Summary of 3D TECH Festival 2020

EXECUTIVE SUMMARY REPORT

Alvanon in collaboration
with e-learning platform MOTIF

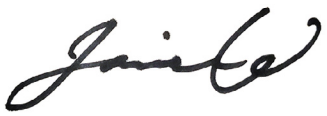
alvanon

The 3D TECH Festival 2020 was a defining moment for our industry. The four-day online event was attended by over 5,800 delegates, across 1,000+ brands and 94 countries. Some 60 presenters shared their exceptional expertise and experience. These figures alone show we are an industry yearning for digital transformation. We recognize we must change and want the knowledge to implement that change.

At Alvanon we have experienced first-hand the digital transformations of over 200 apparel brands around the world. We have seen how companies have successfully navigated the many and complex digital challenges and identified the knowledge gaps. We recognised a need to bring the industry together to navigate the disruption. To this end we collaborated with our e-learning platform partner motif.org to deliver the 3D TECH Festival 2020.

We are so grateful to our presenters, all of whom are recognized leaders in the digital world or have developed successful technology, business and training strategies, from which we can all learn. They gave their time and expertise in order to support companies and people as they transition into a digital way of working. I also thank our industry sponsors who understand the value of collaboration, continual learning, sharing knowledge, experiences and opportunities. Together we can build a dedicated global 3D community that can take our industry forward.

This Executive Summary Report highlights some of the key takeaways and presentations from the event. We hope you are both informed and inspired by them, and will SHARE THIS WITH A FRIEND.



Janice Wang, CEO Alvanon

Introduction

Speakers at the global **3D Tech Festival 2020**, were unanimous. The dialogue around fashion's digital transformation has changed. It has moved from 'The industry needs to change' to 'The industry MUST change.' The pandemic has merely accelerated and focused the industry's imperative to do things differently. The old way was not serving businesses, fashion professionals, consumers or the planet.

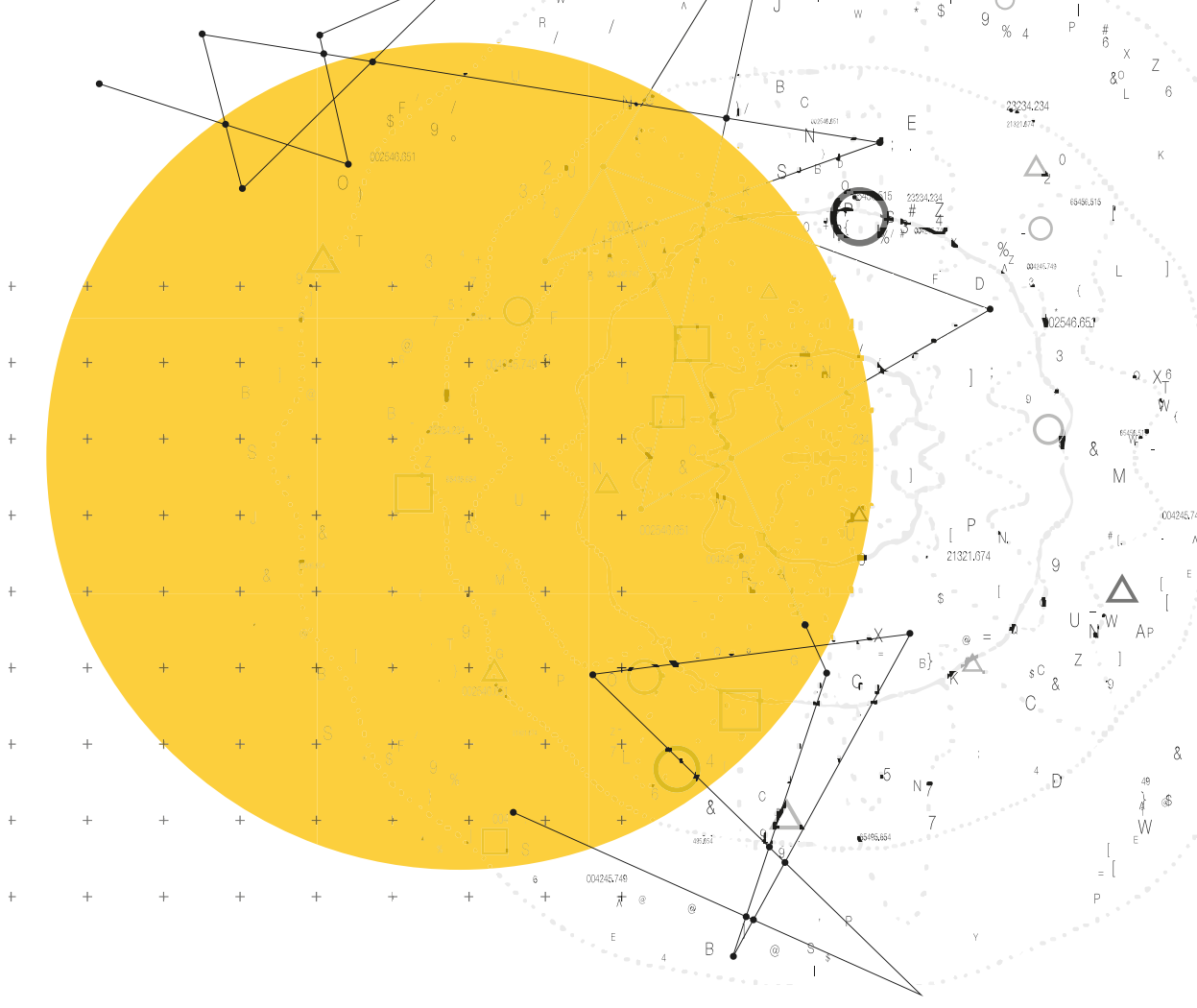
Digital disruption is already transforming the way the global fashion industry designs, produces, fits, sells, delivers and communicates with ALL stakeholders and consumers. Companies and fashion professionals across all elements of the supply chain must adopt an end-to-end digitalized product development and management strategy to survive and thrive.

