



COVIDCATALYSIS | FASHTECH PROSPECTS

# TECH THE LEAD

MEDICAL TEXTILES / GLOBAL OVERVIEW

## A Market Unmasked

- Lo! Here's A Social Distancing Jacket
- Every Country Should Have Ability To Manufacture A Minimum Supply Of PPE For Their Needs
- Meditech Set To Grow Faster Than Other Segments
- Clients From North America, Europe & Asia Are Seeking Antimicrobial Textiles

COVID19 IMPACT / BANKRUPTCIES

## Distress, Bankruptcy Hit Apparel Brands

COVID19 IMPACT / LUXURY FASHION

## Can Luxury Fashion Rebound?

ALTERNATIVE LEATHER / DESSERTO

## Our Fabrics Reduce Water Consumption By 20%

- Alvanon ←
- AstraFit ←
- Avery Dennison Apparel Solutions ←
- Blue Yonder ←
- Bold Metrics ←
- EyeFitU ←
- Fashion Tech Consortium ←
- Fit Analytics ←
- Fashion Technology Accelerator ←
- Istituto Marangoni ←
- Klarna ←
- Mirrorsize ←
- NGC ←
- Style.me ←
- SupplyCompass ←
- TG3D Studio ←

# TECH THE LEAD

Even as the coronavirus pandemic has economies reeling across the world, it is increasingly clear that technology will emerge as a differentiating factor in the days to come. A digitalisation transformation that was earlier seen to be inevitable in the next 5–10 years has already begun!

**Fibre2Fashion** spoke to experts about the transitions they see happening in the immediate future and how indeed fashtech is set to revolutionise the industry.

## THE TECHXPERTS

- **Don Howard**; Executive Director; Alvanon
- **Nikita Dobrynin**; CEO and Co-Founder; AstraFit
- **Mike Colarossi**; VP, Product Line Management, Innovation and Sustainability; Avery Dennison Apparel Solutions
- **JoAnn Martin**; VP, Industry Strategy and Market Development; Blue Yonder
- **Morgan Linton**; Co-Founder and COO; Bold Metrics
- **Isabelle Ohnemus**; CEO; EyeFitU
- **Michael B Reidbord**; President; Fashion Tech Consortium
- **Sebastian Schulze**; Managing Director and Co-Founder; Fit Analytics
- **Giusy Cannone**; CEO; Fashion Technology Accelerator
- **Abdullah Abo Milhim**; Lecturer in Economics, Finance, Analytics, Luxury & Wealth Management; Istituto Marangoni
- **David Sykes**; Head of US; Klarna
- **Arup Chakraborty**; Founder and CEO; Mirrorsize;
- **Mark Burstein**; President; NGC
- **Rufus Parkinson**; CEO; Style.me
- **Flora Davidson**; Co-Founder; SupplyCompass
- **Rick Yu**; CMO and Co-Founder; TG3D Studio





By **Subir Ghosh**

**T**he ongoing coronavirus pandemic has hit the textiles-apparel-fashion industry in a number of ways—from stalling of production to dwindling of revenues, and from a disconcerting rise in the number of bankruptcies to widespread retrenchments and furloughs. The scene is more than just depressing. Economies the world over are on the verge of collapse, and industries have hit rock bottom.

There is no doubt in the mind of anyone that it cannot be business like earlier anymore. Certain realities are bound to change. Returns won't work like before, and people would be averse to trying on garments at stores. Designers will need to rethink their hitherto ways of working, and manufacturers will have to keep track of all sundry developments along the long-winding value chain.

Lots of things would change, and some would accelerate—fashtech, for instance.



Businesses will re-evaluate their relationship with the supply chain and consider digitisation as a means of gaining more control of getting products to market. This is likely to mean shorter supply chains through nearshoring and onshoring, which will mean moving manufacturing to countries with higher labour costs..



**Don Howard**  
Executive Director  
Alvanon



SHUTTERSTOCK / TRAVELERPIX

## KEY TAKEAWAY

The industry has been talking about adopting technology for many years and now it's clear they have no choice but to digitally transform to survive. Until now, the focus has been an in-store first approach. Retailers and brands need to start thinking about their strategic mid- and long-term responses to COVID-19. They must be agile, pivot business models and work rapidly to develop flexible models.

**As someone who has been keeping a keen eye on the interplay between fashion and technology, (a) how do you see the fashion industry transforming in the immediate future? (b) After all, the fashion industry has been rather slow in taking up to tech.**

**Don Howard:** There are significant opportunities for businesses to drive competitive advantage through increased digitisation across the supply chain, particularly through 3D design and development. It has the capacity to shorten lead times and help get products to market, even when people are forced to work virtually. These shorter routes to market will allow for less stock risk, and will mean that businesses will work in a more responsive way to market fluctuations.

**Nikita Dobrynin:** I totally agree, but now it's going to change. I think the circumstances will make everyone move faster and look for new opportunities. I think e-commerce will be on top of the list and the fashion industry will be forced to adopt new tech solutions.

**Mike Colarossi:** The fashion industry is at the cusp of dramatic change. Technology is at the centre of this change, which is being driven by increasing consumer demand for deeper, more digital experiences and dramatic shifts in the speed of supply chains. Today, we are seeing that change in how brands and retailers engage consumers, how supply chains operate, and how shoppers interact with apparel. Consumers are shopping differently and increasingly moving online. When they do shop in stores, they are looking for more of an experience. Digital technology gives brands and retailers additional "touch points" with their consumers. Some examples include online retail software that suggests additional items based on a customer's prior purchase history, RFID technology driving omnichannel supply models, and digital trigger technologies, like QR codes, that allow consumers to interact with their apparel. Within the supply chain, RFID adoption is driving ever-increasing inventory visibility, allowing brands and retailers to more effectively and efficiently service their customers. The same technology is also enabling significant efficiencies in apparel manufacturing facilities, and



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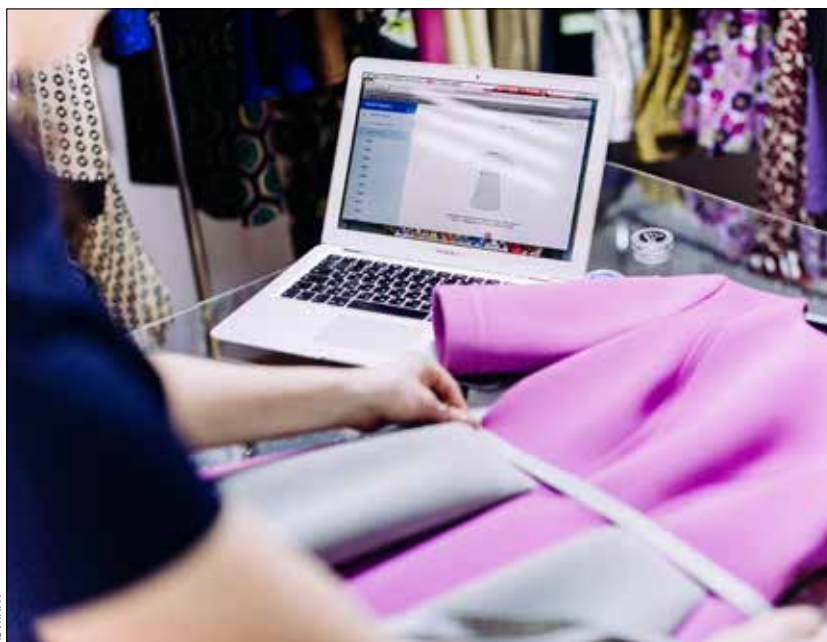
Personalisation is the future, no doubt. It comes in different ways, shapes, models etc. I don't think that we are going to have a clothes-3d-printer at home someday soon, but an idea to forget about sizing labels, like "Extra large", "34", can come true relatively soon.



## Nikita Dobrynin

CEO and Co-Founder

AstraFit



ASTRAFIT

sparking a digital revolution in a traditional analogue space.

Finally, the apparel industry is deploying technology in response to trends like customisation, personalisation, supply chain transparency, and circularity. Digital body scanning and manufacturing technologies are being used to create unique, personalised garments. Distributed ledger technologies like blockchain, are being deployed to drive transparency in the supply chain. And intelligent labelling technology is being tested to help connect the supply chain to enable garment recycling or circularity. It's an exciting time in the apparel industry. Technological change is upon us, and is only accelerating.

**JoAnn Martin:** Tech in the fashion industry has hit the acceleration button. Automation through leveraging artificial intelligence (AI) and machine learning (ML) has become imperative for retailers to maintain efficiency, especially among current challenges such as staffing reductions, as well as increasing pressures to drive personalisation through consumer experience, assortment curation, and stocked products.

Because of increased technology adoption, retailers have become data-rich environments. They are looking to harness the power of that data to drive to more prescriptive demand forecasts.

Retailers are also evaluating their end-to-end supply chain networks to drive more exception-based real time views, which will help navigate customer expectations and establish clearer visibility into product flows. And, as ecommerce continues to grow in popularity, retailers are exploring solutions like micro-fulfilment to help fulfil online customer orders in efficient, cost-effective ways.

**Morgan Linton:** We have seen a massive acceleration towards technology adoption in the apparel industry for two main reasons. First, apparel companies are seeing traffic to their websites hit an all-time high, with many new customers coming to their site, being able to personalise the experience and provide good solutions around fit and sizing are more important than ever before. Second, as apparel brands and retailers around the world are evaluating how to reopen their stores, they've all had a

## PANDEMIC TRENDS



New research from Blue Yonder highlights how **shopping behaviour has changed globally** since the covid-19 pandemic started. Blue Yonder surveyed 6,000 European adult consumers in April and 1,000 US adult consumers in both March and April.

A key finding on both continents shows that the grocery retail sector has been greatly impacted by more consumers ordering online for grocery delivery—and getting bogged down by delays.

- **US:** Almost three quarters (74%) of consumers surveyed during April said they were **doing more shopping online as opposed to in-store** in response to covid-19—this has increased from 57% when the same research was carried out in March.
- **Europe:** Almost two-thirds (64%) of shoppers who are spending more online say they will continue to do so once the crisis subsides.
- **Europe:** While **shopping in-store will continue to play an important role** in the post covid-19 world, 19% said they would visit grocery stores less than they did before – a figure that jumps to 27% for non-grocery stores.
- **US:** Three quarters (75%) were **more likely to buy the same product from a different retailer if their desired product was out of stock**, while 78% were more likely to buy a different brand of product from the same retailer if their desired brand was out of stock.



The fashion industry is at the cusp of dramatic change. Technology is at the centre of this change, which is being driven by increasing consumer demand for deeper, more digital experiences and dramatic shifts in the speed of supply chains.



## Mike Colarossi

VP, Product Line Management,  
Innovation and Sustainability

Avery Dennison Apparel Solutions



SHUTTERSTOCK / ZAPP2PHOTO

## KEY TAKEAWAY

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major realisation—allowing customers to try on clothing might not be an option.

In a recent survey 49 per cent of millennials said they would not feel comfortable trying on clothes in a dressing room after the pandemic; for baby boomers that number was even higher at 71 per cent. This has translated into the apparel industry trying to very quickly determine how to integrate technology into their stores to continue to provide a great customer experience despite the fact that fitting rooms aren't likely going to be an option customers are comfortable with.

**Isabelle Ohnemus:** The fashion industry has been talking about adopting technology for many years and now it's clear they have no choice but to digitally transform to survive. Until now, the focus has been an in-store first approach. Retailers and brands need to start thinking about their strategic mid- and long-term responses to COVID-19. They must be agile, pivot business models and work rapidly to develop flexible models to get them through the next 18 months of oscillating supply and demand. By transforming to omnichannel, fashion retailers will have access to what will become the most important channel of communication and sales—e-commerce. The recognition of the power of data and a smart usage of it is becoming of essence.

