THE DPC REPORT

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embodee

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2008

YEAR FOUNDED

Embodee provides the global Apparel Supply chain with digital solutions that increase efficiency and make our future more sustainable. The company's software has been in use for over 10 years by apparel leaders including Nike and Adidas, and brings critical capabilities to the industry's emerging digital creation pipelines.

Orchids by Embodee, the company's collaborative platform, improves engagement between supply and demand by coupling existing 3D data with rich capabilities to boost the productivity of interactions between designers, manufacturers and brands across the industry's ~$1 trillion supply chain.

Digitally created products are easy to share & publish even before they are made. Silos between departments and companies are removed and relevant employees are brought closer together, giving them real-time visibility to let them make direct contributions. Decision making across distance and time becomes faster, easier, and less error prone.

Proven benefits include fewer - or no - physical samples needed for customer acceptance. Ease of use, low adoption hurdles and rich capabilities including support for all major languages enable the next step in the global industry's drive to go digital.

Orchids lets organizations get more done, in less time, for example:

Ideate: Create and share digital canvas spaces.

Collect inspirations, sketches, photos, and any related files to showcase, share, and take input on ideas for your new collections.

Publish: Upload 3D products into Orchids to have them come alive online.

3D models developed by technical designers become accessible to anyone. Optimize them with the click of a button to publish them anywhere - B2B Sales, E-Commerce, Online Ads, Social Media, the Metaverse - or use the creation tools to design a cornucopia of design variants.

Create: Easily, Collaboratively, and Rapidly, Online.

The entire team anywhere can view, comment, and help evolve - all products in 3D - without specialized 3D expertise. Apparel Designers, Print Designers, Product Managers, Merchandisers, and Sales get new products to the customer faster and better. Buyers can interact in the same manner helping make decisions and speed product to market - without reliance on physical samples.

Embodee is headquartered in San Juan, with employees across the US and in Europe.

ORCHIDS BY EMBODEE IS USED WORLDWIDE , WITH THE FOLLOWING APPROXIMATE GLOBAL DISTRIBUTION:

- **20%** North America
- **15%** EMEA
- **15%** LATAM
- **50%** APAC

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PRICING MODEL:

Subscriptions to Orchids are priced based on usage. All plans have unlimited users. Usage is priced based on gigabytes plus number of users upgraded to PRO. Learn more about Orchids pricing here.

2+

DEEP TECHNOLOGY INTEGRATIONS:

SWATCHBOOK, 2020

BROWZWEAR, 2021

LEADING PLM SOLUTIONS (VIA WEBHOOKS/API)

10+

WORKS WITH:

ACCUMARK 3D
BLENDER
BROWZWEAR
CLO3D
MAYA
MODARIS
MODO
RHINO
ROMANS CAD
OPTITEX
and many more.

WHAT ROLE DO YOU SEE YOURSELF PLAYING IN THE 'DIGITAL PRODUCT CREATION' JOURNEY?

We remove the industry's bottleneck of relying only on the 3D technical designer to get new Products done. Instead, we enable teammates to collaborate effortlessly and help get new product variants done together - in 3D, online.

We make existing 3D solutions more cost-effective by opening up the digital product creation process to stakeholders regardless of their particular expertise, or location in the world.

We make teamwork more visual, enabling online brainstorming, annotation, and providing on-product feedback with suggested changes and comments.

We unlock latent potential for organizational efficiency by reducing the back and forth, enabling faster decision-making and faster time to market.

We greatly reduce maker's & buyer's dependency on physical samples. We help make the supply chain process more sustainable.

We make it easy to publish your 3D products online and have buyers engage with your products - anytime, anywhere.

CONTACT

orchids
by embodee

Scale 3D for Fashion, Online:
from Creation to Publishing

Learn more

IN CONVERSATION WITH ANDRÉ WOLPER

FOUNDER + CEO, EMBODEE

Digital product creation in fashion seems to have recently reached critical mass. There are more brands and retailers than ever either kicking off DPC / 3D strategies or trying to scale up the ones they already have. Why now?