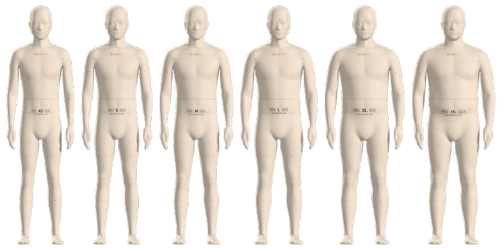
The conference addressed four key areas where change must be effected:

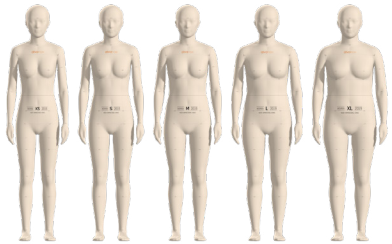
- **Data Collection & Standards**
- **Creating & Marketing**
- **Production & Supply Chain**
- **3D Skills Development & Careers**

Data Collection & Standards

KEY TAKEAWAY: Businesses and the planet cannot sustain over-supply. Accurate, current data is the basis of producing less, more relevant and successful product. Standardisation is key and data driven standards must underpin all product development. Companies must use data to generate standards on the size, shape and demographic characteristics of its target consumers. Only if this data is truly relevant to a defined consumer population will garments be relevant. Digitalization enables companies to standardise and share ALL their critical standards information and tools in a hub that, everyone who needs to, can access. A library of agreed, defined and consistent standards that would include body blocks, fabrics, fit standards and 3D avatars - must form the basis of all product development. These ‘Asset Libraries’ are the key to generating ‘Authentic Digital Garments’, that is digital garments that are truly representative of the physical product.







The Authentic Digital Garment

Jason Wang | COO at Alvanon

Digitalizing workflow can only happen if a company has built an ‘authentic digital garment’ library of high-quality digital assets. These must contain all of the necessary data, standards and tools required to properly mass produce a garment.

The first step is to understand, create and define the size and shape standard for a target consumer population. Accurate body standards enable companies to generate a complete range of correctly sized and shaped avatars. These virtual bodies, encompassing all the key measurement data, are the basis of producing a relevant authentic digital garment.

Authenticity is a key requirement of an authentic digital garment. Fashion professionals across the product life cycle (PLC) must trust that the digital garment is the same as the physical product. These authentic digital garments can then be confidently and quickly generated and modified in the virtual world before committing to more costly and wasteful physical samples.

Having an authentic digital garment library of all core products, can cut physical sample production by up to 80%. This library of authentic digital garments will become one of the most important shared assets for any apparel company.