**Michael B Reidbord (a):** Retail is an entirely different conversation but with respect to fashion: how the creative side of the business functions going forward will change dramatically. The use of new technologies, especially 3D solutions, will assist designers, merchandisers and product developers to bring collections to the market in a much faster way. Timelines will shrink, there will be less physical samples that get thrown into landfills, and better, more collaborative decisions will be made with 3D concerning silhouettes, colours, patterns, accessories and other details. Changes can be made on the spot and all of this will be shared with factories in real time. The same holds true for the textiles involved as well as how things will appear within the retail environment. These are not hopeful plans or ideas for the future, but this is taking place today.

**Michael B Reidbord (b):** This is an understatement. One of the reasons the



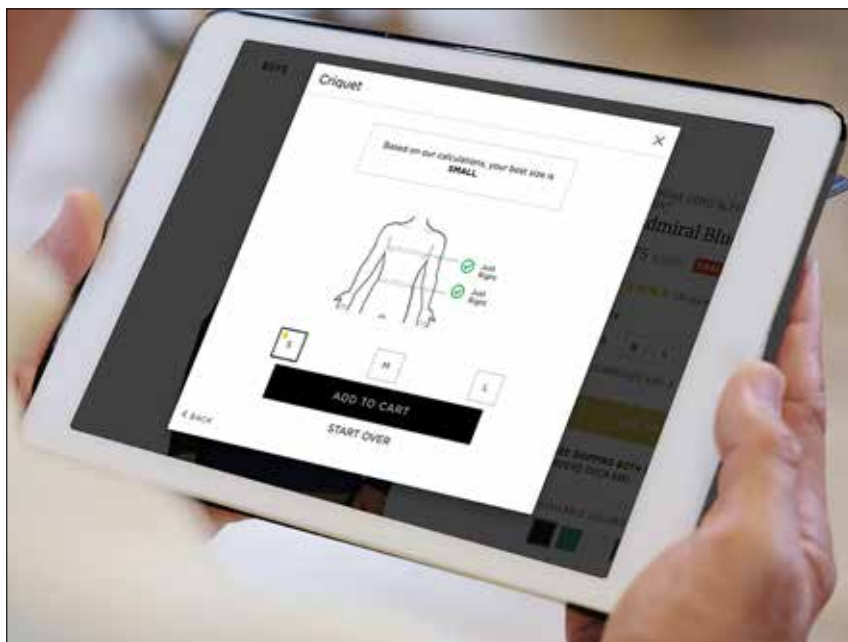
Retailers are consistently looking for ways to view their data attributes to drive specifically curated assortments of products that are localised for consumers, with a main goal of maximising top-line and minimise bottom-line bleed.



## JoAnn Martin

VP, Industry Strategy and Market Development

Blue Yonder



BOLD METRICS

industry is in such a difficult position is because the digital transformation and process improvements needed have not been implemented. The areas that all fashion companies need to pay very close attention to are:

- Better controlling their inventories and ensuring they are producing what the consumers really wants. This is done through AI and Predictive Analytics.
- Having very good relationships with all of their supplier. Finding ways to shrink their supply chains.
- Better cash management strategies.
- Ensure they are taking care of their customers, connecting, communicating and offering personalised products and services.

This translates into many new, cutting edge technologies for the manufacturing aspects of the business, for eCommerce and for the in-store environment. Some examples include:

- Retail insights platforms that help brands understand changing consumer behaviours;
- Dynamic pricing and promotion analysis and management;
- Inventory forecasting and shelf-managed services;
- Personalised stories in a modern, mobile-first format that shorten the user's path to purchase;
- Predictive analytics, produce only what your customers really want;
- Deep learning search and voice solution for online retailers;
- Prevent customer journey hijacking;
- Personalised AI stylist;
- Customers virtually try-on;
- Automated buy online, pick up in-store;
- AI to optimise targeting decisions in advertising campaigns;
- Visual product search.

**Sebastian Schulze:** The virtual sizing industry has made incredible progress over the last 10 years. On the consumer side, our greatest challenge is getting shoppers

## GROWING SMARTER



Due to the travel restrictions and trade show cancellations resulting from covid-19, Frontier, a co-working software as a service (SaaS) designed to digitise fabric materials, enhance supply chain management and boost 3D design capabilities **has experienced overall growth of 300% among textile mills and brand partners** since its launch in April 2019.

The Frontier platform is one of the largest databases of searchable online fabrics in the world containing 20,000 materials and growing from mills around the Asia Pacific area. These databases are created by allowing users to easily upload their textile products with a scanner. The heavy lifting is maintained via cloud computing to reduce upfront investment. The platform allows members to communicate, collaborate, and develop products seamlessly and cost-efficiently without having to get on an airplane, visit a convention center, or spend costly express delivery charges incurred by shipping samples back and forth.

Frontier focuses on three pillars. The first is collaboration. Frontier makes sure its files can be shared to **eliminate the barrier of entering digitisation**. The company plans to integrate chat messenger into the platform to encourage interactive data sharing. The second is search. As the largest digital fabric library on the planet at the moment, Frontier wants to make sure users can easily discover and find the fabrics when they need them. The third is compatibility.





We're going to see a major shift over the next few years towards on-demand manufacturing so people can go from personalising the style of existing clothes to making clothes specifically for them on-demand.



**Morgan Linton**  
Co-Founder and COO  
**Bold Metrics**



BOLD METRICS

## KEY TAKEAWAY

Timelines will shrink, there will be less physical samples that get thrown into landfills, and better, more collaborative decisions will be made with 3D concerning silhouettes, colours, patterns, accessories and other details. Changes can be made on the spot and all of this will be shared with factories in real time. The same is true for textiles involved as well as how things will appear in the retail environment.

to adopt the technology and use it on apparel ecommerce sites. Amongst consumers there is still a bit of distrust around sizing solutions, but we've seen this changing in a positive direction over the last few years. As the technology is normalised and people come to expect it, there is less hesitation to seek size advice as opposed to referring to an outdated size chart.

For apparel retailers, a big challenge is lack of awareness regarding new fashion tech solutions. Our biggest competitor is the outdated size chart, which many companies still believe is sufficient enough to give their customers an idea about sizing. Many companies haven't taken steps to look into new technology solutions like Fit Finder, which makes educating and outreach one of the main ways we tackle this problem. Though companies have been slow to adapt to the new technology, this is changing - and it has to do with the increase of people shopping online. Companies see that they must prioritise and invest in their e-commerce channels. Adapting to an online world is no longer an option, it's a necessity.

Companies understand now more than ever that they need to make online a priority. This shift has been accelerated by the current pandemic. Before COVID-19, the forecast industry consensus put a 5-10-year timeline on the evolution from brick-and-mortar to online. The rapid shift of economy and subsequent consumer behaviour has reduced 10 years to just a matter of months.

**Giusy Cannone:** I agree the fashion industry has been quite slow in adopting new technologies, and this is due to the peculiarity of the industry where the production quite often is not managed internally by the final brands. Being so, they are not incentivised to invest that much in technology. However, I believe this crisis has accelerated the openness of fashion corporates toward digital technology, as in some cases using digital was the only possibility to continue the activities. I'm referring for instance to the use of digital showrooms, or new ways of selling to the end customers such as using live sales streaming.

**Abdullah Abo Milhim:** The relationship between fashion and technology has been evolving, taking different forms, and has been disrupting business models and



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The next wave of innovation will be contextual intelligence and hyper-personalisation that will drive more meaningful customer interactions. The online and offline retail worlds are becoming less distinctive and retailers are improving their omnichannel offering to meet consumers' demands for ease of access and personalised dialogue.



**Isabelle Ohnemus**

CEO

EyeFitU

## INVENTORY QUARANTINE



Checkpoint Systems has unveiled a new technology agnostic software solution, inventory quarantine (IQ), in response **to questions surrounding the handling and management of returns in fitting rooms, stores, and fulfilment centres.**

Phased re-opening of the retail sector should provide on a safe shopping environment for both employees and customers.

The SaaS-based solution can be standalone or integrated with store management system and allows retailers to assign returned stock to an automated quarantine holding area for a number of hours, **removing items from visibility** to customers both online and in-store. Recommended to be set to Government guidelines in accordance with the lifespan of COVID-19 on garments and packaging, the simple but effective solution helps retailers process returns, releasing items only when deemed safe for re-sale, maximising sales while minimising health risk.



According to a CNBC report, "many retailers are adjusting return windows to ease customers' worries about getting their money back, if they shop online for clothing and other items. Longer return windows add another level of complexity."

SHUTTERSTOCK / MONTRI NIPITWITANA



value chains. Such relationship will take different forms, especially that recently we have seen various synergies arising from combinations of different technologies, such as analytics, machine learning and data visualisation. Digital transformation is key; yet it is often misunderstood and approached either at the wrong time or a high degree of over-confidence around embedding it in business strategies. Fashion brands shouldn't consider that digital transformation is just a process, and similarly shouldn't give priority to the availability of resources only. It is about creating a new culture around technology acceptance, driven by a mindset that capitalises on the strong relationship between the company and its stakeholders. It is important for brands to think about this process organically and align digital strategies to their business models and their drivers of value.

**David Sykes:** Yes, it is true the uptake of technology in this area hasn't moved as fast as one could have expected but we believe we are seeing a substantial shift in the current context, where the online experience has come under such sharp focus and the offline shopping journey and services will have to be adapted. To optimise the online experience, we believe we will see the fashion industry put a much larger investment in emerging technologies and customer engagement tools, such as VR, AR, AI personal stylists, customised delivery preferences, alternative payment methods and more, to deliver a more personalised end to end service. The future of the in-store checkout will be one that is free of cash, lines, paper receipts and stationery checkout hardware, and will need to be seamlessly integrated with online when it comes to the purchase, the transaction, as well as the last mile delivery and post purchase experience. We are already seeing these come into play as retailers reopen stores and prioritise cleanliness, new try-on/return processes, and touchless payments to minimise contact at checkout. Even in-store events, which have become very popular, may be challenged to go online. Retailers will have to bridge the gap between the digital and physical to provide a seamless customer experience across all channels and touchpoints.

**Arup Chakraborty:** While it is true that the estimated \$3 trillion fashion industry



Retailers need to fundamentally change how they design, plan, and distribute goods and how they go about servicing the needs of their valued customers. By implementing new innovations, adding efficiencies, shrinking their supply chains, and better understanding the needs and wants of their customers, their business will improve, grow and thrive.



**Michael B Reidbord**  
President  
Fashion Tech Consortium



SHUTTERSTOCK / ZAPP2PHOTO

## KEY TAKEAWAY

Fashion brands shouldn't consider that digital transformation is just a process, and similarly shouldn't give priority to the availability of resources only. It is about creating a new culture around technology acceptance, driven by a mindset that capitalises on the strong relationship between the company and its stakeholders. It is important for brands to think about this process organically.

has typically been slow in adapting newer technology, it's equally true that many big brands have made significant strides in using technology, especially to streamline their retail front stores and supply chains. The impact of the current pandemic has only accelerated the thrust on technology adoption, specially for consumer-facing retail companies. This trend is here to stay, regardless of the pandemic.

**Mark Burstein:** There is significant anxiety regarding the timing and extent of the fashion industry's recovery from COVID-19. In late February, the biggest concern was supply of product from China. Today, the biggest concern is demand for product in North America and Europe. There have already been a few retail bankruptcies with more to come. Also, I expect that many Asian production facilities will go out of business. Many of my customers are interested in our 'Covid Recovery Capsule' solution which deploys available inventory—currently in stores, in DCs, in transit and at the factory—to the channels and regions with highest demand. It also analyses causal data such as increasing infection rates by locale and makes sure that inventory does not sit idle during periods of store closures and low traffic.

**Rufus Parkinson:** We had already been observing an increase in the fashion industry's adoption of new technology in the nine months prior to the pandemic. This trend significantly accelerated during the COVID-19 crisis, as ecommerce moved to the forefront. At the same time, retailers have been exploring how to use technology to manage the in-store experience going forward.

