacturing is also on the way to a robust recovery and, in terms of volumes, global production is expected to get back to pre-pandemic levels relatively soon. A recent market survey shows that, in terms of value, the global footwear market will grow from \$365 billion in 2020 to \$530 billion in 2027, an almost 50% increase in less than 10 years. But some specific segments of the market, such as sneakers, are growing far more rapidly than others.

In 2019, they accounted for 16% of the global value of the entire footwear market and for 11% of the sales volume, an 8.3% increase in sales compared with 2018. By 2025 the total revenues of this segment are forecast to increase from \$70 billion to \$103 billion with a 48% growth, while athletic footwear will only grow by 35%, leather footwear by 12% and textile and others by 34%. Clearly a very dynamic sector that has the potential of outpacing all the others in response to consumption trends that seem to favour casual, easy and comfortable shoes over more formal or elegant ones. These

numbers are highly relevant for manufacturing decisions, the kind of technologies needed and for the organisation and location of manufacturing facilities.

We will therefore have to get used to a new set of words to describe manufacturing in the years to come. It is, in all respects, a new lexicon that defines a terminology framework for the future. Some of the words are new, some others were known and used before: customisation, on demand, simplification, reshoring, urban manufacturing, automation, compactness and deskilling. Let's examine them and learn how to navigate this new ocean of words and concepts.

CUSTOMISATION

The concept of customisation or mass customisation (MC) is not new and is normally attributed to Stan Davis who, in his book *Future Perfect*, gave a first representation of a market scenario where products, instead of being produced at scale all with the same features no matter what the individual tastes and preferences of consumers might be, would instead be tweaked and adjusted, as a tailor adjusts a bespoke jacket, for each individual customer. Since then, MC has received growing attention both by scholars, consultancy firms and industry in general. In the last few years several studies were published that confirm the great relevance of the trend to customisation among consumers and the major impact it could have on companies' business.

MC relies on a digital process that starts from capturing the desires and choices of an individual consumer and transforming them into data for manufacturing and an agile and automated manufacturing system that can handle individual orders and process them flexibly and efficiently.



CREDIT: SHUTTERSTOCK / ATK WORK

The pandemic has accelerated the engagement of consumers and their desires for personalised and unique products. So customisation is the first word to appear on our notepad.

ON DEMAND

Customisation has always been intended as the possibility given to individual consumers to 'personalise' to a certain degree the products (namely the shoes) they are going to buy. This is normally achieved by allowing them to make a choice among a specific number of product options implemented by the brand or producer. This approach certainly captures, as already said, the growing demand among consumers for products that better match their desires and choices. But there is a more profound potential that is enabled by digital technologies and flexible manufacturing systems: producing goods on demand, with or without customisation. This means being capable of triggering a manufacturing cycle, with the corresponding allocation of materials and human resources, only when a product has already been ordered and, possibly, purchased.

If the fulfillment of this demand is performed rapidly and efficiently, this new business model really has the potential to truly change the rules of the game, with great impacts on the economics and sustainability of the entire footwear value chain. This is because it transforms the market approach from push to pull. Instead of filling shop shelves with items that we hope someone will buy, we have a vast choice of products that have been previously engineered and made into digital twins which we actually transform into physical objects (allocating materials and process time) only when the market or, better still, the individual customer wants (pulls) them.

This approach calls for other enabling technologies. For instance, a capability must exist to anticipate and predict which stocks of materials and colours should be ready to feed manufacturing so that when an order comes in, it can be produced as requested. Pre-emptive material requirement calculations could provide a solution to this need whereby data and trends gathered from historical orders can be used for big data analysis and forecasts. Once again, this is enabled by the intrinsic



One piece knitted uppers offer simplified manufacture where an intensive labour approach is replaced by a capital intensive one.

CREDIT: DESMA AND STOLL

digital nature of the process. So, on demand is the second heading we need to add to our list.

SIMPLIFICATION

The relevant fact that stems from the numbers we presented earlier is not only the growing importance of the sneaker segment but the consideration that these shoes are becoming ever more simple in their structure, comprising only a few yet elaborate parts for which the entire shoe assembly process is also highly simplified. This leads to a significant reduction in the number of operations, the complexity of each step and of the overall impact of the contribution of labour over the total cost of manufacturing. Think, for example, of footwear with a knitted upper which, in some cases, is manufactured in one single operation and a cemented outsole for which additive manufacturing is increasingly considered as an alternative to other more complex production processes.