"We have an opportunity today with the technology and tools available to us, to build a new future for the apparel industry. One where the digital and physical are closely connected and work together."
Jason Wang, COO, Alvanon

How 3D and standardization bring back the craft in fashion

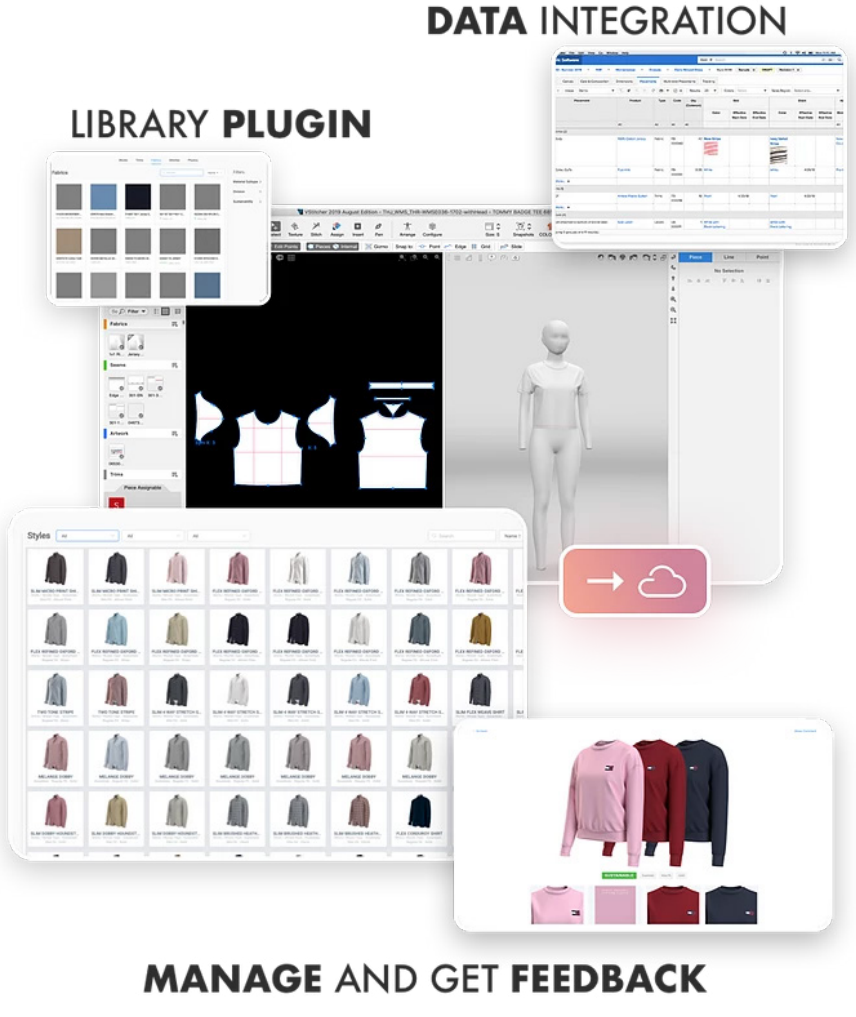
Dominic Sluiter | Head of STITCH (a PVH company)

In order to make 3D accessible and scalable, it must start with standardisation and a good library of authentic digital assets such as pattern blocks and fabrics. Making 3D product should be a positive and collaborative experience for all the fashion professionals involved. However, to succeed it has to be done at scale.

STITCH has supported such clients as Tommy Hilfiger and Calvin Klein on their digital transformations where scalability of standardised digital assets has been crucial. To generate quality, consistent product at scale, everyone involved in the product design, development and production processes, must understand and share the digital 3D assets.

An understandable concern within the apparel industry is that increased digitalization of workflow, especially at the design stage, will compromise creativity. However, 3D technologies can actually bring the craft back into fashion by enabling businesses to get closer to the product and really obsess about the details. Putting designers and product developers in control and supporting their creativity.

“The introduction of 3D in this industry is a massive change. Let's not underestimate that, it requires a lot of guts. It requires dedication, flexibility, and a very open mind.” Dominic Sluiter, Head of STITCH



Accelerate, Automate & Scale Your 3D Product Development

Darcy Reno | Co-founder and CEO at FNX

The feature film industry has been using a 3D pipeline for years and its practitioners can teach fashion companies a lot about enhancing the product development process in a digital environment. A systematic, standardised pipeline for scalable rendering is necessary to allow companies to scale product imagery for online marketplaces.

Learning 3D is not that hard. Scaling 3D is very hard. Done wrong, 3D can become a complex cost center. It can take 18-24 months to build a simple 3D pipeline. Maintaining this can become a recurring cost center, which is why companies must adopt a collaborative mindset in order to scale efficiently.

What does it take to succeed in the digital transition?

• A culture of embracing change and innovation

Success is not just a technical challenge. Successful change must start with a company's culture. Companies must nurture a culture of innovation and experimentation at all levels of the business.

• Don't try to "Do It Yourself" for everything

Don't do everything internally - it will take years and businesses won't be able to keep up with emerging technologies. Know when to buy in the technology and the expertise. Buying solutions that can be integrated, will get a company up and running much faster.