**Flora Davidson:** Over the past couple of months, the famously fast-moving fashion industry has been forced to slow down, or in some cases, come to a screeching halt. But while 'normal' ways of working have been turned on their head, there is a short window of opportunity for experimentation and change. At SupplyCompass, we've spent much of this period speaking to brands, industry experts, and factory owners around the world, to get their perspectives on the impact of COVID-19 on the fashion industry and on how we can re-emerge stronger, together. I am hopeful that this crisis will be a catalyst for change, and that the next few months will usher in a new, better era for the fashion industry over the next



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The rapid shift from offline to online has accelerated the investment in fashion tech. We've observed more adaptation and innovation in this space as online shopping evolves and becomes more the norm.



## Sebastian Schulze

Managing Director and Co-Founder  
Fit Analytics

## NEW SEARCHES



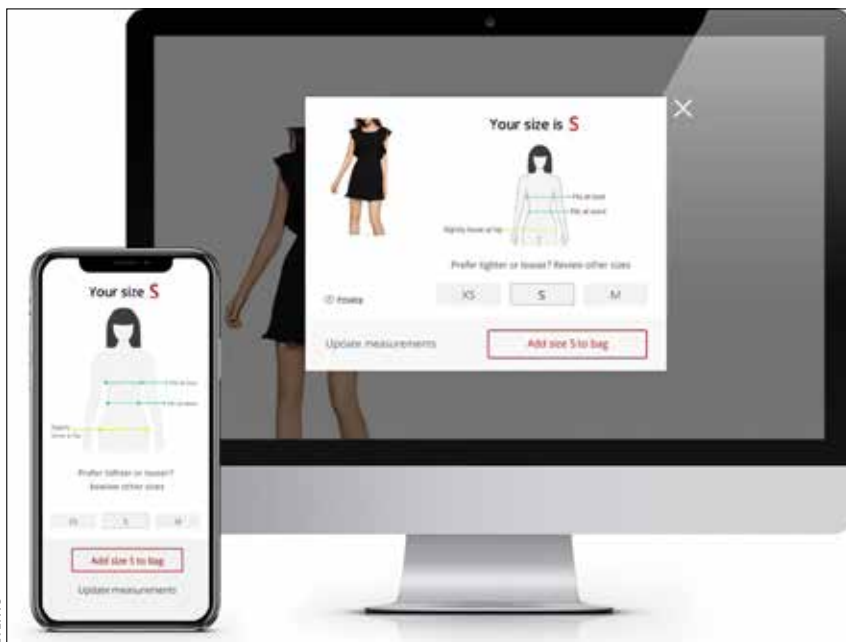
Donde Search, leader in AI visual discovery, has announced Trends as part of its **visual search navigation solution**. Retailers are looking for new ways to better identify and predict trends in order to be **more efficient and responsive to the market rising trends**. Adding Trends gives retailers a discovery solution for shoppers who need inspiration to buy.

Donde is combining unique data from billions of searches performed on its platform with sophisticated algorithms data that's being constantly analysed from the web. **Around 30 per cent of shoppers know what they are looking for when shopping online** and visual search navigation helps them better sort and refine (visually) in the ocean of products. Donde's visual search navigation has already significantly increased retailer's sales conversions and average order value by up to 20 per cent.



The new Donde Trends Inspirational Discovery provides **a great solution for 70 per cent of shoppers that do not know what they want and are looking for inspiration to buy**. Donde's Trends combines market trends and retail specific trending items.

EVERETT



decade—a transformation which places sustainability and technology at its heart.

With factories on lockdown, the industry has shifted its focus towards technology. Working from home has highlighted the inefficiencies in manual, old-school processes and widespread furloughs have encouraged depleted teams to be more resourceful and efficient. With time to explore new solutions, we've noticed a change in attitudes—notably an openness and appetite for change.

The impact of COVID-19 highlights, with renewed importance, the need for digitalisation within the fashion industry. Brands will have to cut costs; they can't push down unit prices of products any further. That means they'll have to source smarter and find efficiencies across the value chain and product lifecycle. Many businesses may not be able to scale up their teams to pre-COVID-19 size, so will need to upskill staff and use technology to drive efficiency and enable them to make more informed choices.

They will also need to gather more supply chain data to better anticipate, manage and mitigate risk should a situation like this pandemic happen again. The only way to successfully achieve this is to digitise often informal supply networks, ensuring data is gathered beyond tier-1 factories.

Brands which rely too heavily on certain regions or factories will need to diversify their supply chain, or look for new supply chains to launch new product lines. Traditionally this process of finding new partners is quite an informal process, either through recommendations or requiring teams to go to trade shows or travel to visit factories. As global travel is restricted, brands will need to look to access vetted digital supply networks.

Driven by necessity, the fashion industry is looking to sustainable solutions for help to survive. Unsold inventory will be the biggest issue for retailers over the next six months. In light of this, we've heard brands talk about focusing on trans-seasonal pieces, designing timeless classics that can be sold whatever the season, and doing smaller, more regular drops of clothing—reducing the amount of products that go unsold, only to be heavily discounted at the end of the season. This



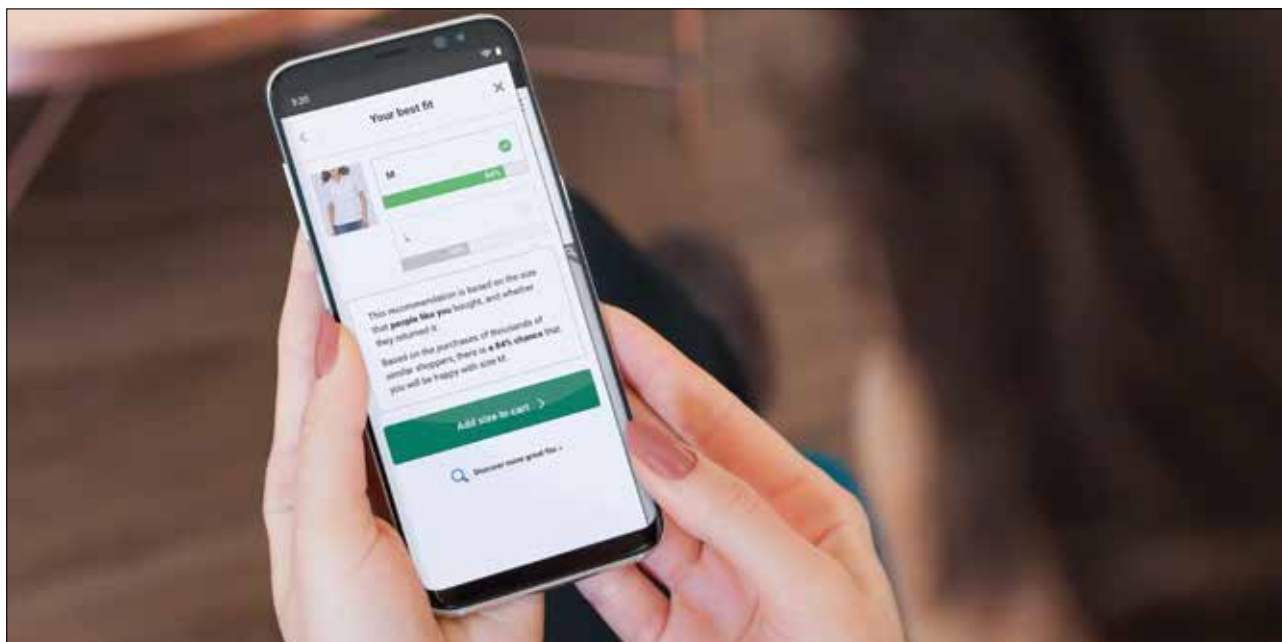
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**Giusy Cannone**

CEO

Fashion Technology Accelerator



FT ANALYTICS

## KEY TAKEAWAY

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is what customers want—and it makes both environmental and financial sense.

Now is the time for the fashion industry to take a good hard look at itself—and an opportunity for it to emerge on the other side of this crisis in a smarter, more sustainable shape than ever.

**Rick Yu:** The fashion industry has always been slow in tech due to

- The large industry chain that doesn't allow stakeholders to make changes themselves;
- The fast-moving pace so no one has the time to slow down and make innovations;
- Everything works perfectly fine within the traditional process.

However, the COVID-19 pandemic has changed the situation. The fashion industry has been forced to cancel all traditional offline events. The term “digital fashion” finally has the chance to come to the surface of the water. Before the pandemic, we estimated that it will take 2–3 years more for the fashion industry to migrate into digital fashion, but comparing the inquiries coming in Q1 2020, we are on track of receiving 3X more inquiries by the end of Q2. People in the fashion industry are definitely looking for digital solutions and will be willing to fully adopt fashion technologies in the future. All they need is a push and COVID-19 made it happen.

Although more and more countries are opening up, we think global travel bans will still be restricted for a while. How to utilise digital technologies to scale businesses and maintain effective communication and other business activities would be a big challenge for the fashion business during the current situation.

Since some of the companies have laid off their employees to reduce their costs during the pandemic, they will meet the challenges on how to run the business with a smaller team and maintain the efficiency and the product quality during the post-COVID-19 world.

**What has your company's experience been during the lockdown? Are manufacturers and retailers indeed looking for sizing/styling solutions as is**



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We will see big shifts in consumption and mindsets which will require a complete rethinking of the current business models and way brands manage their relationships with various stakeholders. The current crisis will drive many companies to reflect on their perceptions of smart technologies and wearables.



## Abdullah Abo Milhim

Lecturer in Economics, Finance, Analytics, Luxury & Wealth Management

Istituto Marangoni

## AUGMENTED SHOPPING



A recent survey found that **online shoppers return 70% of the clothing they order**, more than any other category of purchase. This has an indirect but real impact on the environment.

Online shoppers tend to **order multiple sizes and colors, with the intent of sending back the items that don't fit or aren't the right colour**, a practice known as "bracket shopping." An augmented reality (AR) tool allowing shoppers to see an image of themselves in the garment, however, made them more likely to want to buy it, according to new research by a team including Fatma Baytar, assistant professor of fiber science and apparel design and director of the Body Scan Research Group.

While not as effective as physically trying it on, the researchers found that AR boosted participants' attitudes toward the garment, potentially improving the experience and efficiency of online shopping.



The study, "Evaluating Garments in Augmented Reality When Shopping Online," was published April 6 in the *Journal of Fashion Marketing and Management*.

FASHION TECHNOLOGY ACCELERATOR



### made out to be? How active are you? How's business?

**Don Howard:** The scramble to remote working has accelerated shifts across the industry towards more digital modes of operation. Working remotely in a global industry has also highlighted the fundamental need for established standards and tools for fit consistency both in the physical and in 3D. Brands who already had such standardisation initiatives in place before COVID-19, have accelerated these initiatives. We have also seen a significant uptick with brands in the queue who are transitioning existing Alvanon physical tools onto their 3D platforms. Before COVID-19, reducing fit sample iterations and increasing speed to market were common goals for most brands. We have seen an increased need for training and execution on fit approval at the brand HQ, sourcing offices and the vendor base. Customers are taking advantage of those services as well.

**Nikita Dobrynin:** We see caution in all business activities of our customers. That said, it's hot time for services like AstraFit. Lots of businesses use lockdown time to explore possibilities to enhance their ecommerce. Many of us understand that shift to online that is happening now is not going to bounce back big time. We will never return to 2019.

**JoAnn Martin:** The shifted needs and shopping habits of consumers have made assortment curation and the determination of assortment volumes a strong focus among manufacturers and retailers, and this focus will remain post-COVID-19. Retailers are consistently looking for ways to view their data attributes to drive specifically curated assortments of products that are localised for consumers, with a main goal of maximising top-line and minimise bottom-line bleed.

**Morgan Linton:** We have been seeing a gradual increase in demand for our products and services through the lockdown. This has been generally due to increased need for online fitting solutions as retailers shift to e-commerce in driving sales growth, in addition to the near immediate need for digital fitting solutions that can accommodate curbside pick-up or in-store shopping in the absence of fitting rooms.