In a case like this, if adequate technologies, specifically in the area of the adhesives and of their application are available, shoemaking is completely transformed. It implies switching from a labour intensive approach to a capital intensive one that is not only related to an automation of the process but to the combination of more automation and process simplification. The logical corollary of this statement is that these new manufacturing processes need to be highly automated and all of the few residual assembly operations resulting from simplification are performed by robots. The combined effect of process

simplification and automation is such that the space required to deploy a manufacturing cell of a given throughput can be very small so that compact manufacturing units can be installed more easily in smaller places and in close proximity to final markets or shops. In essence, product simplification is therefore the driving force behind many of the other concepts that were presented earlier and deserves a top raking in our list of words.

URBAN MANUFACTURING

The ever-growing simplification of the shoe as a product is particularly evident in the sneaker segment and introduces a further element of novelty that leads to additional new business schemes. Production layouts are in fact becoming smaller and more compact, with the possibility of having them placed closer to the final market, especially when we think of cities, towns or even quarters rather than vast geographical areas.

Instead of large, delocalised manufacturing hubs, we can think of situations where a large number of compact manufacturing setups are installed in urban areas, bringing back a dimension of local, proximity manufacturing that was lost a long time ago in favour of centralised manufacturing. One step further and we can imagine such ultra-compact shoe making machines installed directly in shops so that retail spaces are turned into urban factories, once more restoring the framework of the past where goods were sold in workshops but revived with advanced technologies as the main ingredient. Another important addition to our lexicon of words.

RESHORING

By reshoring we normally mean the returning of shoe manufacturing from countries where it migrated to in the early phases of globalisation. When that happened, the main driver was the search for low cost and abundant labour. This migration led to a situation where countries with a strong shoe making tradition lost almost completely their manufacturing capabilities while mainly focusing on the design cycle and market access. This also caused an impoverishment of shoe making abilities and a shortage of skills, with less and less people employed in the footwear manufacturing pipeline.

The price paid in terms of long lead times, rigidity of the supply chain and loss of visibility on hidden costs, caused a rethinking of this manufacturing scheme with a further acceleration caused by the recent covid pandemic that clearly showed how little resilience these supply chains had. For manufacturing to return (reshore), new approaches are necessary, based on technology and machinery (capex) and on deskilling/reskilling of the workforce. Reshoring goes hand in hand with the proximity/urban manufacturing that can be considered as just an instance of a broader reversing of delocalisation. Again, a word we can add to our list.

SUSTAINABILITY

Sustainability and circular economy approaches are increasingly becoming 'values' that shoe consumers are ready to buy into and pay for, hence they are important elements of all new business propositions and impact on the manufacturing models that will prevail in the future. Sustainability is in itself a very broad and, to a certain extent, complex definition that covers many aspects related to how a shoe is designed, which materials (mainly their nature) are used, how efficient and energy conscious its manufacturing process is and also which kind of substances are used or wasted in the process itself. It is the sort of philosophy that should permeate the whole life cycle of our shoes.

But think about producing shoes only when they are ordered, with the exact quantities of raw materials and with almost zero waste or inefficiencies as in on-demand manufacturing. This approach reduces material and energy



Concept design of a digital model of an ultra-compact shoe making machine that could be installed directly in a retail shop.

CREDIT: ATOM

consumption to a minimum in a truly sustainable way. If we look beyond manufacturing and think of the end of life of our products in a circular economy framework, we should then consider how to disassemble the shoe in order to separate the various components/materials that constitute it and to recycle them effectively to generate new products. A new process pipeline that calls for specific new technologies but that has its origins in the true design of the shoe. Hence, the word sustainability cannot be absent from our list.

DESKILLING AND RESKILLING

Automation and digital technologies, by their very nature, do not require highly skilled personnel because process-specific skills are replaced by the digital approach and by intelligence within the machines themselves.* This allows us to assign the residual work force to higher added value tasks and to new jobs. It is particularly suitable for manufacturing scenarios typical of western, industrialised countries where labour costs are high and the workforce scarce and lacking typical shoe making skills. Skill and its various aspects is then one other of our keywords.

DIGITAL

This is the word that unifies them all. It is the underlying force for almost all the concepts expressed by the words of the new lexicon. Digital transformation is the journey that virtually all companies had perhaps already started before the pandemic but that changed

its pace from slow to fast due to the pandemic itself. It is all about the capability to generate digital data and to use them in the best way, from the core steps of new production setups such as knitting, 3D printing or robotic assembly, to the entire design and manufacturing pipeline. The approach relies on data that describe the object (digital twin of the shoe), drive the robot operations, control and monitor the production steps, capture consumers' intentions, orchestrate their interactions with the system elements and coordinate supply flows. Data also originates from the process itself and can be turned into 'future knowledge' for a continuous improvement of the effectiveness of the system.