Process change is hard for any organization. Most people agree that the pandemic provided a big boost to positive process change. Before the pandemic, most firms up and down the apparel supply chain had digitalization strategies in place, but overall the supply chain's progress was very uneven, as the transition requires resources and evolution in skill base. Technical advancements rarely proceed smoothly because the change affects not only process, but also requires behavioral adaptation. We are nearing a tipping point - which we won't recognize until it has happened to us - but my conversation with other CEOs in the DPC space usually provide confirmation that the industry's move to 3D centered DPC is really underway now.

There's also a generational factor that impacts the uptake of 3D-based DPC. For example, 20-30 years ago, architects still worked with pencil and paper, not because CAD wasn't around, but because that generation of Architects was used to their ways, and often reluctant to make the change mid-career. Today, you'd be hard pressed to find a drafting table at an Architecture firm.

Other industries have made the change to 3D-based virtualization already, but in apparel, the relatively low cost of the "prototype" - compared to, say, an automotive part or a piece of machine tooling - gave apparel companies the luxury to just get another sample made. But that old way of doing things has run its course because there are bigger cost drivers than just the cost of a product sample.

The pandemic's impact was very hard on the apparel supply chain. Not only because workers needed to be protected, but also because consumer demand for clothing dropped precipitously, rendering vast inventories in the

pipeline unsellable. Working fully digital became an overnight necessity. However, unlike in other industries, working with 3D is key because the supply chain's decision making processes are so visual - and traditionally dependent on having a physical product for every iteration. Suppliers and brands that had already made progress were in a better position to pivot, but we see that virtually everyone in the supply chain increased their efforts toward the utilization of 3D as a result of the pandemic.

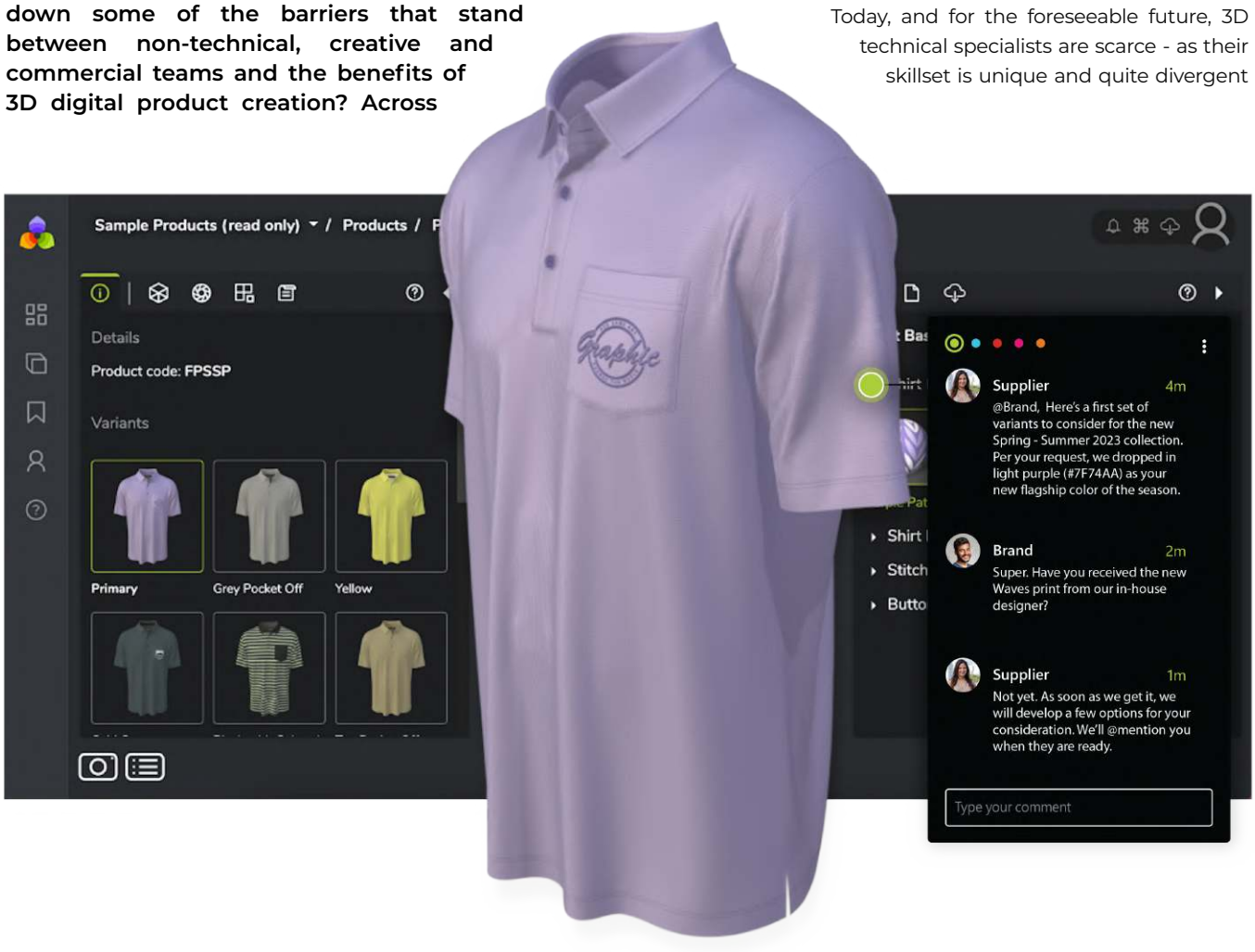
Even without the pandemic, competition in the apparel supply chain is brutal. Conception to finished delivery is very slow due to a very high need for coordination within - and among - the globally distributed supply chain members. And production processes are unfortunately still very harmful to the environment. Shipping times are long and inventory is seldom fully consumed, leading to legendary write-offs and huge, recurring waste. Time, resource, and efficiency pressures are so high in the supply chain that those who learn to leverage the latest technologies will pull ahead. So we can expect that what has already happened in other industries will happen for apparel, too – making state-of-the art DPC the backbone of the supply chain. It is not a question of if - just when. Suppliers and brands realize that they need to be a leader, or at least a fast follower - or else they run a large risk of obsolescence. So the realization among many is that it is better to get serious about fully digital workflows and risk some up-front investment rather than risk the whole business!