• Include the entire business in the vision

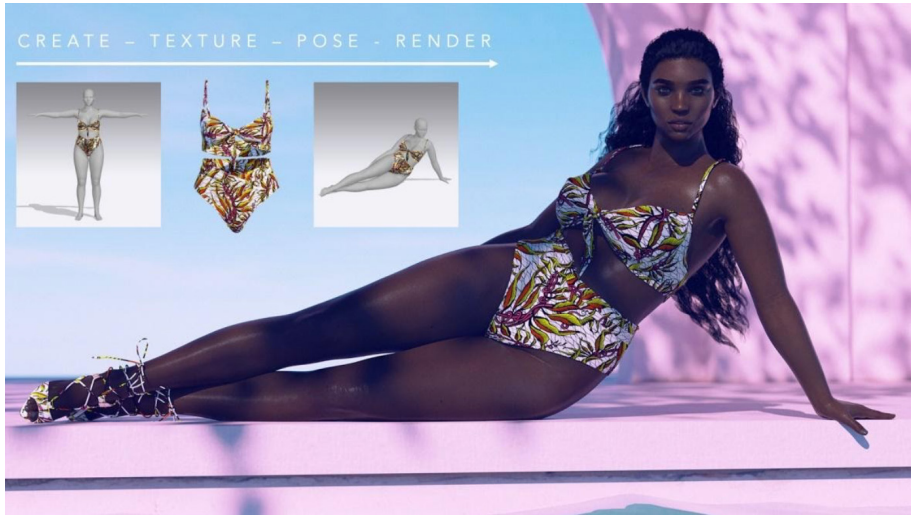
And this goes from the C-suite, to the production floor and all the way to vendors and partners; everybody has got to be engaged and believe in the transformation.

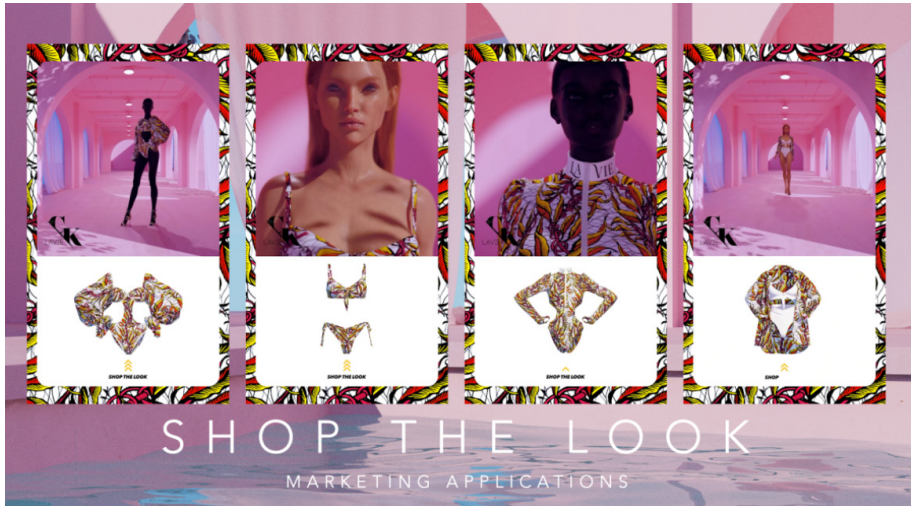
"If it's not perfect - it's still valuable! Don't wait for the 3D technology to be perfect, it never will be. Don't be afraid to use 3D imagery, even if it isn't perfect! 3D output won't be perfect overnight, knowing that is a key part to success."
Darcy Reno, CEO, FNX

Lil Miquela, virtual influencer with Bella Hadid on Calvin Klein's #MYTRUTH Campaign

Creating & Marketing

KEY TAKEAWAY: Digital imagery is revolutionizing the way fashion and apparel product is being designed, showcased and sold. The generation of animated, realistic human-like avatars is transforming every element of the fashion world from design and sampling through to catwalk and social media campaigns. Celebrity virtual models and powerful social media influencers are all reshaping the online experience and consumers love these virtual representations of a human world. The rendering techniques that create the lifelike images and animations are still in their infancy but in the hands of those who know how to use these tools, the results are compelling and powerful. Indeed a portfolio of digital models wearing properly
rendered designer garments in dreamlike catwalk settings or virtual super-influencers that can drive trends, will appeal to brands and consumers alike.





How to create a fabulous digital runway in 3D

Cameron-James Wilson | CEO / Creative Director at The Diigitals

The Diigitals have been behind some of the most innovative 3D fashion campaigns and represent digital talent, such as the enigmatic digital supermodel Shudu. As the first all-digital modelling agency in the world, it recently created a trailblazing runway to showcase its vision of what a 3D catwalk can look like.

