PLM REPORT 2023

SPONSORED BY SOURCING at MAGIC

WRITTEN BY The INTERLINE

WELCOME

By BEN HANSON,

Editor-in-Chief of The Interline

Welcome to the 2023 PLM Report - the latest in the longest-running (and only) annual benchmark of the product lifecycle management market for fashion.

Just as readers of these reports have done for the last thirteen years, you'll find a lot packed into these pages.

A not-coincidental thirteen editorials, providing thought leadership, guidance, and education on everything from generative AI and pricing strategies, to digital product creation and future-proof approaches to software deployment and cultural change.

A buyer's guide to the PLM market, with a focus on solutions that specialise in fashion and retail. From annualised sales figures and technology partnerships, to user counts, implementation timelines, and executive interviews, each of these profiles captures all the essential information anyone would need to make an informed decision about what solutions to shortlist, and about which vendors' values best match their own.

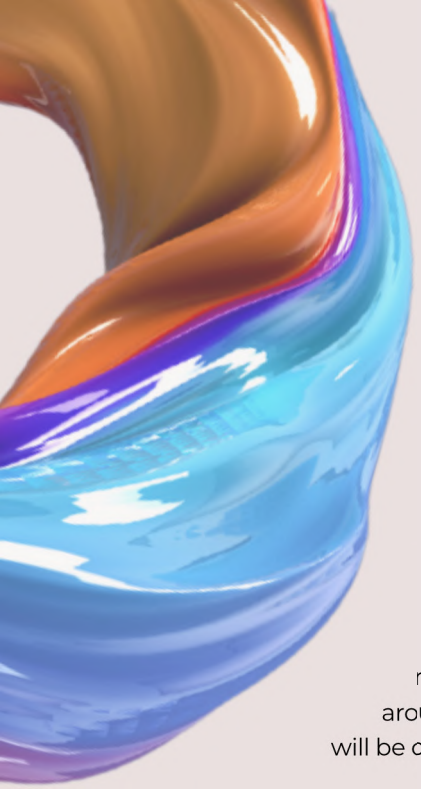
The definitive analysis of the PLM for fashion, tracking sales, revenue, market tiers, geographical adoption, and more - and using these datapoints to model market sizing and to chart the evolution of PLM for fashion over the last twelve months.

Taken together, these three parts make up a complete picture of not just what PLM for fashion looks like or how one platform is different from another, but what PLM actually means for brands, retailers, makers and more - across apparel, footwear and accessories.

When The Interline team sat down to plan and produce this year's report, that question of meaning kept coming back to us.

As an industry, and as analysts, our tendency is to treat technology in a very discrete way. We look at solutions - defined by their names or acronyms - as blocks, and attempt to arrange them to make up a complete and stable digital structure. That is, at its core, the essence of digital transformation: swapping out analogue blocks for digital ones, piece by piece, without toppling the tower.

But that way of thinking only makes sense if those pieces stay the same shape. And from all the data we gathered this year - as well as from the whole-ecosystem perspective that The Interline takes - it's become clearer than ever that PLM, and what PLM means to different people, is changing.



This is natural because the product lifecycle itself is changing faster than ever. Ask any fashion executive, any head of department, any individual designer or material developer, if they work the same way today as they did years ago... the answer will be no. And crucially, how each of those roles - and the businesses around them - have changed will be completely unique.

Should PLM mean the same thing to all of them, when every product lifecycle, every set of needs, and every day-to-day digital workflow is different?

I don't think so.

And the technology industry doesn't seem to think so either. Which is why we're seeing so many different approaches to redefining where PLM starts, where it ends, and how it integrates with other solutions and ecosystems such as planning, pricing, digital product creation, eCommerce and much, much more.

None of this means that PLM is not fit for purpose. Far from it. The PLM solutions you'll find listed in this report are better than they've ever been: more capable, more modular, more affordable, more flexible, and more mature. And many of them have been road-tested and refined in partnership with some of the world's biggest brands and retailers for decades.