Why do you think it's so important to break down some of the barriers that stand between non-technical, creative and commercial teams and the benefits of 3D digital product creation? Across merchandising and marketing management, there's a strong argument for taking DPC away from that small pool of experts who currently hold the keys to it and extending the benefits everywhere. Why do you think that is, and why is that so important?

There's a big need in the supply chain, and within individual businesses within that chain, to get the less-technical and commercial teams more connected to the product development teams. All the various skills - business and product - need to converge for great products to emerge efficiently. And, as with everything, product development itself has sub-specialties, and stages. Timely, up-to-date information flow and improved transparency - including for visual information - enables the traditionally serial processes to become more efficient; with everyone having easy access to up-to-date information, teams can coalesce, produce, and then disband rapidly to move on to the next task.

Because apparel is highly visual, 3D holds the key. It isn't always possible to get all business and technical players around a physical table to see physical samples. And while 3D in apparel has really matured in recent years, it has still been confined to those specialists who have the right software on their PCs. 3D requires considerable skill and specialized software to create a quality that enables decision making; that has traditionally kept 3D off the desks of the people that need to contribute to guide the outcomes. Solving this is something we've been very focused on.

Today, and for the foreseeable future, 3D technical specialists are scarce - as their skillset is unique and quite divergent



from the classic skill sets within apparel businesses. Businesses have the classic designers focused on materials, silhouettes, and feeling; 2D technical people focused on pattern making and also color, embellishments, prints, and graphics. Those folks think of 3D as difficult to use - and they are right, it has been difficult to use. But we are changing that. We are now able to let the designer and the 2D players converge with the 3D specialists. We enable them to open up their silos and join into an online space designed for DPC. Being online is especially powerful because of how international and distributed our industry is.