Everything involved in creating the digital catwalk is “super achievable”. Companies must have the vision and understand the workflows needed. For example, garment digitization - design concept and patternmaking, pattern and fabric, still images (post and simulate).

Each outfit is created from original sketches, photos and pattern pieces. The garment and model are then textured, posed, placed into the final scene and then rendered. Still renders take a few hours to process. Animations, however, take days. One animation on the Digiitals runway took 36 hours to render for five seconds of catwalking.

The Diigitals has also created some “shop the look” stories for Instagram, which helps with engagement and shows clients how these assets can be used. They’re ideal for social media campaigns and consumers really engage with 3D renders of clothing and models.

Even after physical shows return, many in the industry expect the use of digital 3D tools will permanently shift the schedule, cadence and strategy of virtual catwalk shows.

“I’m all about making things accessible, sharing workflows, and just being open and honest because I want to see this industry achieving its best. I want to see what people can really create with similar sorts of assets.” Cameron-James Wilson, CEO / Creative Director, The Diigitals

The Future of Digital Humans

Mao Lin Liao | Founder | CEO at R E B L I K A

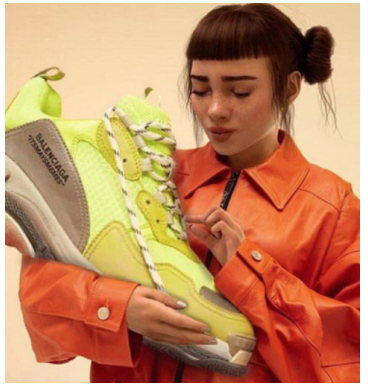
A digital human is a 3D digital copy of a human. Sometimes 3D body scanning is used or more often, photo references are used to make 3D scopes. This process can take from one to three weeks. Usually the end goal is to create a photo realistic output.

Alvanon has partnered with REBLIKA to create a photo realistic fit model layered on to its series of 3D virtual avatars. Adding skin tone and textures make the virtual fit form more realistic. The implications of combining an accurately sized and shaped avatar with human features goes well beyond product development. They can also be used in marketing and selling direct to consumers.

Digital humans are increasingly being used on social media to help brands build awareness, and the virtual influencers are becoming very powerful.

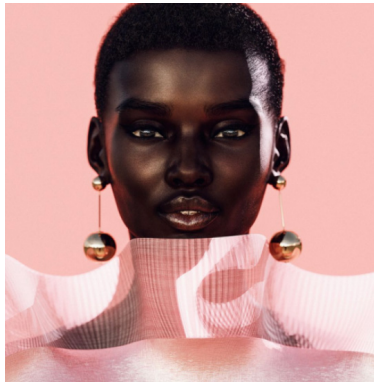
Working with digital influencers puts brands back in control. Digital influencers don't require contracts or negotiations, won't defect to a competitor, age or complain.

"In the future we want to work more with brands to manage their virtual influencer portfolio and collaborate with text to speech focused companies to bring innovative voice synchronised animation and virtual assistance services to the market." Mao Lin Liao, CEO, Reblika



The number one virtual influencer is **Lil Miquela**. She has over 2.8 million followers on Instagram. She is one of the most successful examples of virtual influencers and has collaborated with Samsung, Prada, UGG and Balenciaga. These are very good examples of how brands can use virtual influencers to create successful campaigns.

With her recognizable pink bob is **Imma Gram** from Japan. Most recently, she's been featured in IKEA and Magnum campaigns. Imma is a really good example of a perfectly executed digital human that looks so real, it's very hard to tell if she's a digital or not.



Shudu is one of the most famous Instagram influencers created by Cameron-James Wilson. Cameron has his own digital modeling agency and he's the creator of some very famous influencers like Koffi, Brenn, Galaxia and Dagny. This is a really good example of using digital humans in the fashion field.

Makers & Supply Chain

KEY TAKEAWAY: Companies and fashion professionals across all elements of the supply chain must adopt and engage with an end-to-end digitalized product design, development and management strategy to survive and thrive. Developing, applying and sharing digital assets in a strategic digital workflow environment will yield significant benefits for everyone involved. Design and product pre-development time scales can be reduced by up to 50%, while workload and sampling time scales can be reduced by some 30 to 60% and first time right performance increased by up to 50 percent. Such significant improvements in efficiencies means apparel
companies can be more responsive, flexible, transparent, sustainable and consumer relevant.