Our first priority has been to help our current customers around the world



Overall, the fashion industry will need to invest in the right technologies to meet financial demands and customer needs. Buy Now, Pay Later solutions will be more important and relevant than ever in the foreseeable future, as companies bring their businesses online and as consumers seek more financial control and flexibility for their payments.



**David Sykes**  
Head of US  
Klarna



SHUTTERSTOCK / MONOPOLY919

## KEY TAKEAWAY

The shifted needs and shopping habits of consumers have made assortment curation and the determination of assortment volumes a strong focus among manufacturers and retailers, and this focus will remain. Retailers are looking for ways to view their data attributes to drive specifically curated assortments of products that are localised to maximise top-line and minimise bottom-line bleed.

ensure they can optimise the consumer experience online and help them put a digital fitting solution in-place for their stores when they reopen. We have growing demand for our recently announced Contactless Fit solution and right now we're finding some great ways to streamline the process and help companies reopen their stores safely.

For small businesses that are struggling, we have offered a free version of our solution for the first time in company history. We feel it is so important to support companies that are struggling so they can stay in business and provide an exceptional experience to their customers. Now really is the time for all of us to do what we can to help as many people as possible.

**Isabelle Ohnemus:** With a team on two continents, working remotely has always been a strength of ours. We've been lucky and have kept our entire team on board. As fashion retailers look forward and adapt their business models to increase personalisation, both online and in-store, solutions like ours are sought after. However, decision making for retailers is hard when they don't know how the world is going to be in a month with so much uncertainty. We're active, particularly around advanced analytics as this data will drive better customer experience and overall engagement. The time is now for retailers to strengthen their digital presence while also looking at ways of becoming more sustainable and reducing their carbon footprint.

**Sebastian Schulze:** Companies are still reaching out with interest in Fit Finder and our product suite. We've observed that apparel retailers fall into three main categories in the current economic climate, which plays a big part in whether or not they reach out to us: companies who are primarily brick-and-mortar, pure-play online shops, and omnichannel retailers.

Brands with a high share of brick-and-mortar and an underdeveloped ecommerce presence are in survival mode and have put new technology implementations on the back burner in order to focus on saving their companies. Pure-play online shops and retailers with a strong online presence are using this interruption to review new



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Adoption of any new technology is a slow burn unless prompted by an unforeseen business challenge. Innovators who account for just 2.5 per cent of the target customers will always be willing to try something new. But the larger, and therefore more profitable set of consumers, are value-driven. Hence, the success of any innovation depends on the trade-off between price and benefit.



## Arup Chakraborty

Founder and CEO

Mirrorsize



## BETTER SHOPPING



According to the Body Scan Research Group's study, current virtual try-on technologies offer **two methods of improving online shopping**. One involves creating an avatar by inputting key body measurements and then trying clothes on the avatar. The other method is AR—using a computer, phone or tablet screen as a mirror reflecting a shopper and background while overlaying the chosen garments on the shopper's image.

The researchers from Iowa State University and Virginia Polytechnic Institute focused on the latter technology, asking participants to virtually try on a dress, select a size to "order" and then physically try on the dress in that size. Participants evaluated the AR dress for size, fit and performance, then did the same following the physical try-on.



Evaluating product performance – style, fabric, colour, coordination with other items, touch and feel, weight, fit, comfort and appearance on the body – was significantly different when experienced in AR versus real life. Colour was the only performance factor that showed no difference across the two try-on experiences.

But even with the limitations, participants responded well to the virtual dress.

ways to enhance their ecommerce operations to meet the demand of the changing market environment, which includes looking at sizing solutions and other new technologies. The third category—the omnichannel retailers—is in between both worlds. These apparel firms have been hit hard by physical store closures, yet their online demand has accelerated at a pace none were expecting. They are having to adjust to two opposite business impact cases at once which is very challenging.

Companies with liquidity issues are finding it challenging to make new investments at the moment. Those that are in a stronger financial position are thinking hard about their retail strategies and are preparing for a different shopping environment after COVID-19. For these companies, now is the time to review new opportunities and invest in e-commerce technologies like Fit Finder to stay ahead of the competition.

In general, there is still a level of uncertainty given the economic impact of a future we don't yet know. However, companies understand now more than ever that they need to increase their market share from offline to online and adjust to the new normal. This shift has been accelerated by the current pandemic.

**Rufus Parkinson:** We have seen a surge in demand for our solution. This has been driven by retailers' desire to maximise the ecommerce channel and also to implement a fit and styling tool that can be used both online and in-store. Fit has long been a challenge online and that is something we have been addressing. However, now we are offering the solution in-store as well, as an alternative to traditional fitting rooms which in many locations remain closed.

**(a) In which areas do you see the maximum changes happening? (b) Do you think the ERP/PLM/supply chain management areas were sufficiently digitalised already?**

**Mike Colarossi:** Change is taking place across retail, product and supply chain, but the most change is likely occurring in the supply chain, as brands, retailers and factories look to respond to trends and increase their number of seasonal offerings.



The latest generation of digital supply chain platforms integrates all supply chain information into a single platform, then uses AI for scenario analysis and automated decision-making. The most technically advanced fashion companies are just starting to roll out these types of solutions.



**Mark Burstein**

President  
NGC



SHUTTERSTOCK / KISELEV ANDREY VALEREVICH

## KEY TAKEAWAY

Change is taking place across retail, product and supply chain, but the most change is occurring in the supply chain, as brands, retailers and factories look to respond to trends and increase their number of seasonal offerings. While some brands have deployed digital technology in ERP/PLM/supply chain management, most of that work was focused on using digital technology to optimise analogue systems.

While some brands have deployed digital technology in ERP/PLM/supply chain management, most of that work was focused on using digital technology to optimise analogue systems. Now, there's opportunity to reimagine processes and systems in a completely digital environment. Introducing machine learning technologies to change how demand forecasting works, developing garment collections completely digitally to allow for stronger cross-functional collaboration, and even sampling garments digitally...it's all happening.

**Michael B Reidbord:** I do not. There are multiple solutions and system upgrades that need to be implemented. These refer back to design, factory monitoring, inventory management, and then through the selling process. The innovation is there, companies just need to investigate and invest.

**Giusy Cannone:** I believe that marketing and communication is the area in which the fashion industry has been able to quickly catch up with digital technologies available. However, the supply chain still remains at a stage where several changes need to happen. I'm talking about the possibility to track the products alongside the supply chains through IoT for instance, or about the digital prototyping that can open up also new avenues for ecommerce optimisation.

**Abdullah Abo Milhim:** As the supply chain is massively disrupted, we will witness new forms of digitalisation in relation to supply chain. Although this has been happening for some time, we have started to witness new forms of digitalisation, with smart technologies playing huge role, thanks to powerful data implementations. It would be important for ERP to be integrated into Blockchain for example, which would potentially improve processes around flexibility, free flow of information, transparency, and efficiency. In terms of PLM, there is some degree of incompatibility with various new technologies and therefore the change might be slower. With supply chains becoming shorter, there will be challenges to fundamental concepts of PLM around life cycles, and centralisation, and this might not work efficiently (at least for now) with some technologies such as blockchain. On the other hand, there is a huge potential for the relationship between PLM, and Machine Learning, which

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We have seen a surge in demand for our solution. This has been driven by retailers' desire to maximise the ecommerce channel and also to implement a fit and styling tool that can be used both online and in-store. Fit has long been a challenge online and that is something we have been addressing.



**Rufus Parkinson**  
Style.me

SHUTTERSTOCK / SCHARESINN



would provide opportunities to improve CRM and productivity.

**Arup Chakraborty:** We see more adoption of consumer-facing technologies in the short term, and because of the impact that these technologies will have on business, the adoption of technologies for the backend (such as ERP, PLM and supply chain management) will also increase in the medium- to long-term. From robots that sew and cut fabric, to artificial intelligence (AI) algorithms that predict style trends, to virtual reality (VR) mirrors in dressing rooms, technology is automating, personalising, and speeding up every aspect of fashion, according to a May 2019 CB Insights note. Though the adoption was slow in the last two decades, brands have begun using AI to enhance customers' shopping experience, analyse data, boost sales, forecast trends and offer inventory-related guidance, among many other things.

For instance, smart chatbots and intelligent touchscreens being used in stores to improve customer experience and customised product suggestions. Further, smart clothing, wearable spaces, multi-functional designs, responsive sportswear, etc., use the Internet of Things (IoT) concept with the help of sensors and AI to personalise fashion further. Trend forecasting and supply chain management are some of the most profitable avenues for AI. For instance, real-time inventory tracking has become key for brands as they save time and make for efficient warehouse management and operations. Last, but not the least, if we combine inventory tracking with AI's powerful data prediction tools for trend forecasting, brands could have a significant competitive advantage.

**Mark Burstein (a):** Inventory optimisation. Every fashion company is focused on lean inventory, fast turns, and highest ROI on their inventory investment.

**Mark Burstein (b):** ERP has made good progress to manage customer orders, inventory, distribution and finance as consumer spending habits have changed. PLM, by definition, is digital. Supply chain management has come a long way, but has a much greater opportunity to become much more digital. Many companies still rely on manual processes like Excel and email for supply chain visibility and execution. The latest generation of digital supply chain platforms integrates all

## GARMENT EFFECTS



Browzwear and Adobe have joined hands to integrate its Substance 3D **texturing and materials authoring technology**. As a native part of Browzwear's VStitcher and Lotta 3D design solutions, designers can access the Substance's powerful capabilities, enabling them to **quickly create and visualise hyper-realistic print executions, and other visual effects**.



The collaboration with Adobe is part of Browzwear's ongoing commitment to facilitating apparel businesses' ability to benefit from best-of-breed technologies at every step of their workflows, from concept to commerce. This extends the application of Substance's technology, a must-have for the video games and motion picture special effects world, into fashion, an industry where adoption of 3D is increasingly imperative.



**Designers can customise their prints' executions**, in real time, adding from a selection of visualisation parameters including emboss, embroidery, foil print, vintage, and more.

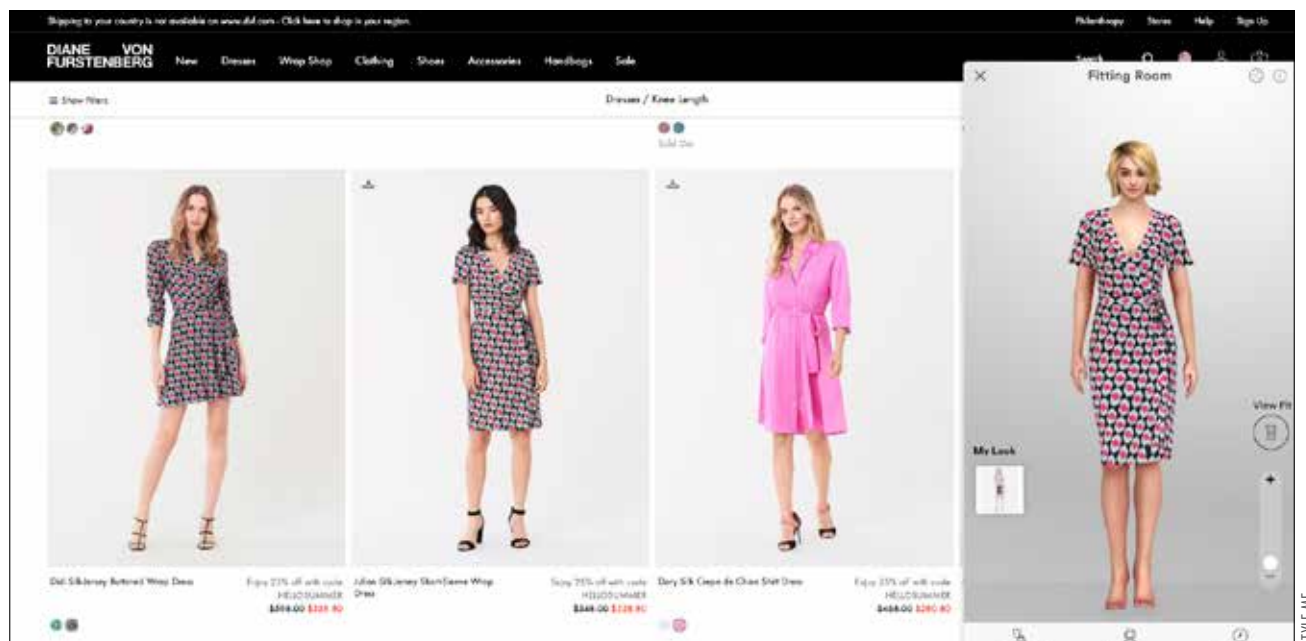




It has been hard at times to get brands to see the benefits of using cloud-based software, but now everyone has been forced to work from home, they can't go into the office to manually look something up. Overnight, working from home has brought about an immediate need to design and produce online.