In conclusion, we are increasingly confronted with a new language that we will be obliged to speak and to understand if we want to survive as shoe manufacturers and technology providers in the post pandemic years. Globalisation and the delocalisation of manufacturing looking for cheap labour have for a long while been the driving forces behind the footwear economy. They will be replaced by deglobalisation, smart reshoring and digital manufacturing. It is time for companies to understand the change and get ready for it. 🌀

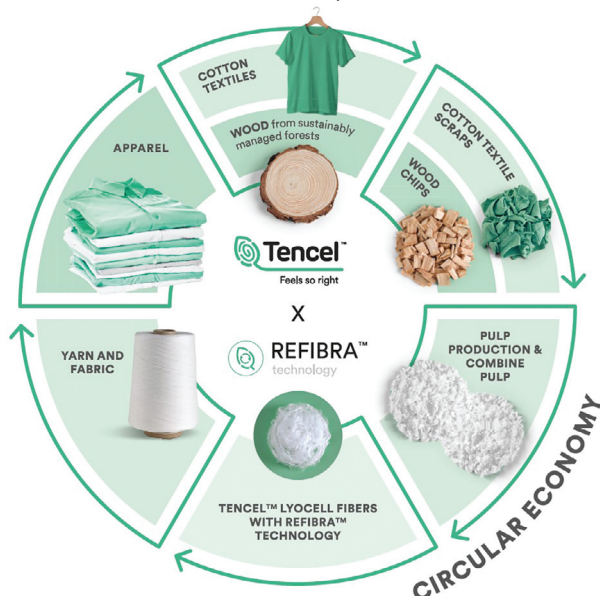
**Intelligence is another word we will need to become accustomed to, especially in combination with enabling technologies such as AI and 5G. This will be dealt with in a future article.*

Sustainable shoes made from TENCEL™ fibers

Climate change is one of the most pressing challenges of our generation. As the first cellulosic fiber producer committed to Science Based Targets initiative (SBTi), Lenzing wants to drive the change for a decarbonization within the fashion industry. Therefore, the TENCEL™ True Carbon Zero branded lyocell and modal fibers have been introduced this year, designed to set a new benchmark for sustainability. By reducing carbon emissions and using renewable energy during production, TENCEL™ goes beyond carbon offsetting to lower its carbon footprint.

Upcycling champion: TENCEL™ x REFIBRA™

Circular economy solutions are essential to counteract the exploitation of our endless resources. Lenzing's innovation, whose origins date back to 2017, is the TENCEL™ Lyocell x REFIBRA™ technology. In this process, up to 30% cotton fabric waste is integrated into the production cycle and transformed into new virgin TENCEL™ Lyocell fibers. Based on the award-winning efficient closed loop production process of standard TENCEL™ Lyocell fiber, REFIBRA™ technology offers a pragmatic solution to accelerate circular economy also in the footwear industry. This method is designed to help tackle the industry's notorious waste problem. The goal is to offer Viscose, Modal and Lyocell staple fibers with up to 50% post-consumer recycled content on a commercial scale by 2025.



Doing good for the planet by saving resources

Another important area is water scarcity and improving the water footprint. The apparel and footwear industry is one of the biggest contributors to wastewater and water pollution and according to a publication by the Worldbank, around 20% of wastewater worldwide comes from fabric dyeing and treatment. TENCEL™ Modal x Eco Color technology, Lenzing's spun-dyed fiber solution does not require subsequent dyeing. At this



process, the color pigments are deeply embedded in the TENCEL™ Modal fibers. It consumes significantly less water, energy and carbon dioxide compared to conventional dyeing, making it an excellent choice.

Go vegan

TENCEL™ Luxe Eco Botanic Filament yarns complete the range of Lenzing's sustainable innovations for footwear. This vegan yarn option opens new areas for silky-soft luxury fabrics with a luster, derived from renewable resource wood, based on an environmentally friendly closed-loop process.

A growing number of brands and suppliers for the footwear and fashion industry are adopting the UN Sustainably Development Goals or the Science Based Targets initiative. Lenzing is the first wood-based fiber producer to obtain approved Science Based Targets and is working towards a long-term vision of being net zero. All of these innovations can help the footwear industry to achieve a better economic footprint.

To learn more, visit us at the Lenzing booth at Lineapelle Milano.



X



REFIBRA™
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Online sales grew by 47% for Under Armour in 2020.

CREDIT: UNDER ARMOUR

Brands are both suppliers and competitors

If the long months of covid-enforced lockdown in many countries in 2020 and 2021 constrained the wearing and, therefore, the making, buying and selling of formal shoes, they also engendered a boom in online sales of less formal footwear. Outdoor and, especially, athletic footwear brands have been the biggest beneficiaries of this.

Full-year results for 2020 were down for most brands, but they made bold statements about growth in their direct-to-consumer (DTC) business; this is where most of any increase in revenue came from. The adidas group (which still included Reebok at this point) achieved full-year revenues of €19.8 billion in 2020, a fall of 16% year on year. Footwear contributed €11.1 billion, down by 18% compared to the figure for 2019. It said that it now regards e-commerce as its “most important store”. It has set itself the target of achieving revenues of between €8 billion and €9 billion from e-commerce by 2025.