However, to succeed it requires both technological and cultural transformations. In addition to technology investments, brands and retailers must simplify their supply chain and forge meaningful partnerships with their suppliers, where mutual and supportive technology investments are implemented, shared and understood.

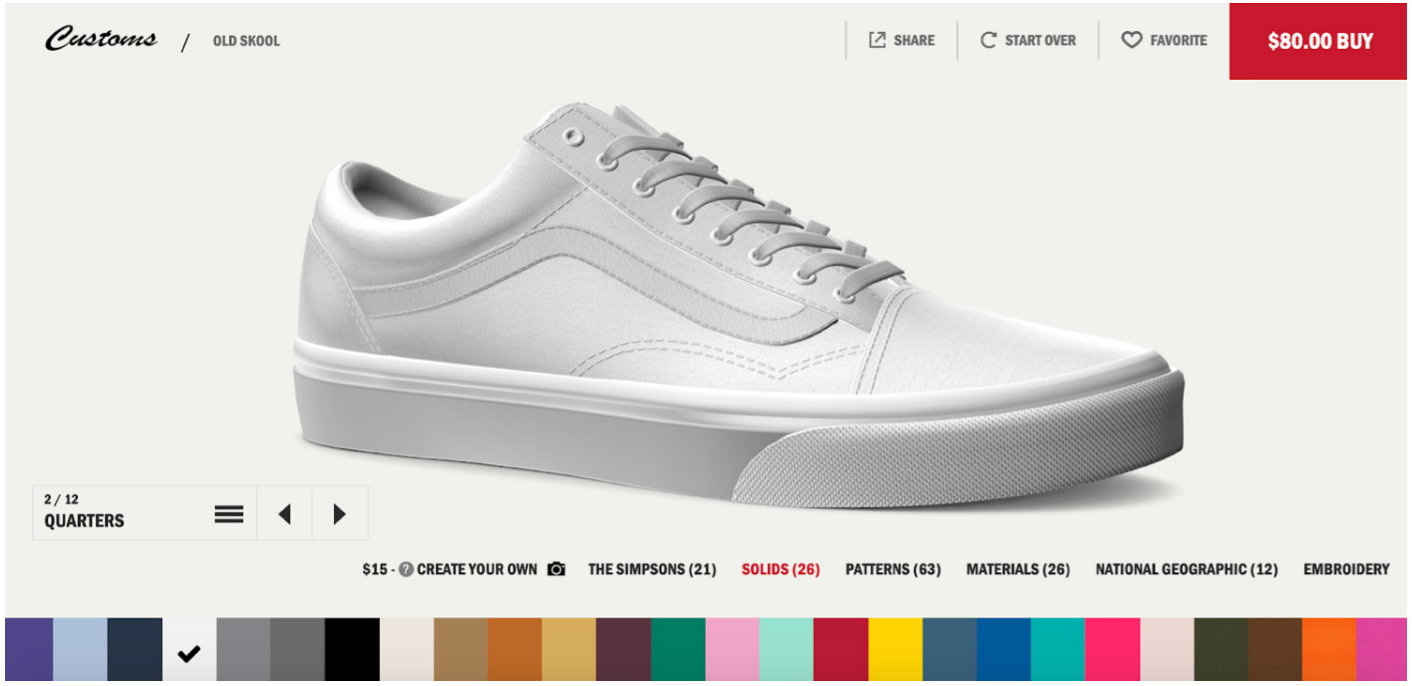
How to Digitize the Go-To-Market Process

Joshua Young | Director, Digital Product Creation at VF Corporation

Joshua Young is a world authority on digital transformation for the fashion industry. He has helped brands such as VF, Nike, Patagonia, PVH, Carter's and Lululemon reduce costs, shorten the time to market and increase sales via better decision-making enabled by digitalizing their assets and workflow.

He recognised that in order for the industry to leverage digital transformation, companies must change the way they do business, starting with 'new processes, new methods, new materials, new tools, new roles and new ways to sell.' This requires changing the way they work internally and with vendors and suppliers. It is not just about investing in new 3D software.

New Processes	3D Concepting; Digital Design, Digital Prototyping and Sampling; Visual Merchandising; Digital Retail Planning; Digital Selling; 3D consumer experience
New Methods (Factory Partners/ Digital Samples)	Reduce physical prototypes and samples; reduce costs and simplify logistics; increase product development speed, better quality product - fit & accuracy; more sustainable; increase desirability
New Materials (Supplier Partners/ Digital Materials)	3D Samples need 3D Materials, Material teams working from home; Elimination of material fairs; Teams buying materials online; Designers creating digitally
The Benefits	Welcome to the Digital Swatch Card; Sell to brands & increase sales; Reduce costs and simplify logistics; Speed developments (Digital Strike-Offs); Open new (digital) markets; More sustainable
New Tools (Digital Tools Equal/ New Capabilities)	3D is the new paintbrush; Visualize shape, flow and volume; Fully express design intent; New ways to reach the consumer; Skill is skill, craft is craft in physical, 2D, 3D
New Roles (Invest in People/ Digital Skills)	Empowering people accelerates change; Retrain, reskill, redeploy; Digital processes in education; Brand/Education partnerships
New Ways to Sell	How do we get up close and personal with the product? Vans Custom Shoes -this is the industry's best customizer (3D customizer).