**Flora Davidson**  
Co-Founder  
SupplyCompass



STYLE.ME

## KEY TAKEAWAY

Supply chain management has come a long way, but has a greater opportunity to become more digital. Many companies still rely on manual processes like Excel and email for supply chain visibility and execution. The latest generation of digital supply chain platforms integrates all supply chain information into a single platform, then uses AI for scenario analysis and automated decision-making.

supply chain information into a single platform, then uses AI for scenario analysis and automated decision-making. The most technically advanced fashion companies are just starting to roll out these types of solutions.

**Flora Davidson:** During the early days of SupplyCompass when I was living in India, I felt that many communication and production processes had been entrenched over decades, and few had paused to question why they were being done in such a way. It didn't make sense to me that the retail and consumer-facing side of fashion was exploring all kinds of exciting technologies, but that behind the scenes product development, production, and supply chain management was essentially being done via email, Excel and WhatsApp. Whilst these are all great tools, none have been designed for the unique complexity of fashion supply chains. What's more, with sustainability rising up the agenda of every brand, I couldn't see how these ambitious sustainability goals would be achievable without technology at the core.

I noticed that although brands and factories were quick to talk through the challenges that existed within fashion production and supply chains, technology was rarely seen as a viable solution to their problems. For me, the basics of how brands and manufacturers find each other and work together required a rethink and digital overhaul.

It has been hard at times to get brands to see the benefits of using cloud-based software, but now everyone has been forced to work from home, they can't go into the office to manually look something up. Overnight, working from home has brought about an immediate need to design and produce online. If we look at how fast everyone has adapted to this new normal in response to the global pandemic, imagine how fast businesses could adapt in other areas?

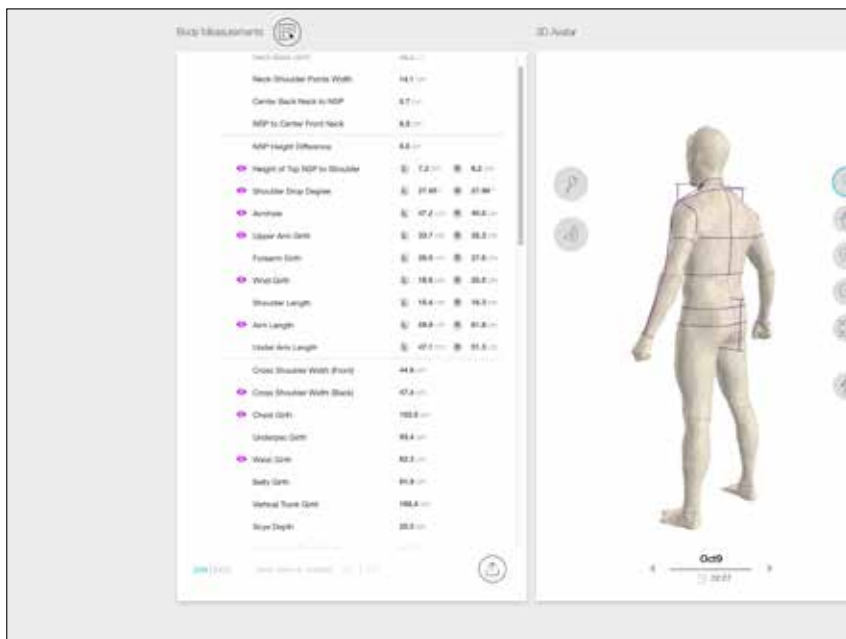
Rather than reverting to how things have always been done, there is a huge opportunity here for brands to reinvent, adapt and experiment with new technologies and methods of working. This ranges from the radical—such as buying virtual clothing from companies like The Fabricant—to the practical, such as using virtual sampling software like Clo3D whilst closed factories are unable to produce

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While people are still trying to perform social distancing, 3D digital garments and fabrics could be an option much better than 2D photos. With a 3D digital display, you could view the garments or fabrics from various perspectives, review the colours, textures, and other details in a true-to-live context.



**Rick Yu**  
CMO and Co-Founder  
TG3D Studio



## MARKET TRENDS



A majority of fashion retailers want to invest in high tech features such as augmented reality (AR) and virtual reality (VR); but then four in five shoppers say they wouldn't be interested in using it. The research, conducted by Klarna and Censuswide in 2018 as part of Klarna's Global Fashion Research Series, surveyed 2,000 shoppers and 50 decisionmakers in fashion retail throughout the UK. According to Michael Rouse, chief commercial officer of Klarna, this showed a clear discrepancy between what shoppers want in the future and what retailers plan to deliver.

Rouse wrote at the time, "According to the research, fashion retailers are investing in the latest technology trends, while they still find the fundamentals a challenge. A fifth of these retailers admit they're struggling to get the basics right when it comes to digitisation, and 42 per cent are so focused on getting online right that in-store technology is not a priority.



This contradicts what consumers say they want, with almost three-quarters (73 per cent) stating they value shopping in-store, as it offers a human experience that can't be recreated online. In short, retailers shouldn't be writing off the value that a good in-store experience can bring to their business.

physical samples. I've seen brands react fast to lockdown and experiment with digital fashion shows, virtual catwalks and virtual showrooms.

Since most fashion brands have been forced to operate remotely, working from home has brought about an immediate need to design collections and manage production online. It's important that teams use this time to explore and train themselves on new digital tools and bring product libraries into the cloud. Production software provides a necessary single source of truth and means teams can be working on the same collection or order at the same time, whilst at home. This reduces miscommunication, increases team visibility, drives efficiency and encourages better team collaboration, regardless of whether you are together or not. Slack, WhatsApp and Zoom are great tools for communication but aren't built for product development, factory collaboration, or effective order management.

The reinvention won't just be limited to retail; we think this will transform parts of the supply chain too. We're exploring virtual showrooms for factories so they can better showcase their capabilities whilst brands aren't able to visit—and we wonder whether tools like this could last beyond the crisis.

**Rick Yu:** We think the maximum changes would be in the brick-and-mortar retail stores. We are seeing a lot of retail stores coming back in business however operating under strict rules regarding hygiene and social distancing. The concept of the future apparel retail store would play a big part here. Under the situation of the fitting rooms still being closed, technologies such as 3D body scanner that helps with size recommendation or digital body avatar and 3D garments that enable virtually trying on clothing could help to cope with the issue. The interactive and immersive 3D garment displays in the retail stores allow customers to view, customise, and play with the designs that could help to attract customers to visit the brick-and-mortar retail stores.

Another big change we could foresee is the way businesses communicate with their clients and with their stakeholders. While people are still trying to perform social distancing, 3D digital garments and fabrics could be an option much better



SHUTTERSTOCK / KODESIGNPHOTO

## KEY TAKEAWAY

Production software provides a necessary single source of truth and means teams can be working on the same collection or order at the same time, whilst at home. This reduces miscommunication, increases team visibility, drives efficiency and encourages better team collaboration. WhatsApp and Zoom are great tools for communication but aren't built for product development, factory collaboration.

than 2D photos. With a 3D digital display, you could view the garments or fabrics from various perspectives, review the colours, textures, and other details in a true-to-live context.

**A Klarna study had remarked a little more than a year ago: “while a majority of fashion retailers want to invest in high tech features such as augmented reality (AR) and virtual reality (VR), four in five shoppers say they wouldn't be interested in using it.” Do you see that changing in the days to come? Why so?**

**David Sykes:** When Klarna conducted this research back in October 2018, we saw that there was a discrepancy between what retailers planned to deliver in the future and what shoppers wanted when it came to adopting the latest technology. At the time, fashion retailers wanted to invest in emerging tech such as AR and VR but shoppers weren't that interested. Today's current situation is accelerating the usage of these technologies by challenging retailers to experiment and engage their audiences in new ways and encouraging consumers to shop through new avenues when others have been limited. I do believe if we took that research now, the results will have shifted (thanks for the idea!).

**Industry experts have been talking of smart fabrics / wearables for a while now. But with the COVID-19 threat likely to be around for a while, we may see changes that could be demand-driven / consumer-driven. Would you agree? Then again, these products are also likely to be on the expensive side. So, do you see this happening at the luxury end of the market?**

**Mike Colarossi:** Smart fabrics and wearables are still on the fringe of the apparel market. Our industry continues to explore and experiment, but I believe we are several years away from seeing either technology become common on most apparel.

There are challenges with both technologies that the industry is trying to overcome. First, there's the issue of scalability and compatibility across garments and brands. For a technology to get any type of scale, it would need to be a platform



# WILL INVESTMENTS FINALLY POUR IN?

**Do you see more investments pouring into FastTech? What has been your own experience? The monies would also depend on how investors see the demand for FastTech rising across the world. How do you react to that?**

**Don Howard:** Businesses will re-evaluate their relationship with the supply chain and consider digitisation as a means of gaining more control of getting products to market. This is likely to mean shorter supply chains through nearshoring and onshoring, which will mean moving manufacturing to countries with higher labour costs. These higher costs will need to be offset by increased automation and data-led decision making to maximise profit. Going digital will need to be a fundamental part of the strategy.

**Nikita Dobrynin:** We don't have any investment activity at AstraFit, so I cannot comment.

**JoAnn Martin:** All retailers are exploring ways to drive fast ROI on projects in areas such as pricing, supply chain visibility, and forecasting. They're also exploring their networks to try to bring more product closer to near shore for heightened flexibility and speed to market. Fashion retailers in particular are looking for easy-to-deploy, high time-to-value solutions that can enable automation and free their teams to focus on value-add insights and execution.

**Morgan Linton:** I think investors are being cautious right now as they try to understand how the markets are changing and what this means for future funding rounds. For new companies just starting out I think it's a challenge, investors are looking for proven solutions and aren't as likely to take the same risk they might have taken a year ago. We feel very lucky to have the investors that we have, they have been incredibly supportive and luckily we do not need to raise more money at this time so we're staying laser-focused on helping our existing customers and bringing on new customers that need technology like ours now more than ever.

**Isabelle Ohnemus:** Yes, but we're seeing more follow on investments than new investments. Nevertheless, with the disruption in the way people will shop, FastTech is more than ever on their radar.

**Sebastian Schulze:** The rapid shift from offline to online has accelerated the investment in fashion tech. We've observed more adaptation and innovation in this space as online shopping evolves and becomes more the norm.

**Rufus Parkinson:** As more and more retailers—both large and small—adopt “Fast Tech” solutions, there will undoubtedly be an increase in investments.





TIG3D STUDIO

## KEY TAKEAWAY

The massive level of inventory that the industry is keeping now, will boost sustainability and increase the intensity of those voices calling on the fashion industry to slow. Smart fabrics for many consumers, is not only an aspect of taste or an exercising of the digital identity, but a driving force of eco-responsibility. Luxury is unique, and when it comes to smart fabrics the focus shifts to the experiential economy.

to which multiple brands subscribe, so consumers can have a seamless experience, regardless of the clothing brand they are wearing. Second, there's the simple issue of powering wearable devices. Technology incorporated into garments cannot inhibit the fit, function or wearability of the garment, and today's technologies are still too bulky for most consumers. Third, the technology needs to withstand the life of the garment, and that typically means surviving washes. While technology is certainly advancing, we're not quite there yet.