Meaningful conversations

Figures for Under Armour showed full-year revenues of \$4.5 billion, down by 15%, with footwear contributing \$934 million, a decline of 14%. But its online sales for the year grew by 47%. The brand has its own stores and these, like the stores of its wholesale customers, suffered enforced closures during covid lockdowns. Even so, its overall DTC revenues increased by 2% compared to covid-free 2019, reaching \$1.8 billion. Almost half of that amount came from online sales.

“Direct-to-consumer is important for us because the consumer expects that seamless omni-channel opportunity,” chief executive, Patrik Frisk said in his review of 2020. “We want to make sure that when we have an opportunity to connect with the consumer, we show up in the best possible way to engage, to drive considerations, to drive conversion. It is about

Athletic and outdoor footwear brands have benefited from a lockdown-led surge in online shoe sales on their own apps and websites. This part of their direct-to-consumer operation is now a key part of their growth strategies. But not everyone is happy about the development.

having that direct conversation with the consumer more frequently, in a better way, and truly understanding what consumers are expecting us to deliver.”

Into 2021, across all of its product range, Under Armour achieved sales revenues of \$2.6 billion in the first half, almost 60% up on the same period a year earlier. Footwear contributed a little over \$650 million towards this total, an increase of 65% year on year. Under Armour’s figures for the second quarter showed greater growth for its wholesale business, 157% year on year, than for DTC, which was 52% higher. Within this, it explained that this DTC growth was down to the performance of its own shops, which registered revenues that were 234% higher than in the same quarter in 2020 (when most shops were closed). Its online direct-to-consumer sales declined by 18%, although this owes much to comparing the figures with those of 2020, when online sales boomed, precisely because millions of consumers were forced to stay at home for months on end.

E-commerce investment

Returning to adidas, first-half revenues in 2021 were more than €10.3 billion, up by 33% year on year. Footwear contributed more than €5.7 billion to the total and grew by 28%. Similarly to Under Armour, adidas said that its e-commerce revenues for the second quarter of 2021 fell, in this case by 14%. It, too, said this was because of the comparison with the same quarter in 2020, when revenues from this part of the business almost doubled. It reported that it had increased its investment in digital marketing, specifically to support sales on its own websites and apps, but it also said significant e-commerce growth had meant increased logistics costs; shoes that consumers buy online need delivering to their doors, after all.

Emphasis on DTC

The most recent full-year report for Nike covers the 12 months to May 31, 2021. It reported revenues of \$42.3 billion, growth of 19% on the previous full-year figures. Footwear's contribution to this was \$28 billion, a 20% increase year on year. Wholesale partners increased the amount they helped Nike bring in during this most recent business year; their share increased by 12% to almost \$26 billion. Its DTC business, which it refers to as Nike Direct, grew by 32%, reaching just under \$16.4 billion. In the fourth quarter, the period that spans March, April and May, the growth for Nike Direct was 73% year on year. It is small wonder, then, that Nike places as much emphasis on growing the DTC business as its rivals. In fact, the Oregon-based brand has a 'consumer direct acceleration strategy', which it managed to "bring to life" in this most recent financial year, according to chief executive, John Donahoe.

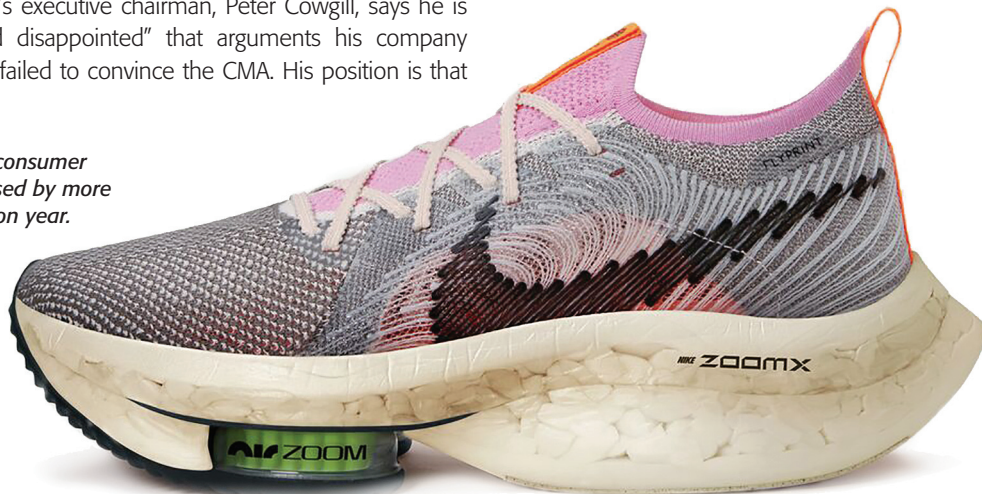
Less reliance on retail partners

Sports retail group JD Sports, which sells shoes from all these brands, has complained about the effect on its business of this drive by the brands to focus more on DTC and rely less on retail partners. The competition authorities in the UK have opposed JD Sports's putative push to acquire another sports shoe chain, Footasylum.