Vans Custom Shoes is an excellent example of how digital assets can be used to sell customized product to consumers. By digitalizing the workflow process and creating a library of digital assets, Vans has successfully scaled up its business and enhanced its customers' personalized experience. It has reduced costs, increased speed, decision making, flexibility and quality. It has invested in technologies and training both internally and with its factories.

"By doing this digital journey together, we're all going to benefit. You're going to be ideally saving costs and increasing revenue. We do both need to make an equal investment in this technology. Empowering people is the most important. We must value the skillset. "

Joshua Young, Director, Digital Product Creation, VF Corporation

3D Skills Development & Careers

KEY TAKEAWAY: Many of the skills required to realise the potential of 3D digital technology investments are new and emerging, such is the advanced pace at which the technology is moving. Therefore, upskilling workforces, partnering with academic institutions and an investment in continual learning programmes are imperatives to continued success. Employing digital natives to plug the skills gaps is not enough. Even their skills will be superseded by new tools and they do not have the experience of making things. Existing practitioners know what works in the physical world. So as companies transition into a digital way of working they must also support their existing workforces and foster a ‘learning mentality’ across their people and teams.

The State of Skills 2020: Are you 3D ready?

Catherine Cole | CEO at MOTIF

In early 2020, MOTIF conducted a global skills survey to take the pulse of the fashion industry and assess the level of investment in skills by apparel professionals and companies. Over 900 apparel professionals from across the value chain took part in the survey, supported by 19 apparel industry associations.

While there is clearly still a need for strong fundamental skills (like apparel costing, sourcing, supply chain management, etc) one key finding is the perceived gap in "future" skills that combine 3D digitalization and data skills with technical skills. **Download the 2020 report**.

2020 SURVEY HIGHLIGHTS

Business priorities are changing

- Employee training and skill development is still one of the top two business issues
- Pre covid - both sustainability and strategic sourcing jumped to the top in 2019/2020. Post covid - digital creation skills have come to the top of the list

To hire or upskill?

- Keeping up with technology and latest business trends is the top motivator; with employee satisfaction and engagement close behind
- In the last 12 months, more large companies have turned to upskilling their workforce while more smaller and mid-sized companies are looking to hire in new skills

High levels of satisfaction are elusive

- 66% express some sort of dissatisfaction with the training they receive
- Biggest levels of dissatisfaction are at the junior levels; 13% difference with management

There is a disconnect

- 77% of executives feel employees do not proactively take courses
- 44% say employees only take courses when they are forced to
- Yet, when junior employees were asked, 71% say they proactively take courses

The traditional view of education was you went to university and came out with a degree, sufficient to last you a 40 year career. University education and degrees are still important but there is now a need for continually upskilling. The shelf life of skills is now five years.

New competencies lay around being able to manage digital libraries, data science skills, virtual product sampling and of course proficiency in using the tools themselves.

"As an industry we need change agents throughout organizations – individuals, teams, executives who are able to reimagine roles and processes and work differently. This may be a disruptive process. To do that, we need people with a new blend of skills. This is the time to reimagine and reinvent roles – within companies and within careers." Catherine Cole, CEO, MOTIF

Future of Innovation: Leading Change as a Digital Innovator

Safir Bellali | Sr Director / Advanced Digital Creation at VF Corporation/Chair of 3D Retail Coalition Sub-Committee on Education
Darcy Reno | Co-founder and CEO at FNX

Disruptive changes to business models will have a profound impact on the employment landscape over the coming years. With the World Economic Forum, '**The Future of Jobs**' report finding that 65% of children entering primary school today will ultimately end up working in completely new job types that don't yet exist. Reinforcing the critical importance to develop agility and the ability to learn fast.