I contend that, before we see smart fabrics or wearables in the market, we will see technology that focuses on functionality incorporated into garments. Incorporating passive sensing technology that measures things like heart rate and temperature and connects to a separate wearable is an area of exploration. Anti-bacterial or anti-viral coatings that protect an individual's health may become a reality. Or fabrics that respond to body temperature to actively, and noticeably, heat or cool are within the realm of possibility.

So, for the time being, I see wearables having very limited reach—maybe in areas like professional sports.

**Michael B Reidbord:** Innovation within the fabric sector continues and wearables development is taking place globally but has been driven mostly by the needs of first responders, the medical industry, and heavy industry / manufacturing. The fashion part of Wearables has been limited and not necessarily scalable. The COVID-19 pandemic may have an impact on this market but I personally do not see it gravitating towards luxury markets.

**Giusy Cannone:** I'm not a big fan of wearables. Indeed, those types of solutions have always been technology push rather than demand pull. I don't see much happening in this area in the near future. Considering smart fabrics where technology is rather "behind" the garment, they might have higher chance of success. High price is still an important obstacle and should be justified. At the moment, I see performance garment more than textile driving the market in this sector.

**Abdullah Abo Milhim:** We will see big shifts in consumption and mindsets which



will requires a complete rethinking of the current business models and way brands manager their relationships with various stakeholders. The current crisis will drive many companies to reflect on their perceptions of smart technologies and wearables. The massive level of inventory that the industry is keeping now, will give a big boost to sustainability and will increase the intensity of those voices calling on the fashion industry to slow. Smart fabrics for many consumers, is not only an aspect of taste or an exercising of the digital identity, but a driving force of eco-responsibility. Luxury is unique, and when it comes to smart fabrics the focus shifts to the experiential economy, and personalisation. Technology in that sense is just a tool and not a driver of value chain processes, for the purpose of protecting the Brand's DNA and its equity.

**David Sykes:** Consumers that shop for luxury fashion are very often already using high-end technology in nearly all other aspects of their lives, so this is not such a leap for luxury brands but also a way to engage wider audiences to stay relevant and reach new customers.

**Arup Chakraborty:** Adoption of any new technology is a slow burn unless prompted by an unforeseen business challenge. Innovators who account for just 2.5 per cent of the target customers will always be willing to try something new. But the larger, and therefore more profitable set of consumers, are value-driven. Hence, the success of any innovation depends on the trade-off between price and benefit.

**Mark Burstein:** No concrete opinion yet. Still too early to gauge.

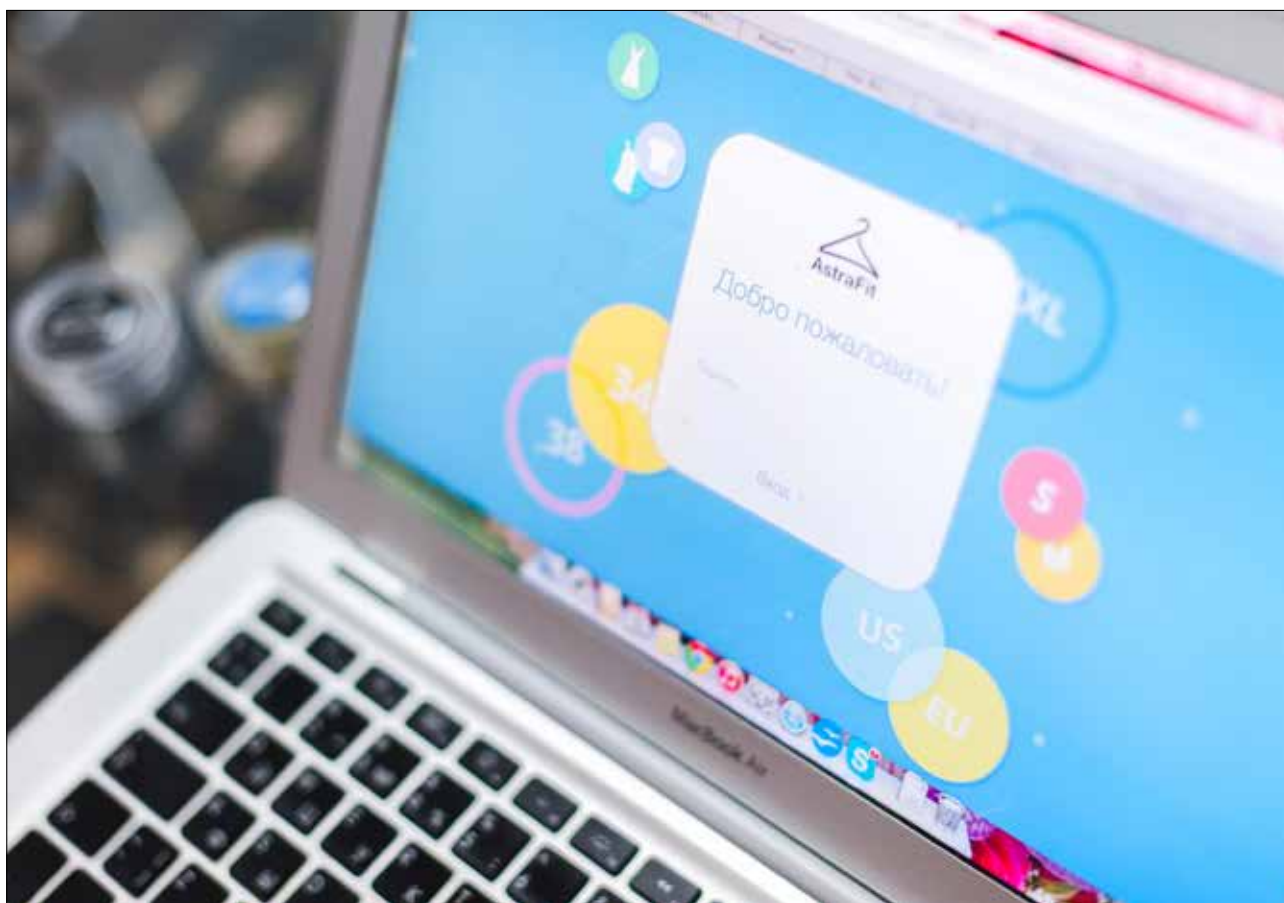
**Flora Davidson:** I've always been interested in, and excited by, potential applications of smart fabrics and wearables. Prior to SupplyCompass I worked in consumer research and innovation within sportswear, researching and testing the appeal of customisation, personalisation and wearables with consumers. What we noticed back then is that smart fabrics and wearables really only appealed to a very specific consumer of technical sportswear.

The COVID-19 pandemic has accelerated trends, particularly in the digital space, so it will be interesting to see how wearables and smart fabrics grow in popularity

## KEY TAKEAWAY

The fashion industry has been heavily hit with many manufacturers and retailers at risk to fail. However, the crisis will open to possible consolidation among big companies and suppliers. It might happen than some acquisitions will involve tech companies that can become strategic for big fashion and luxury brands. Small medium companies, will have difficulty in doing new investments in technologies.





ASTRAFIT

## KEY TAKEAWAY

Fashion designers could now use 3D fashion design software to design and generate 3D garments that are rendered true-to-life. Through the concept of crowdfunding, fashion designers could launch their designs before production. Decide on an e-commerce or social media platform to launch their designs before manufacturing a single piece of garment. Let customers interact, make comments, etc.

and application. Hopefully with investment and further innovation, they can become more affordable. For us right now, it's not a focus as we work primarily with fashion brands in the mid to premium segment, with the majority of fabrics sourced in organic cotton, rPET, linen and leather. An application for us that will be exciting is when we can look to smart fabrics to add traceability and visibility across the value chain. In terms of the shift towards demand driven, this change is already happening. We are seeing brands exploring smaller collections, testing with digital renders of products, and experimenting with new business models such as MTO [made to order].

**Rick Yu:** The customer is the king so we believe that the market should always be demand-driven or consumer-driven. The ultimate goal for our company is to enable industry 4.0 which is the on-demand service for the apparel business and we believe the on-demand service could be applied to not only the luxury end of the market but also the mass market. With all the advanced technologies blooming in the market, the digitisation of the garments, fabric, and body could cut the design and development costs enormously.

Fashion designers could now use 3D fashion design software to design and generate 3D garments that are rendered true-to-life. Through the concept of crowdfunding, fashion designers could launch their designs before production. Decide on an e-commerce or social media platform to launch their designs before manufacturing a single piece of garment. Let the customers interact, make comments, share, and then pre-order everything. The same process could be applied to mid-price brands, premium brands or luxury brands could also enable customisation with the 3D garment designs.

**Personalisation, but, would be different. Do you see technology transforming fast fashion into personalised fashion? How realistic can such an idea be?**

**Don Howard:** We don't get the sense that personalisation is a priority at this time



and that is not to say it won't be in the future. After COVID-19, standardising the fit of the core lines would be imperative. Getting customers into the right fit the first time they try on a garment is of course the holy grail. Brands need to choose a fit standard to go with and stick to that fit standard.

**Nikita Dobrynin:** Personalisation is the future, no doubt. It comes in different ways, shapes, models etc. I don't think that we are going to have a clothes-3d-printer at home someday soon, but an idea to forget about sizing labels, like "Extra large", "34", can come true relatively soon.

**Mike Colarossi:** I think it's important to differentiate between customisation and personalisation. Customisation, or selecting from a predefined set of options that a brand establishes, is here and impacting fast fashion. Many brands are already offering consumers the opportunity to customise garments online or in-store. Personalisation, or giving consumers the ability to make a truly one-of-a-kind garment, is an entirely different beast.

Personalisation at the scale and speed of fast fashion is a massive supply chain challenge that will require a digital revolution of the industry, from how we develop garments to how and where they are made. And while most brands are actively looking at how to address this area, the industry has yet to overcome all of the hurdles to personalisation at scale.

Furthermore, I would hypothesise that consumers who take the time and effort to personalise their garments are more likely to wear them for a longer period of time. That is almost counterintuitive to the trend-driven fast fashion space. So, while customisation will certainly continue to rise in fast fashion, I am not convinced that personalisation and fast fashion are compatible.

**JoAnn Martin:** Personalisation is not necessarily that different: the entire premise is for retailers to leverage their data to drive personalisation through experience, assortment, or location and delivery. These factors continue to remain a focus for retailers. For instance, retailers are now exploring more ways to execute final-mile delivery, such as by offering buy online, pickup at curbside

## KEY TAKEAWAY

Consumers are being more selective with their money, are taking more time to make buying decisions, and need to feel confident that they are making the right choices. Companies that can offer this security will reap the rewards. So, companies and consumers alike have less money to waste which means that the entire process from production to logistics needs to be more precise, more efficient, and more customer centric.



SHUTTERSTOCK / MONOPOLY919

## KEY TAKEAWAY

Personalisation at the scale and speed of fast fashion is a massive supply chain challenge that will require a digital revolution of the industry, from how we develop garments to how and where they are made. And while most brands are actively looking at how to address this area, the industry has yet to overcome all of the hurdles to personalisation at scale.

(BOPAC) options. They will also continue to leverage attribution in their data to identify items with the highest likelihood of selling. Technologies such as artificial intelligence (AI) and machine learning (ML) make personalisation a reality for many retailers looking for a quicker ROI, as AI/ML capabilities allow them to combine their data and isolate the most predictive attributes to help them define the right product assortments.

**Morgan Linton:** This is a great point and I think highlights where the industry is going. With more shoppers buying clothes online now more than ever before, the opportunity for personalisation has never been bigger. At the same time, personalisation spans two different areas - style personalisation and size personalisation.

While we've seen a lot of style personalisation options over the years, we're now seeing a strong push towards size personalisation and on-demand manufacturing. Companies that have found themselves stuck with physical inventory they can't sell are now more interested than ever before in finding a way to stop making more clothes than they need. I think we're going to see a major shift over the next few years towards on-demand manufacturing so people can go from personalising the style of existing clothes to making clothes specifically for them on-demand.