The UK's Competition and Markets Authority (CMA) blocked the deal in May 2020, but JD Sports appealed. In September this year, the CMA said it had gathered "extensive additional evidence on the impact of covid-19 and other developments on the sports fashion sector" and had concluded that consumers would receive "a worse deal" if JD Sports took over Footasylum. JD's executive chairman, Peter Cowgill, says he is "perplexed and disappointed" that arguments his company presented had failed to convince the CMA. His position is that

Nike's direct-to-consumer business increased by more than 70% year on year.

CREDIT: NIKE



Long-distance runner Valary Jemeli Aiyabei shows off the Adizero Adios Pro 2 shoe. By 2025, adidas aims to generate revenues of between €8 – €9 billion from selling this and other products through its e-commerce channels.

CREDIT: ADIDAS

keeping shoes in bricks-and-mortar shops is to offer a good service to consumers and that attempts on the part of brands to accelerate DTC strategies will make it harder for companies like his to keep these shops well stocked and successful on high streets that have already been "decimated by high-profile closures", he insists.

"We have made compelling submissions on the committed positioning of the global brands towards DTC," Mr Cowgill says, "and the consequent impact on an extremely competitive marketplace. I am not sure what further evidence the CMA needs to appreciate the extent of this dynamic change, which has been substantially accelerated by covid-19."

JD Sports argues that it is a unique feature of the sports and outdoor footwear market that external retail groups have to rely entirely on brands for the supply of the shoes they stock and, now more than ever, compete fiercely against these same brands as they grow their DTC operations. 📈

Rough terrain is par for the course for the Ram 3500 truck.

CREDIT: STELLARIS



Working-class heroes

As in previous years in the build-up to the US's Labor Day holiday (the first Monday in September), the footwear group Wolverine announced a new collaboration to celebrate work and work footwear. This year, the partnership was with truck brand Ram and had a special focus on essential workers. It seems this was a reference not to medical professionals or other first responders, but to the small army of skilled people who, in fair or foul weather, quietly go about the task of making sure homes have light, heat, water and other essential services.

Many Ram drivers work in sectors such as heating, plumbing, lighting, telecommunications and engineering, and they rely on the vehicles to be able to reach customers on time, often carrying heavy loads, sometimes with little space to spare for access. They like the strength, reliability and versatility of trucks such as the ProMaster or the Ram 3500 and they also enjoy the comfort the vehicles offer.

Part of automotive group Stellantis (the parent group of Fiat, Opel, Citroën, Jeep, Chrysler, Dodge and Vauxhall) Ram launched as a standalone division in 2009. On publishing its results for the first half of 2021, Stellantis listed all-time record retail sales for Ram trucks during the six-month period as one of the group's global highlights.

Bold details

Mirroring all of this in the commemorative collection of boots, Wolverine said it had been inspired by "the performance and bold details of Ram trucks". There are three styles and all the boots are made in the US.

The Ram Tradesman Safety Toe is a boot "for those ready to get the job done", Wolverine says. It has a full-grain

Wolverine's Labor Day collaboration project this year is a special work boot collection it has put together in partnership with truck brand Ram. According to the two companies, the boots celebrate the essential work many drivers of Ram vehicles carry out in communities across the US and beyond.

leather upper, an ATSM F2413-11 M I/75 C/75 EH-rated composite toe, proprietary shock-absorbing functionality and a dual-density footbed for comfort.

Also in the collection is the Wolverine x Ram Rebel Safety Toe, which the footwear group describes as being "built for people who forge their own path", helping workers get the job done, but also "looking the part" while they do. In keeping with this, Wolverine describes the design as loud and the details as gritty. This boot, too, has a full-grain leather upper, shock-absorbency capability and certified toe protection.

Premium products

There is a special version of Wolverine's 1000 Mile Boot in the collection, too. The 1000 Mile Boot has long been a popular product at the premium end of the footwear brand's

range. This version is handcrafted and uses premium, full-grain leather from Chicago-based tannery Horween Leather, specifically a pebbled leather inspired by the interior of limited-edition Ram trucks.

The truck company has launched four limited-edition vehicles in the last decade, the most recent appearing in this autumn, a version of its 1500 truck called Red. This is part of Ram's support for an initiative involving other Stellantis brands, Jeep and Fiat, through which the automotive companies will contribute at least \$4 million between 2021 and 2023 to a global fund to help fight health emergencies.