The time is ripe for a platform to unite companies and their team members across the DPC chain. Various tools exist (Illustrator and Photoshop for 2D, 3D-enabled pattern making software and silhouette simulators etc.) but each of them works in a physical place, without the means to interact, share, communicate around the emerging product. Video conferencing helps but timezone and product data access problems still remain. A common platform - with cost-effective access for all who need to be a part of the process - whether for 8 minutes a week or 8 hours a day. Everybody needs to be able to see the current design in its latest iteration, engage in the conversation, help make decisions and provide input. This applies not only to the aforementioned players, but also to merchandising and sales - not technical trades, but just as critical to market success. This is, to answer your question, the reason why it is so important.

How is the link between brand and manufacturer being redefined in digital native workflows? When you start to give more people access to 3D and you start to open up things like product variations and configurations, you start to open up these kinds of possibilities. How does that change the way that the brand interacts with their manufacturer? How do you maintain the confidence that with all the tweaks and configurations you're making, the product is producible?

Brands and manufacturers are very co-dependent in their relationship. Brands hold the key to the market; manufacturers to the supply. Some brands have pushed ahead aggressively in their adoption of 3D, but the majority are still finding their way. Some brands do not yet trust 3D as being a proxy of sufficient quality to lower the requirements for samples. The manufacturing leaders want to replace samples with 3D, but, in the end, the brands are the buyers and their workers often don't have the ability - or power - to make decisions that affect the proven (archaic) process. The individual professionals are bound up in that process. The pandemic brought this issue to a boil, for some. It led to proven cases where leading brands and suppliers realized that 3D, combined with an online platform like Orchids3D.com, enables much more rapid review and approval workflows. And this is very powerful for both parties. It saves lots of time, saves money, is less error prone, and makes 3D easier to use, with low-to-no training requirements for the majority of participants. And, equally important, it's good for the planet!

