FASHION

The advent of Digital Twins in fashion

DI MICHELE FOSSI

24 MARZO 2021

Despite a certain delay compared to other sectors, Digital Twins technology is now about to light a fire for a revolution in the fashion industry, too. Hyphen – a Verona-based company leader in the digital transformation of fashion brands – explained to Vogue Italia why pairing real clothing with digital counterparts is so important

f   𝕏   𝓟

People have speculated about pairing real-world objects with digital counterparts, or "Digital Twins", for quite some time. Dealing with the difficulties of operating systems that are not within physical proximity, NASA and its Soviet rival ROSCOSMOS, as early as the '70's, pioneered the use of digital representations of spaceships and their components. But it's only in the last few years, as a consequence of the giant leaps made in the fields of machine intelligence and cloud connectivity, that Digital Twin technology took off in virtually every area of the economy. As a result, the digital world has been taken over by an army of digital duplicates of the most diverse objects and physical entities, from cars and oil turbines to entire cities, and even human hearts. Being fashion items, ultimately, objects –– with a degree of dream and desire imbued into them, but still objects–– it was only a matter of time before Digital Twins made an entrance into the fashion industry, as well.

What does the Digital Twin of a dress, a shirt, or a scarf look like?

"Nothing out of the ordinary, though quite revolutionary when it comes to changing the industry; it's a special kind of electronic document, situated at the confluence of the realms of visual and information, where a company can hold all the pertinent content about the fashion item, systematically", Stefano Righetti

explains. He is the CEO of Hyphen, a fast-growing Verona-based company specialized in Digital Transformation, collaborating with **Valentino**, Ferragamo, Versace, **Max Mara**, Diesel and other big players which prefer to remain undisclosed.
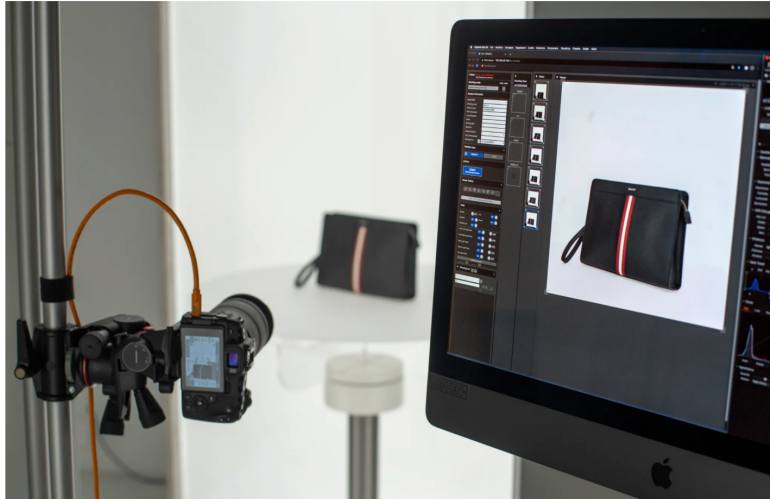
A common misconception about Digital Twins, Righetti warns, is to figure them as mere 3D simulations of fashion items. "Digital Twins may well include a 3D representation of the garment — the "avatar" proper — but that's merely one tiny fragment of the mountain of information such files can contain". The list is virtually endless: fabrics, textures, sizes, colours, prices, photos of advertising campaigns, fashion show photos, technical photos, how many samples exist in a particular warehouse or store, etc.

According to the Veronese entrepreneur, a particularly helpful type of knowledge often found in Digital Twins is "relationship links"–i.e., correlations between related items, such as a pair of sunglasses and its glasses case. "Imagine you are in a clothing store and want to know what colours would go best with the trousers you are trying on. The salesman can now consult the Digital Twin of the trousers in real-time and provide you with these suggestions."

The strength of Digital Twins lies in their centralized nature, which allows for unprecedented levels of uniformity and coherence of the information. As a single file saved in the brand's server, the Digital Twin eliminates at the source of the risk that different versions of a product's images and descriptions may coexist online. "Say good-bye to communication inconsistencies and incongruencies; photos, texts, and other information about a product will finally be consistent across all of the e-commerce websites, social media and your corporate website."

Righetti goes on explaining that Digital Twins allow such information to become not only beautifully structured and rationalized, but also more readily available to third parties, which results in an improved ability of a brand to broaden its presence online. "By automating the communication between the brand and online retailers, they make it possible, even for a smaller brand with limited work-forces, to collaborate with a larger number of platforms." Undoubtedly, a powerful asset in times of a pandemic, when physical stores are closed and competition to sell on multiple online retailers has reached a peak. "Let us not forget that any new collaboration with an e-retailer comes with extra administrative work. Especially for small businesses, this is currently one of the significant impediments to their capacity to extend their online reach". Furthermore, the centralized ease-of-accessibility of Digital Twins is opening up new possibilities for customization. "Marketing different editions of the same product in different markets can now be easily handled, with obvious competitive advantages".

One of the brands which pioneered the use of this technology, together with Max Mara and Diesel, is Bally. For its SS21 sales campaign, the Swiss brand inaugurated its Digital Twins-backed Digital Showroom, developed in collaboration with Hyphen. "Thanks to Digital Twins of our products, we customized the platform according to our needs, making our Virtual Showroom extremely intuitive and user friendly", says Nicolas Girotto, Bally's CEO. "Through this platform, buyers can now consult and view data sheets and interactive images of the products, managing the selection and pre-order phases and also access the Virtual Showroom independently, to review and evaluate other purchase options. In addition, we were able to harmoniously combine content, inspiration and video by effectively integrating the technical details of the product with the relational and emotional dimension between brand and buyer".

What about the costs of implementation of this technology? Hyphen guarantees that the efficiency gains that result from its implementation alone offset the investment. "Digital Twins can help a fashion label significantly reduce wastes and inefficiencies across the supply chain," says Marco Milioli, Hyphen's Chief Marketing Officer. "This technology is about to catalyze a sustainable revolution in the industry. An example? In the old days, one would ask a factory to manufacture several prototypes of the same bag model in different colors and materials. Today, one is sufficient; a computer can simulate the others. Or maybe not even one".

Companies that have implemented the practice of 3D-designing of clothes (i.e prototyping them on the computer, like a car or a design chair, instead of drawing them on paper) can choose to generate 3D-models of their products right at the inception of their life cycle, even before they get physically fabricated. "The existence of such early incarnations of their designs offers multiple advantages to the brand", Milioli says. "It allows for pre-sales of their collections and, by preempting the reaction of different markets, for a fine-tuning of the production and the store assemblies," Girotto confirms. "For the first time, we introduced prototypes of digital products in the Virtual Showroom before we sent them into production, which allowed us to improve our footprint throughout the entire product development process, saving us costs. While prioritizing sustainability, we are also using innovation to stimulate creativity in our design studio, where we are piloting 3D prototyping, which enables limitless variations, with no incremental cost."

The advent of Artificial Intelligence is likely to ignite a proliferation of Digital Twins in the next future. By analyzing a picture or a 3D-rendering of a fashion item, artificial brains can generate all sorts of tags and meta-data to insert in the corresponding Digital Twin, and even write pretty good descriptive texts about them, thus making it simpler and less expensive for fashion houses to digitize their collections. "But even more thrilling, is what happens when algorithms start "playing" with Digital Twins", Righetti says. "By analyzing these tags, neural networks can be deployed, for example, to suggest fashion looks. And even though we are at the dawn of this application, they are already showing, believe me, quite a cool sense of style".