Like these vehicles, Wolverine's special-edition 1000 Mile Boot has a leather-lined interior, which the footwear brand says supplies "instant comfort". Other features include a Vibram outsole "that grips the ground like Ram tyres", flat, waxed-cotton laces and a Goodyear-welt construction to make resoling easy, thus enhancing the longevity of the product.

Skills training

Special-edition collaborations around Labor Day have been part of Wolverine's autumn programme since 2017. As on previous occasions, each sale from this year's project with Ram is generating a donation of \$10 to non-profit organisation SkillsUSA, which provides training to allow young people to learn a skilled trade. SkillsUSA executive director, Chelle Travis, says the organisation's mission is to build the future skilled workforce of the US.



Horween Leather features in a special edition of the 1000 Mile Boot.

CREDIT: WOLVERINE

It has been operating since 1965 and calculates that, since then, it has helped more than 13.5 million people. It now has 650 training partners, who come from trade unions, business associations and private companies, running sessions in 19,000 centres across the country. Its training programmes address 130 job categories and SkillsUSA has worked out that this covers around 25% of occupational areas in the US, giving the young people who engage with it prospects that will help them for years to come. "We can empower students to develop the personal, workplace and technical skills to succeed in work and in life," Ms Travis says.

Over the years, Wolverine's efforts have raised \$2 million to help SkillsUSA so far, global brand president, Tom

Kennedy, explains. He says the partnership with Ram also highlights "the excellent career opportunities" that people with a skilled trade have access to. "We're excited to be working with another brand, Ram, that is equally passionate about investing in the future of the workforce," he adds.

For her part, the automotive company's vice-president for marketing in North America, Marissa Hunter, says the new collection "seamlessly merges the worlds of automotive and fashion". She pays tribute to Wolverine's "unwavering reliability". For Ram, the partnership with Wolverine and SkillsUSA is part of a wider commitment it has embraced to pay tribute to "American working-class heroes".

Wolverine launched a special collection of work boots inspired by Ram for Labor Day 2021.

CREDIT: WOLVERINE





Some of the 125 pairs of footwear that Catherine Deneuve put up for sale to raise money for food charity Les Restos du Cœur.

CREDIT: ARTCURIAL

Star sells shoes to help feed the needy

Film star Catherine Deneuve, who once told *Madame Figaro* she was “mad about shoes”, put 125 pairs of sandals, boots and pumps from her own wardrobe up for auction in September.

The shoes went on sale in an online event run by Champs-Élysées-based auction house Artcurial. Ms Deneuve explained that she wanted all of the proceeds to go to a charity called Les Restos du Cœur. This organisation, set up by another famous French actor, Coluche, in 1985, provides food for people in need. Coluche, real name Michel Gérard Joseph Colucci, announced the idea during a radio interview that autumn, saying he hoped companies would come forward to sponsor the meals and that volunteers would help him distribute the food to the needy.

In that first Paris winter, 5,000 volunteers gave up their time

A famous French actress has auctioned off more than 100 pairs from her personal footwear collection to help a good cause.

to help Les Restos du Cœur distribute 8.5 million meals. The following year, Coluche died in a motor-cycle accident. Les Restos du Cœur continues as a lasting tribute to him and 35 years on from its launch, the idea had spread to 1,915 centres across the whole of France and the annual total of meals has reached 135 million.

Big names

Items in the Catherine Deneuve sale to support this effort included products from Louboutin, Yves Saint Laurent, Louis Vuitton, Balenciaga, Manolo Blahnik, Lanvin, Sergio Rossi, Prada, Jean Paul Gaultier, Jil Sander, Pierre Hardy and Roger Vivier, ranged in size from 37 to 39.5 and were estimated to fetch between €30 and €150 per pair, Artcurial said before the sale. Most of them went for much more.

"Restos du Cœur is deeply grateful to Cathetine Deneuve for supporting our social mission," says the organisation's president, Patrice Douret, "which is still essential in this difficult period for so many people. This online auction is unprecedented and, thanks to Catherine Deneuve's generosity in donating part of the collection of shoes she wore during the highlights of her life in cinema, people everywhere will have the chance to share in this gesture of solidarity."

Catherine Deneuve is one of the most successful French actors that cinema-lovers have seen in the last 60 years, acclaimed by critics and adored by film fans. She made her screen debut as a teenager, playing a schoolgirl in the 1957 film, *Les Collégiennes*. A first starring role came in *Les Parapluies de Cherbourg* in 1964 and, soon afterwards, she came to international prominence for her role in Luis Buñuel's 1967 picture *Belle de jour*, in which she played the main character, Séverine Serizy, and wore clothes by Yves Saint Laurent and shoes by Roger Vivier.