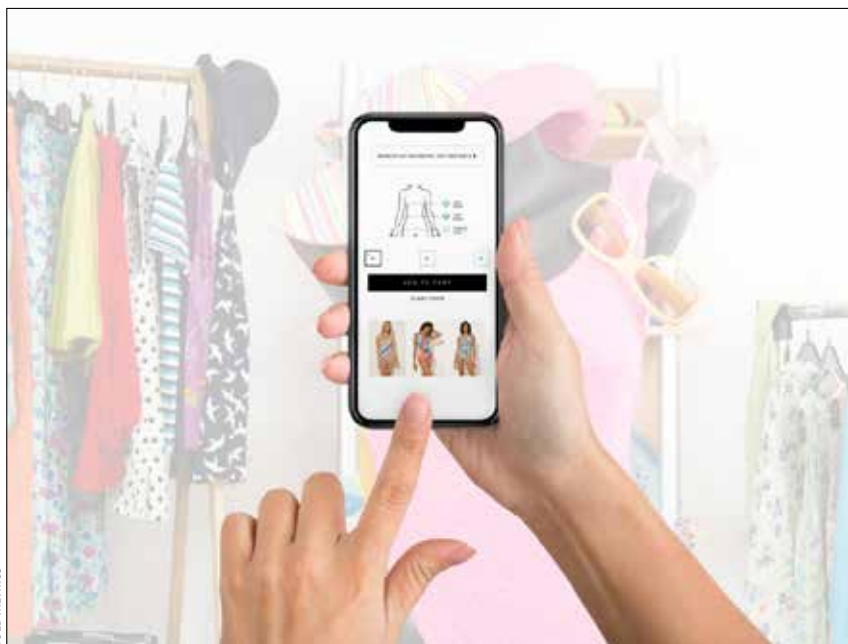
**Isabelle Ohnemus:** Technology and personalisation will have an impact on optimising their management of their supply chains and inventories as a first step. The next wave of innovation will be contextual intelligence and hyper-personalisation that will drive more meaningful customer interactions. The online and offline retail worlds are becoming less distinctive and retailers are improving their omnichannel offering to meet consumers' demands for ease of access and personalised dialogue. On the other hand, I don't think that made to measure fashion at scale will happen tomorrow.

**Michael B Reidbord:** What we have all gone through in the past three months will have an impact on all aspects of society. No one knows for sure how it will affect fashion or retail with the exception that the online shopping experience will dramatically increase. Personalisation online is much easier to achieve than within a retail store environment.

That being said, people like to investigate touch, feel and try on garments. With social distancing restrictions being implemented and limiting the number of shoppers permitted within a store, personalisation is a possibility.

In the luxury markets, however, service and the experience has a great deal to do with purchasing luxury goods. Fast fashion is different, but consumers still like to see what is hanging in the stores and try garments on.





**Sebastian Schulze:** Custom clothing might make it into verticals other than luxury, but there are some business models like fast fashion that would probably not adopt custom sizing since the business is modelled on mass production and fast turnaround. There will probably be more personalisation in the production chain as the technologies adapt, but verticals like fast fashion won't completely adopt personalisation on the production side.

A huge factor is onsite personalisation as API-driven solutions like Fit Analytics will reshape the shopping experience on category pages and other 'upstream' areas of clients' sites, e.g. by promoting items that are likely to be of interest and fit the shopper well.

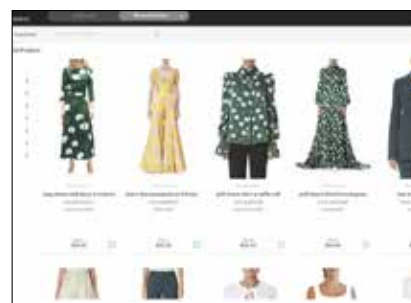
**Giusy Cannone:** It's a long shot and I'm not expecting to see personalised fashion at mass level soon. The personalisation can work for specific niches such as suits and shirts, and sneakers, but my opinion is that the choice to buy a personalised item will still be a niche and not a generalised habit.

**Abdullah Abo Milhim:** Fast fashion, has been hugely scrutinised during this crisis, and there will be more calls for fashion to slow down. I don't think personalised fashion is the solution for fast fashion, it much deeper than that; a fundamental rethinking is needed, as companies have been learning new lessons on aspects of consumer engagement, sentiment, supply chain disruptions and social responsibility. Yet, personalised fashion can serve other purposes considering that consumers are becoming more experiential. I think we are experiencing a shift in the interlinked relations between technology, personalisation and experience. The focus is the consumers again, but this time planning a strong role in personalising their own experiences through engaging with smart technologies provided by the brands. It is another form and shape of ecommerce, with augmented and automated processes playing a big role. It is already happening, yet it depends on the brand's philosophy and vision, in relation to the sought shape of relationship with consumers.

**David Sykes:** Yes, we're already seeing a big trend in AI curation from retailers, including personalised "what's trending" recommendations based on influential tastemakers, features that enable consumers to build their own wardrobes across a number of different brands, on their budgets, all in one place online. There's also a strong move for mass market brands to provide a customised experience for consumers, such as Nike By You Custom Shoes, or beauty brands like Clinique's custom-blend hydrator. This trend will continue to accelerate as customers expect more personalised experiences, and as brands hope to attract a wider range of audiences.

## Real tie moments for brand and retailer

NuORDER, a tech platform and app, provides advanced digital solutions to conduct business in real-time by fully integrating ERPs from the brands to retailers. This allows full visibility into products that are currently available, products that will be available in the future, anywhere in the world, transforming the buying and merchandising process through the use of their digital catalogue, online ordering, and visual assortments. Co-Founder and Co-CEO **Olivia Skuza** on how the industry is embracing a new way of doing business.



**A very timely pitch linked to a world order hit by the covid-19 pandemic. How is it going to help businesses in locked / quarantined towns and cities?**

Our platform is designed to digitise the entire market-to-order process. Within this centralised digital environment, retailers and brands can work together in real-time to make product selections and finalise orders anytime and anywhere, removing the physical barriers of face-to-face. It serves as an on-demand tool to power smarter selling, better buying and insight-driven assortments. This platform is essential for managing this current supply chain crisis—creating previously unthinkable capabilities such as 24/7 connectivity, enhanced visibility, and efficiency. It transforms the traditional retail buying process.

It's critical for both brands and retailers to present the best product offering to consumers, and that includes the online experience. Retailers need to assort their products and ensure that they have compelling offerings, whether it's a physical store or an online environment. Essentially asking themselves, "Are we capitalising on all the white space opportunities or avoiding duplications?" So, this platform that creates a more seamless and collaborative communication between brands and retailers, by creating a better buying experience for retailers through the use of the assortment tool. It allows retailers to browse products by season, delivery, division, category and availability, ensuring they are buying the right products for customers.



SHUTTERSTOCK / MONTRI NIPITVITAYA

## KEY TAKEAWAY

As businesses move into a protectionist mindset to get through the next year, future-proofing the business will need to remain a priority to ensure that strategies align with new consumer and business requirements. This means ensuring that plans around digitisation and strategies around 3D production are not put aside in the current emergency period.

**Arup Chakraborty:** There's clearly a sharper focus on personalisation these days, and technology is playing a significant role as a facilitator for this. The fast fashion concept heralded by e-commerce is here to stay and personalisation is here to stay. More than 90 per cent of tomorrow's transaction on e-commerce platforms will be driven by personalisation.

**Mark Burstein:** No concrete opinion yet. Still too early to gauge. But, it looks promising.

**Rufus Parkinson:** Our solution is focused on personalisation. Shoppers are able to get accurate fit and styling visualisations, which drives engagement, conversion and retention. Personalisation is a trend that is here to stay and will continue to rise.

**Flora Davidson:** Although personalisation and customisation has growing appeal, I still believe that most consumers want to buy into a brand's designs rather than be given the freedom to design their own. This was something I researched in great detail, and the resounding sentiment was that most consumers don't feel comfortable designing or customising products.

Where I see personalisation having mass application and appeal, is fit. However, a great deal of digital innovation is still required with brands and their supply chains for this to see adoption at scale. It comes back to my point that the fashion system needs an interconnected digital infrastructure to support new applications and innovations. I feel quietly optimistic as to the digital transformation that is happening as we speak, accelerated by the current pandemic due to necessity. So it might be sooner than we previously expected!

**Rick Yu:** Similar to the process above, we believe that technologies are the only road to making personalised fashion universal. Here are three simple steps that could enable personalised/ on-demand fashion:

- Step 1: Transform your physical designs to 3D digital designs by using 3D fashion design software
- Step 2: Use a virtual model to do the fitting and create marketing assets
- Step 3: Launch your designs before production, and migrate into on-demand manufacture

For more detailed information, have recently launched a blog talking about "Going Digital - a Vital Step in the Post-Covid Fashion Landscape for Brands of All Sizes".

Also, with everything going on in the world right now, we could expect to see more shifts from doing mass production in countries with cheap labour to nearshoring. With all the advanced automatic production equipment, PLM systems in place, countries with higher labour costs can still run these on-demand



production models and still make financial sense. Take Amazon's On Demand Apparel Manufacturing Patent as an example, the patent is designed to boost consumers' interest in buying higher-margin apparel. (like custom suits or dresses) It could also be applied to thousands of apparel companies serving as an affordable and efficient service for suppliers of all sizes.

**All these things are easier said than done. Economies are on a decline and most companies/people are going to be short of cash. So, do you expect the fashion industry to invest in tech? How do you foresee these to play out?**

**Don Howard:** As businesses move into a protectionist mindset to get through the next year, future-proofing the business will need to remain a priority to ensure that strategies align with new consumer and business requirements. This means ensuring that plans around digitisation and strategies around 3D production are not put aside in the current emergency period.

**Nikita Dobrynin:** I totally agree. In times of crisis only the resourceful ones flourish. We don't know how deep the crisis is going to take us. Fashion tech has to be lean and very productive. It's no time for super expensive R&D with unpredictable results. The good news is that there are a lot of great and affordable fashion tech out there. Fashion industry members have a lot of opportunities.

**Mike Colarossi:** Some of the best innovation is born out of crises, and often simply out of necessity. I believe that is the reality that the apparel industry faces today. Organisations who fail to adopt technology are likely to have a different recovery trajectory than organisations that are "doubling down" in technology.

The real challenge for most organisations is balancing the reality of short-term cash constraints with the long-term need to embrace technology. Every organisation will be different, and for most, I think it will simply come down to prioritising investments that are likely to generate the greatest return, then adopting an agile approach to execution, in which companies place smaller bets on proof-of-concept projects before investing in full-blown roll outs.

**JoAnn Martin:** Companies can't afford to not invest. Since many fashion retailers will be contracting their staff due to COVID-19, they'll need to find other ways (such as through automation) to drive key business decisions. Technology will be the catalyst that enables them to adopt more efficient workflows. Retailers' on-hand cash (though lower than prior to COVID-19) will need to be prioritised for technology investments in order to optimise their inventories and workforces.

**Morgan Linton:** We see companies taking one of two approaches now. Some companies are freezing budgets and deciding not to invest in technology, they're

## That's a 400% rise in enquiries for new tech

Swiss tech start-up Meepl is offering free access to its smartphone-enabled, 3D body scanning technology for fashion SMEs impacted by the COVID-19 crisis. Chief executive **Ferdinand Metzler** elaborates.



**What has been the response to the free offer so far? Please tell us more about this software.**

Since we announced Meepl is offering free access to its made-to-measure technology we have seen a 400 per cent increase in enquiries. Out of these, we have been appointed by seven businesses with another eight brands about to sign on the dotted line. We also have several demos scheduled over the next couple of days too; so there is definitely lots of interest which is encouraging.

The current expectation from the businesses we are speaking to is that Meepl is their only alternative to keep them in operation since they cannot interact with their customers. Our platform enables them to remotely acquire their customer's body measurements which their business relies on and traditionally would have been done manually. The retail industry is going through its biggest shift in a long time. For businesses to survive in a future scenario, they are going to have to accept they will need to adapt and harness the technologies that will help them thrive such as Meepl.