Digitalization is a challenge that is bigger than any single organisation and the importance of collaboration is tantamount. The **3D Retail Coalition (3DRC)** is a collaborative group of global retailers and brands, working together to advance 3D technology for apparel, accessories and footwear designers, retailers, manufacturers, and supply chains. The mission is to create an aligned strategy to tackle this major digital disruption. Safir Bellali leads the education sub-committee with three main goals:

1. Recommendations for the delivery of modalities of upskilling and teaching in 3D digital
2. Certification matrix - contract between industry and education institutes, supported by technology partners to deliver a curriculum teaching digital skills in the context of the certification matrix. The industry commits to hiring those who have completed courses
3. Facilitation of reduced price software partnership between technology providers and educational institutes

An advocate of purposeful and responsible design, Safir also understands the opportunity we have to close the digital skills gap by democratizing access to education. Learning how to learn is a skill. People should not build loyalty to a tool because something better is going to come along.

Tangible tips:

- Learn new skills - if a company isn't paying for courses - use YouTube or Motif.org
- Continuous personal and professional development - whether a user or an executive, we must all keep up to speed
- Look at adjacencies - look and learn from examples in other industries like automotive
- Mandate and movement - movement requires executive sponsorship: executives keep an open mind; users learn how to sell better processes up the chain
- Constantly rethink how to do things better - and how to ingrain them in processes
- Share experiences - do not consider everything as company IP. Some things do NOT matter. A customized tool built on top of a software should benefit all companies.

"The industry needs to build an ecosystem in which we all partner, and work hand-in-hand with the educational institutions and technology partners to find a solution to the digital skills gap. Internally, every organization right now has probably realized that it is important to build that internal skills set and those internal capabilities. But, the reality is there is a huge skill gap, and the talent pool is extremely shallow." Safir Bellali, Senior Director, Advanced Digital Creation, VF Corporation

For more information and to stream the 3D TECH Festival 2020:
www.motif.org/event/3d-tech-festival-2020

3D TECH Festival 2020 connected fashion companies with 3D solution providers:

Alvanon's integrated, collaborative partners demonstrate the very latest developments in digital technologies and advise on how companies can achieve their digital transformation.

Alvanon Body Platform is the central database of virtual bodies created by Alvanon. It is the starting point for your 3D journey.
www.abp.alvanon.com

Assyst offers integrated CAD and PLM solutions for efficient collection development in the world of fashion.
www.assyst.de

With Browzwear, brands and retailers around the world are connecting people and processes, reducing iterations and samples, and merchandising garments even before they are produced.
www.browzwear.com

Centric Software revolutionizes Fashion PLM with native, end-to-end 3D product design and development integration to multiple market-leading systems.
www.centricsoftware.com

CLO Virtual Fashion creates cutting-edge 3D garment visualization technologies that cultivate a more creative and sustainable landscape for apparel industries.
www.clo3d.com

FNX is a 3D render automation service for apparel brands that generates fast, brilliant digital images for product development and e-commerce.
www.fnx.tech

Gerber Technology provides innovative solutions to manufacturers in various industries including fashion, aerospace, transportation, furniture, packaging, wind energy and sign & graphics industries.
www.gerbertechnology.com

Optitex is a global software provider of integrated 2D-3D computer-aided design (CAD) solutions for fashion & apparel, automotive, upholstery and industrial fabrics.
www.optitex.com

Founded on the development of the world's first fully automated seamless glove knitting machine in 1962, SHIMA SEIKI would eventually invent the world's first WHOLEGARMENT knitting machine. which can produce a garment in one entire piece without sewing.
www.shimaseiki.com

Through their Scanatic™ for Fashion platform, TG3D Studio digitally transform companies' development workflows and business models from start to finish. Its solutions are effective for everyone – from independent fashion professionals to large enterprises.
www.tg3ds.com

About Alvanon

Alvanon is a fashion technology company, focused on the body and its application and implications in the apparel industry. It has developed a unique and innovative body data-driven approach, with a consumer-scanning element, to solving the challenges of sizing and fit inherent in the fashion industry.

Since 2001, it has dedicated itself to body shape data research and has gathered more than 1.5 million body scans in 30+ countries, most recently, in China, Colombia, Costa Rica and the US. Combined with its deep apparel knowledge, this has allowed Alvanon to develop thousands of fit standards for hundreds of brands globally.

www.alvanon.com

About MOTIF

MOTIF is the apparel knowledge hub that connects professionals around the world with the skills and industry expertise they need to transform their businesses, lives and careers. Launched in 2018 by parent company Alvanon, MOTIF tackles the industry need for evolving skill sets and continual learning.

Motif.org provides a unique online learning experience with education on important industry topics across the supply chain and training on fundamental, technical, business and creative skills. MOTIF is working with top industry practitioners from around the world to develop world-class courses, for fashion, apparel, footwear and accessories professionals and corporates, that can be accessed from anywhere, at any time.

www.motif.org