Mad about the shoes

In her "mad about shoes" comments to the magazine, which she gave in a 1989 interview, she also said she was full of admiration for people who are able to bring objects to life, with shoes representing a prime example. "I love flat shoes," she said, "such as Chanel ballet flats, either in beige or in vibrant colours, but I love heels too."

This last point is clear from the selection of shoes she put up for auction. They included a host of pairs with heels of five centimetres and more. Examples included a pair of black suede



From the collection: Yves Saint Laurent shoes, with the heels sculpted to form the letters YSL.

CREDIT: ARTCURIAL



Catherine Deneuve at the Cannes Film Festival.

CREDIT: TANIAVOLOBUEVA/SHUTTERSTOCK

and patent-leather stiletto-heeled *Babies* from Yves Saint Laurent, a pair of open-toed high-heel pumps from Prada that Ms Deneuve wore to the gala opening of the Hawaii European Film Festival in 2015, fuchsia-colored leather pumps from Balenciaga, and a classy pair of black patent pumps with a beige leather strap from Lanvin's spring-summer 2001 collection that she wore to the Cannes Film Festival in 2011 for the world premiere of Christophe Honoré's *Les Bien-Aimés*.

Stars of the show

"All of the lots sold," Artcurial says, "raising €47,385, including fees. The 125 pairs of footwear, plus three accessories that were also part of the sale, had been estimated to bring in just over €10,000."

Star of the show was a pair of Opyum black patent leather pumps from Yves Saint Laurent, with the heels sculpted to form the letters YSL. The actor wore these shoes at the 2018 Cannes Film Festival. They were estimated to sell in the auction for between €100 and €120 but a European collector paid €1,300 for them.

As a close second, a pair of pink and beige leather sandals from Manolo Blahnik, also estimated at between €100 and €120, sold for €1,170. Catherine Deneuve wore these shoes at two glamorous film industry events: the closing night of the 2013 Romantic Film Festival at Cabourg in northern France and the Chaplin Gala Awards in New York in 2012.

One of the accessories, a Baby Kaia purse from Saint Laurent, brought in the third-highest winning bid, €780, equal with a pair of black satin wedges from Christian Louboutin, embroidered in yellow with a pattern inspired by the Orient. 

CREDIT: HOTTER SHOES



Investors find favour in footwear

Private equity firms tend to be shrewd investors. Their job is to spot potential in companies that they can then coach and grow, to make more money. Some investments can be long term, especially if high growth rates are forecast; some deals are exited once they have made money for their investors (or in rarer cases, lost). The deals often involve staff reshuffles or changes, strategy rethinks and pushes into different markets. The focus might be returns but by enabling brands to grow quickly, those on the receiving end can often be catapulted into markets they would have struggled to access alone.

Footwear companies have long since been a target for these types of deals; in the past 10 years Bruno Magli, Jones Group, Le Chateau and Alberto Moretti have been among those bought by buyout firms or investment companies. In the past 12 months alone, LionRock Capital bought Clarks, Telemos

Hotter, Allbirds and On are among brands that have chosen to list on stock markets in recent months, in a bid to generate money for growth.

Capital purchased Swiss outdoor brand Mammut and WHP invested in Lotto Sports.

As well as these takeover options, the stock markets offer access to capital and this is a route several footwear brands have taken, or sought to take, in recent months. In a listing or initial public offering (IPO), the company decides how many shares it wants to offer, and an investment bank will suggest an initial price for the shares based on the predicted demand for them.

Clear runway

ON, the Swiss shoe brand backed by tennis player Roger Federer, surprised the market in September by listing on the New York Stock Exchange above its target range, valuing the company at more than \$6 billion, rather than the \$5 billion that had been anticipated. ON says its technology, its focus on sustainable materials and the fact it is one of the fastest growing brands in the market means it is worthy of note. Companies need to 'court' investment by setting out why they are worth backing in a prospectus – what makes them stand out, and what are the opportunities for growth?

For some, pandemic-driven changes are here to stay and should be capitalised on: consumers discovered a new-found love for exercising outdoors. "We believe that powerful consumer trends will continue to expand the approximately \$300 billion global sportswear industry and that our differentiated product offering and appeal to our loyal community will drive increasing market share," the company says. "While we have meaningfully grown internationally over the past decade, our unaided brand awareness outside of Switzerland remains below established sportswear peers, providing us with a clear runway ahead."

The company launched in 2010 and now employs more than 1,000 in nine offices, with half of sales now in the US. Federer's investment attracted attention and opened an avenue into the tennis market; new sole and cushioning developments, such as its Speedboard flex plate, keep the running market interested. The company is also planning to move into clothing, saying the lines between workwear, casualwear and athleisure are blurring, as people's tastes have been altered by the work-from-home culture.