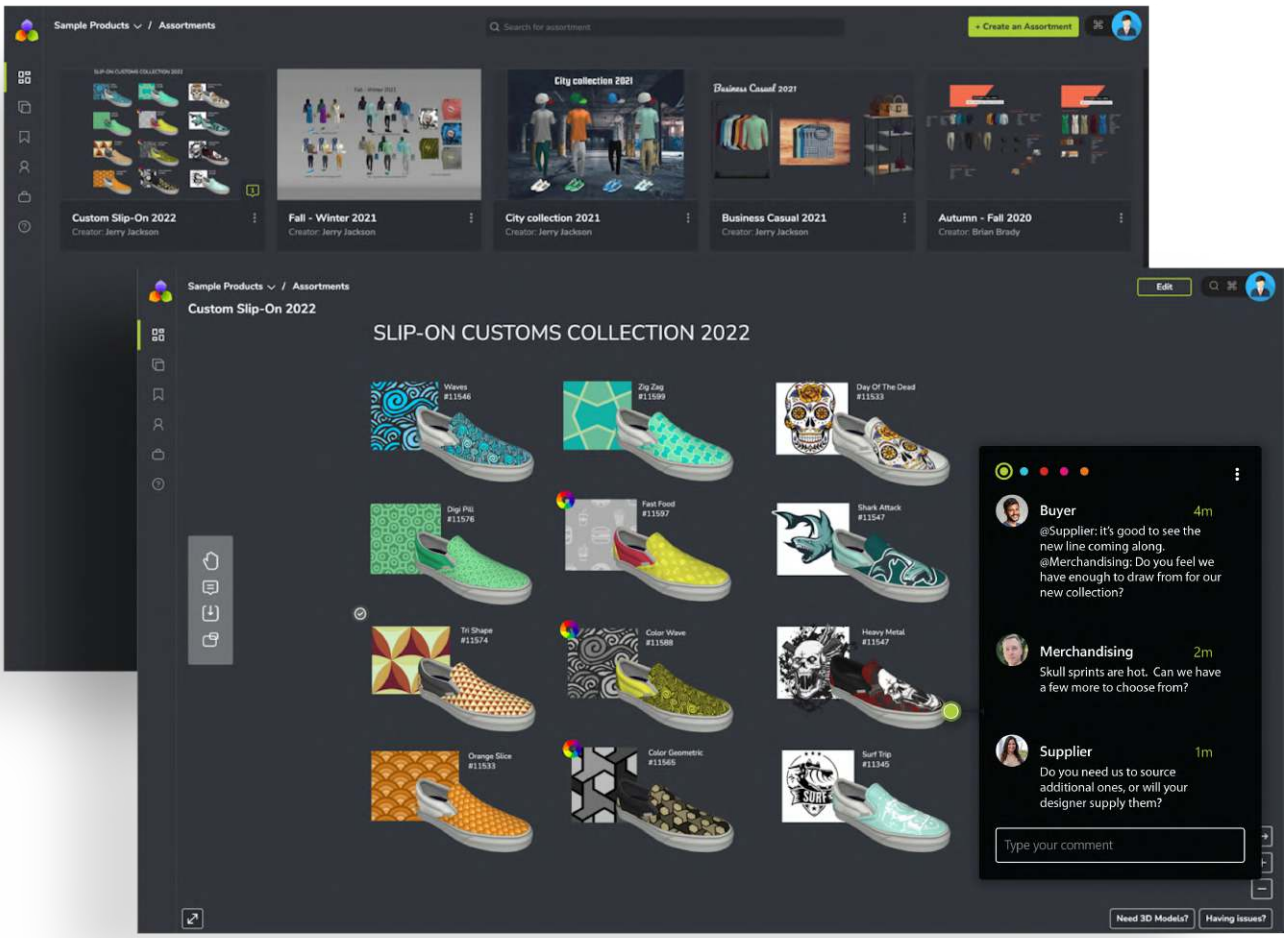
So the way brands and suppliers interact is in the midst of change. Leading companies are already recognizing this and acting on it. Our platform (Orchids by Embodee) enables these improvements to scale - between a supplier and a brand - and from there across the value chain. The proof points for this exist and are very convincing. The missing ingredient is awareness and education. Once a brand sees the power of being presented and communicated within 3D via a web platform such as Orchids, they want to see it done that way for them by their other suppliers. It is already happening, and will catch on because the productivity and efficiency benefits are large and proven. Once awareness of this builds to a critical mass the tipping point will occur.

> "THE TIME IS RIPE FOR A PLATFORM TO UNITE COMPANIES AND THEIR TEAM MEMBERS ACROSS THE DPC CHAIN."

What makes the Orchids platform different from other approaches to product configuration? There's a much bigger possibility space and maybe some extra complexity that opens up when configuration becomes more tightly integrated into: consumer engagement, value chain collaboration, the buying relationship you've mentioned. What sets Orchids apart from what other people may have experienced around product configuration so far?

Let's think about that question in two parts.

Firstly, 3D for standard (i.e. In-line products.) Using 3D product models at points of sale makes buying decisions easier for the consumer, because the product in question can be looked at more closely, and more interactively. Once the majority of products are generated in quality 3D during DPC, this use case will become commonplace, because the digital asset becomes available at zero incremental cost.



Secondly, there is a long-standing niche of buyer facing configurators for on-demand, i.e. custom made products. Today, this is a small fraction of the whole apparel market, but often a high value one because on-demand production doesn't have inventory issues. Selling custom also creates deeper brand engagement with buyers, which brands with a strategic outlook like to build.

Why? Because the custom product buyer gets the exact product they want, identifies with it more deeply (because they helped create it), and relishes in owning a 'one-of-a-kind'. Meanwhile, the seller does not need to carry finished goods inventory. In the eighties, Michael Dell revolutionized the PC market this way, by only carrying raw goods inventory. Apparel requires better visualization than PCs do to make the same economic model work, but 3D DPC enables that, as a side-effect, for free. A growing share of on-demand apparel in the industry will not only enable custom products. In combination with smaller, near market production batches, it will also enable retail to keep less products in DCs, and to react more nimbly to changes in demand (due to trends etc). Taken together, the move to digital also enables a more sustainable apparel supply chain (less inventory built and wasted). Buyer-facing configuration is something that will come very easily to all brands once they implement the right DPC platforms and strategies.