The Meepl app creates an almost 100 per cent accurate body image using only two pictures within seconds. By using visual computing and deep neural networks, the two images will obtain 50+ measurements of the body instantly. These measurements will also take into account body height and will use the latest body reconstruction algorithms to create a perfect duplicate of the users' body. For online tailors, Meepl is the enabling technology to make their job scalable and for the end-users it is a convenient way to get their measurements professionally within the comfort of their homes. Additional services of the Meepl technology extend to size recommendations and in the very near future a virtual dressing room experience.





SHUTTERSTOCK / OLLY

## KEY TAKEAWAY

The challenge for most is balancing the reality of short-term cash constraints with the long-term need to embrace technology. Every organisation will be different, and for most, I think it will simply come down to prioritising investments that are likely to generate the greatest return, then adopting an agile approach to execution, in which companies place smaller bets on proof-of-concept projects before investing in rollouts.

really hoping things return to normal quickly. Other companies see the ways in which the market is changing and are making investments now to stay relevant and nimble. I think the companies who invest in technology and innovation today are the ones who are going to be able to survive and thrive in the future.

**Isabelle Ohnemus:** There will be consolidations and restructuring of many in the fashion industry as a result of this economic turmoil. As I mentioned above, those who are agile, embrace innovation fast will be the ones who are able to start to invest in tech and make that digital transformation for survival. In addition, new fashion brands will emerge creating new efficient, sustainable supply chains in response to consumers demand for more transparency. Sustainability will become a must have of retailers' business models, rather than a nice to have.

**Michael B Reidbord:** Process improvements and system upgrades save money. Not investing in innovation and making these changes now will end up being more expensive in the long-term. You are seeing this play out in retail today with so many companies filing for bankruptcy.

Retailers need to fundamentally change how they design, plan, and distribute goods and how they go about servicing the needs of their valued customers. By implementing new innovations, adding efficiencies, shrinking their supply chains, and better understanding the needs and wants of their customers, their business will improve, grow and thrive.

**Sebastian Schulze:** The declining economies and the liquidity shortages of consumers are precisely the reasons why more companies will adopt sizing technologies and other e-commerce solutions. Consumers are being more selective with their money, are taking more time to make buying decisions, and need to feel confident that they are making the right choices. Companies that can offer this security will reap the rewards. What it boils down to is that companies and consumers alike have less money to waste which means that the entire process from production to logistics needs to be more precise, more efficient, and more customer centric. Solutions with a performance based business model such as Fit Analytics will be chosen as a preference because those solutions only charge for the added value created.

**Giusy Cannone:** The fashion industry in particular has been heavily hit during the COVID-19 crisis with many manufacturers and retailers at risk to fail. However, the crisis will open also to possible consolidation among big companies and suppliers. It might happen that some acquisitions will involve tech companies that can become strategic for big fashion and luxury brands. On the other side, small medium companies, will have big difficulty in doing new investments in technologies, as they



will strive to survive.

**Abdullah Abo Milhim:** Technology has been playing a vital part during this crisis, in areas of payment systems, money transfer, running daily business activities and engagement with different stakeholders. As many businesses are learning new skills and experiencing a new reality, a new force of change will be on the horizon. More businesses will be pushed to invest in their own resources and putting growth strategies on hold for some time. Technology has been accelerating in its transformation from being a supporting tool in the value chain to a driver of the whole thing. Company cultures will change, it is the time to invest in enhancing soft skills to achieve two goals around digital transformation and improving internal capabilities.

**David Sykes:** Overall, the fashion industry will need to invest in the right technologies to meet financial demands and customer needs. Buy Now, Pay Later solutions will be more important and relevant than ever in the foreseeable future, as companies bring their businesses online and as consumers seek more financial control and flexibility for their payments. Drivers of the rapid growth in the adoption of payment instalments originated from the global financial crisis of 2008. Millennials and younger audiences grew up with an experience and understanding of the impact on their families of carrying debt. Millennials are now using debit cards more and seeking alternatives to credit cards for when they need some flexibility. This trend will continue across wider demographics to move away from revolving credit lines, accruing debt and compound interest as consumers begin to embrace new financial tools in their daily lives.

**Arup Chakraborty:** Adoption and investment in technology has been mostly top down—from bigger brands to smaller ones—as the technology becomes cheaper and more affordable. However, the current pandemic appears to be altering this trend in some ways, especially since it has accelerated the digital process due to the need for contactless delivery and business.

Ironically for us, some of our big customers are going slow on digital projects. One likely reason is that the executives responsible for digital are no longer sure of retaining their jobs. Besides, larger companies have other issues on hand like employee protection, legislation and critical supply chain issues that are keeping their hands full. On the other hand, we were more than surprised to have signed small and mid-size customers every day this month. These customers came from geographies as diverse as Australia, the US, Pakistan, UK, Canada, Morocco and even India.

These are all bespoke merchants—they do custom tailoring for men, women or even both. In these times of mandates for physical distancing and self-isolation,

## Blockchain, IoT can solve the challenges

ESG Robo is a start-up that implements IoT and blockchain solutions for fashion brands. It implements IoT-based sensors that assess production efficiency and work conditions for workers. The data analytics and strategic advice provided allow manufacturers and brands to address some of today's most pressing challenges in the integration of sustainability information into practice and unearthing opportunities.

**Sandeep Raghuvanshi**, CEO and founder of ESG Robo, talks tech.

**Please tell us more about how IoT and blockchain solutions can help textile / apparel companies in today's dismal situation?**

We have studied the issues in detail and have developed a targeted solution to address the highest impact problems at the garment factory floor.

The first step for efficiency improvement is automated, granular and reliable measurement of every minute of activity of each machine on the production floor by deploying sensors at each work desk. These sensors capture details of machine's availability, needle running status and reason codes for lost time. Additional data capture mechanisms are provided to add needle breakage and other machine breakdown events. Besides these, sensors also collect ambient environment data such as temperature, air quality, illumination, noise levels etc. The data is then transmitted to a central server where it is accumulated and prepared for analysis. Factory managers and supervisors get access to interactive reports and dashboards that help them identify incremental or radical improvement opportunities. With detailed history being available, managers can get auto updated latest operator skill matrix, man-machine status for line setting planning and other critical details for efficient production planning. This detailed analysis allows to achieve an increased throughput of 20-25 per cent easily, and since the profitability of the factory operations are highly dependent on the production efficiency, this will have a multiplier effect on profitability of the orders.

To address the concerns of brands and other stakeholders, factories can easily share selected data using blockchain smart contracts. Trust in the data integrity is established by blockchain and smart contracts allow rapid and easy sharing of data while maintaining strict control and ownership. By combination of IoT, cloud and blockchain, the factories can solve highest impact challenges that directly uplift profitability and enable them to win and retain clients.



SHUTTERSTOCK / ANDREY\_POPOV

## KEY TAKEAWAY

Those who are agile, embrace innovation fast will be the ones who are able to start to invest in tech and make that digital transformation for survival. In addition, new fashion brands will emerge creating new efficient, sustainable supply chains in response to consumers demand for more transparency. Sustainability will become a must have of retailers' business models, rather than a nice to have.

neither they can go to their customers, nor can the latter come to them to get measured. They all face one problem: "How to customise apparel for customers if they can't measure them?" The interesting part is that we did not make any cold calls to these MSMEs. Rather, many of them reached out to us by searching for companies that offer tech solutions that would help them digitize their business. They were happy with the accuracy of our app. Given the situation, it would entirely depend on the investment required and the benefits derived from the same. In our case there is no investment required.

**Mark Burstein:** I absolutely expect the fashion industry to invest in technology. It's happening right now, in spite of the current economic situation. The fashion companies that do invest in technology will thrive. The ones that don't will not survive. It's that simple.

**Rufus Parkinson:** Because retailers are margin driven, they will closely assess the return on investment of any solution. In order to be a win-win, the key is for solution providers to clearly demonstrate ROI, and ensure pricing is fair and accessible. We are very confident of the future outlook.

**Flora Davidson:** I absolutely see the fashion industry investing in tech. Over the past two months, something has happened we didn't expect. Organic enquiries into SupplyCompass have increased by 400 per cent. Brands and manufacturers are all of a sudden seeking out new solutions and are open to changing their ways. With time to explore new solutions, I've noticed a profound, and positive change in attitude and an appetite for experimentation. I reflect now that perhaps the main barrier to change wasn't, in fact, a lack of want, but a lack of time.

Design and production teams were so busy struggling to keep up with the exhausting pace of the fashion calendar, they weren't afforded time to pause and think – "Is this really the best way to do this?". Many teams were, understandably, too busy to change ingrained habits because it was easier in the short term to stick with what they knew. This period of lockdown has been the Fashion Industry's version of Bill Gates' famous Think Weeks. Downtime is something in short supply in the fashion world. Such time is invaluable, to reflect on old habits and build new ones, mental space to be creative, and an opportunity to re-think and rebuild





things better than before. Many businesses will be focusing heavily on cutting costs throughout the rest of 2020, with many not able to scale their teams up to pre-COVID-19 size. This means it will be about up-skilling teams and looking to technology to enable more informed choices.

With global travel restricted, the traditional methods of finding new manufacturers and suppliers (which requires teams to fly around the world to visit trade shows or factories) are off the cards. Brands will need to look online to access to vetted, compliant digital supply networks as their main source for new partners. This move online will enable brands to more effectively manage complex global supply chains and achieve greater traceability and visibility. Cloud-based PLMs, 3D sampling and virtual showrooms will also enable design, production and procurement teams to source smarter, be more sustainable and find efficiencies across the product lifecycle. Now really is the time for change.

**Rick Yu:** In the short term, investment in technologies will seem so expensive however looking in the long run, we believe that technologies are the future and once all the big brands take the lead to start adopting fashion tech, all the stakeholders will be forced to adapt.

In addition, adopting technologies isn't as expensive and impossible as people expected. Technologies could be a word that scares people off since it has always represented high-priced. However, with more and more competition entering the fashion tech market and as the technology advances, digital transformation for fashion will be more and more approachable for everyone.

Our company understands the challenges and we try to make digital transformation affordable for brands of all sizes. We make our digital package tailored to different demands. Brands only pay for the services that they need instead of adopting the whole process at once. We also provide a lot of pre-made 3D garments for customers to make instant use.**FF**

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## Retailers have not embraced technology

Bigthinx is a deep-tech startup specialising in AI for fashion and retail. Its software carries out a body scan using only two photos from a smartphone to calculate 44 precise body measurements and body composition ratios with over 95 per cent accuracy. Its neural networks create a personalised virtual avatar from these photos and use AI to digitally recreate 3D clothing from any 2D image instantly to show how it would look, fit and drape as if in reality. Founders **Shivang Desai** and **Chandralika Hazarika** share views on how things are going to play out.



**Could you specify a few brands interested in virtual photo-shoots and fashion shows? What are they looking for? And, why so?**

The pandemic has adversely affected the fashion industry, from supply chains to photoshoots and fashion weeks. The industry is headed for a massive upheaval, and since it was already poised for disruption, the pandemic has caused retailers to rapidly adopt strategies that were only distant options until very recently.

During the covid-19 crisis, retailers are not able to carry out photo-shoots and fashion shows. For many retailers, this inability has been a huge setback as runway shows and product shoots are necessary for them to showcase collections to distributors, wholesalers and customers worldwide, who are unable to travel at this time. Traditionally, such customers travel for fashion weeks from all over the world where they experience the designs of fashion houses on the ramp and place bulk orders. To help such retailers, we have adapted our Lylike avatar technology to create digital fashion models which brands, especially in luxury fashion, can use for completely virtual photo-shoots and runway shows; all for a fraction of the cost of traditional practices, and with far greater opportunity for creativity and flexibility. These shows are recorded as videos which can be displayed over the internet and allow the brands to conduct business uninterrupted.

For example, one of the world's largest fashion retailers in Paris has approached us to digitise their clothing on the avatars of supermodels and display these in a virtual catwalk.