ON has launched an ownership model where consumers subscribe to, rather than purchase, running shoes.

CREDIT: ON

Flying high

Citing similar reasons, US company Allbirds has announced its intention to list, most probably on the New York Stock Exchange or the Nasdaq, later this year. The company is only six years old, and built its business on a sustainable platform, using materials including merino wool and eucalyptus as well as a "carbon-negative" sole made partly from sugarcane (partnering with adidas). Like ON, it is branching into performance wear and its products are said to be popular with younger consumers as well as "Silicon Valley types", according to Reuters.



Allbirds wants to grow its store network to "hundreds".

CREDIT: ALLBIRDS

Investors are always looking for opportunity. Allbirds' pitch lays out a manifesto for a sustainable offering, which includes choosing banks and investors partly on environmental, social and corporate governance credentials. Its status as a B Corp means it can also prioritise sustainability and "employees, customers, the community and the environment" not just the wishes of shareholders – although some analysts say this could be off-putting. Allbirds says: "The more sustainable we are, the better we believe our products and business will be. Having a key, universal identifier like carbon footprint to evaluate sustainability claims and force accountability from businesses is critical to drowning out the noise."

Allbirds has traditionally operated a direct-to-consumer model, cutting the middle costs and enabling it to react quickly to the market. However, it has also accumulated losses, and now sees bricks and mortar as a way to build the brand. It operates 27 stores, mainly in the US: "We are in the early phase of a ramp towards hundreds of potential locations in the future."

Hot property

Taking the opposite approach is UK-based brand and manufacturer Hotter Shoes. Hotter received a \$21 million investment from Gresham Private Equity in 2007 which enabled it to grow from five standalone stores to 56. This growth attracted the attention of Electra Private Equity, which bought the business for a reported £200 million in 2014. While staying within its niche of the over-55s market, it has in recent years invested in BASF cushioning technology, added more athletic-looking styles and invested in its digital presence.

There has been a change of opinion on stores; a trend that began with the decline of the high street has been exacerbated by the pandemic. Rather than wishing to expand its retail footprint, it has turned its attention online, supported by a "small, strategic" UK retail estate. "Consumers are shopping very differently now, with a heavy reliance on e-commerce; and we expect that trend to continue alongside the re-adjustment of high street shopping, which will be much more experience-led," says Victoria Betts, chief commercial officer at Hotter.

Owner Electra suggests this leaves it free of the constraints imposed by its large retail network and the impact on product range, margin erosion across channels and working capital inefficiency. It plans to grow the company beyond footwear, after creating a separate parent company for its other brands, and will then list on London's Alternative Investment Market (AIM), a sub-market of the London Stock Exchange, later this year. "Having explored other possibilities, this is the most attractive route to create shareholder value," it reasons.

Windfalls

All parties will no doubt have had an eye on Dr Martens listing at the start of the year. Bought by Permira in 2014 (since when revenues more than tripled), its flotation gave it a valuation of £3.7bn, with the existing shareholders, including some senior staff, splitting a £1.29 billion windfall.

However, with all things connected to the stock market, the outcomes are never guaranteed. Firms can become beholden to shareholders, fashions change, and nobody can control the macro environment (as Cole Hann found out, withdrawing its IPO in January). Matt Powell, a senior advisor for consultancy



Electra Private Equity, the owner of UK brand Hotter, will create a separate parent company called Unbound for its other brands.

CREDIT: HOTTER SHOES

The NPD Group, believes the women's market is where the opportunities lie: "For over two decades, I have chided the sports industry for underserving the female consumer. In my opinion, women's activewear, along with women's athletic footwear, remains the industry's greatest failure and its greatest opportunity."

The stock markets seem to offer an attractive and lucrative route for those ambitious, fast-growing companies that can clearly define the opportunities – and brands, suppliers and investors will be keenly monitoring the upcoming IPOs as an indicator of footwear financials ahead. 📈

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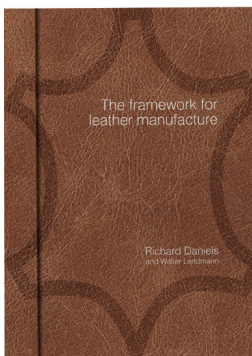


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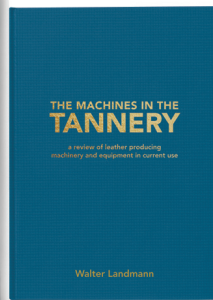
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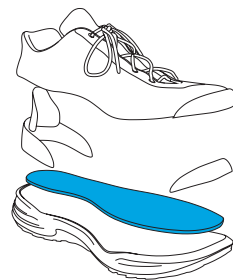
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