I am very confident in this statement because on-demand custom product enablement is something we've been doing for over a decade. Some of the world's leading apparel companies are our customers. During this time, we have continuously reinvested in building the transformative platform that is now available at Orchids3D.com. The technology we originally built for custom product enablement has evolved to supplement existing inline product creation development cycles.

You can think of Orchids being a lot like Google's Workspace (formerly G Suite). It augments a company's existing 3D process to make it more powerful, and pay bigger dividends. There are no more files being sent around, and no more issues trying to find the latest version of something. You've got one live version, accessible to everyone in the process - anybody, anywhere, on any device - with no training. From your desk or from your armchair.

That is a revolution, because it makes everything faster, better, and cheaper - and it finally allows digitalization to happen at scale as it brings a greater share of the human resource element to bear on the problem. This is our central mission: to enable 3D to scale within the apparel industry so that it can become more sustainable.

product creation, it's going to be essential for brands and their partners to be able to collectively manage and access digital assets. What do you see as the key capabilities when it comes to a Digital Asset Management System?

Basic DAMs (Digital Asset Management Systems) have been around for quite a while. Traditionally, they are a repository for digital assets, and enable easy retrieval. By itself, a DAM typically won't display 3D data for you, nor allow you to work on the product. Many companies use them - usually as the repository for the data that's kept in support of classic business processes.

The problem with standalone DAMs, cloud-based or file-based, is that when you store your critical business process data (files) in a DAM, you're not able to see - or collaborate - around the data directly. This is especially true when we're talking about apparel, because it is about renders, aesthetics, shapes, colors, materials, and so on. You have to be able to see the elements and you can't. You want to make an edit and you can't. That's because 3D is relatively immature, and standalone DAMs do not allow viewing or collaboration, nor do they have built-in apps that allow you to edit your (3D) data.

However, in the more recent past, while 3D support in browsers has become quite powerful, they do need 3D files to be optimized in order to take them in. Unfortunately, typical desktop DPC software does not produce browser-friendly files. So, you've got to get the 3D models optimized to run well in the browser. If a web platform does that, browsers are at a level of maturity to provide a fast, interactive, and fast-loading experience - so the user experience can be very good. Heck, Google Earth and Google Maps - both web applications - now allow browsing of the whole globe in 3D! That's because the size of 3D models and their associated data can be made manageable in ways that allow them to be loaded into browsers, and to render them - provided they've been developed well, and provided they can be exported in a good way.

If you look at our Orchids platform, most people are blown away by the depth of the service's capability. Orchids is not your typical web page experience - it is deep, and more akin to a powerful desktop application. But it is also very easy to use - a web page based, "what you see is what you get", drag and drop experience - all via the internet. Anyone can instantly become a part of it. So it is massively different from file-based, single user desktop based applications. Because the web platform is not only universally accessible by all who need access - but it also very naturally a communication medium. Any given user can immerse in the product and can simultaneously communicate with others on the same version in a visual way. And invite others to come see, look, comment, and generally participate.

This is a breakthrough and it's made possible by fundamental developments that are more broadly the progress of the internet - we just leverage them in smart ways, combine them with our experience from over a decade of work, and make a revolution in DPC - and beyond - possible.

Where do you see digital product creation, and the need for digital / 3D assets, going from here? What does the near future look like for fashion and for Embodee as a whole?

We see a fairly linear progression of adoption, until the tipping point is reached. The pandemic was a forcing function, and there will be more. Those who put in their homework now will be in a better position and be resilient when that happens. Our work aims to help prepare for this future, and for companies to improve their DPC processes - bringing a lower cost, friendlier, more inclusive, more productive, and more sustainable process for all. It will also help accelerate the adoption of existing 3D tools from well known vendors, making 3D data more mature and more accessible.

Taken together, this is increasing the speed of the DPC flywheel, until we go beyond the point of critical mass, and into a better future for all.