The important point is that that road-testing is now entering a new phase - one that will redefine the scope and the shape of PLM as it progresses. Because this, after all, is what distinguishes software from hardware; one has a fixed form and function, while the other can alter its shape to better fit the future.

I spend a bit more time unpicking why, and how, fashion's demands for PLM (and vendors' ambitions for it) are changing in a piece of editorial on page 64. But I also want to revisit something I said in the introduction to last year's PLM Report:

"As more and more extended solutions – across everything from digital product creation to supply chain transparency – start to hinge on having access to centralised product data, PLM has a lot of distance left to run."

As this year's strong sales figures and diverse PLM customer base demonstrate, that's still true. But it's also highly likely that PLM won't be running that distance in exactly the same form it's had for the last thirteen years. It will shifting, reforming, and extending itself to remain the beating heart of design and development, and the core of enterprise technology integration.

So it follows that these reports will change, too. And in 2024 you'll see something different from The Interline that reflects the changing nature of modern PLM - to join our stable of deep-dive reports on Digital Product Creation and, introducing later this summer, Sustainability & Supply Chain Transparency.

For now, we're extremely proud to let this unique picture stand as yet another testament to how vital a foundation PLM has been to fashion's evolution over the last decade-plus, as a guidebook for how the evolution I've been talking about is already taking place (if you know where to look), and as an indicator of just how important PLM will continue to be as a central but ever-evolving piece of fashion's future.

INTRODUCTION

By KELLY HELFMAN,

President, Informa Markets Fashion

For decades, PLM (Product Lifecycle Management) has been one of the key engines transforming the way the industry thinks about products, data, process innovation, supply chain connectivity and collaboration. In that timeframe, what it means to design, develop, source and make fashion has changed, for brands, retailers and makers of all styles. PLM is critical to keep up with the digital transformation of fashion as an industry.

PLM streamlines how fashion conducts business. As a key technology foundation, the lifecycle management of products transforms the sector to a forward-thinking mindset, as the most digitally enabled and connected industries out there.

From sourcing relationships to design and development, Informa Markets Fashion can testify brands, retailers and producers place higher emphasis on integrating technology planning practices each year. Last year, there was a significant rise in brands and suppliers demanding a wider array of technologies and services– such as production tools and logistics, creative design suites, supply chain transparency and digital product creation.

We directly observe how core business is expanding its digital toolsets more quickly than ever before, creating an even stronger case for companies to have a central unified hub that connects different solutions and processes to one single source of product data.

As a trusted resource for the fashion community, we strive to provide the most comprehensive education, information and resources to share with our audiences through strategic partnerships and on-site or online seminars, including The Interline.

Technology drives us all forward creating faster more efficient ways of business, from conceptualization to point of sale. Now more than ever, every part of the fashion industry has a technological touchpoint and by extension, interaction with Product Lifecycle.

Newer priorities like generative AI and radical sustainability, has an impact on what the future of fashion will be, such as meeting order quantity and customer demand, balancing e-commerce and retail needs and much more - technology alongside our world is continually evolving.

We must stay current on the boundless innovations that create these opportunities. We are proud to partner with The Interline – the leader in data fueling our industry, to bring you the 2023 PLM Report and upcoming 2023 DPC Report, as well as a two-part series on Fashion Technology Fundamentals releasing soon.

Informa Markets Fashion is committed to hosting the central space and the platform which supports the world's largest fashion audiences- our fashion communities.

The Interline and Informa Markets Fashion will continue to collaborate to bring fashion technology to life throughout 2023.

SOURCING at MAGIC The INTERLINE

CONTENTS

CONTROLLING RISK & MANAGING DISRUPTION WITH A PLM-ENABLED DIGITAL VALUE CHAIN

WITH RISK AND UNCERTAINTY PERSISTING FAR BEYOND THE PANDEMIC, FASHION'S TRADITIONAL SUPPLY CHAIN STRUCTURES ARE PROVING ILL-SUITED TO OVERCOMING DISRUPTION. THE SOLUTION LIES IN REPLACING AS MANY ANALOGUE LINKS AS POSSIBLE TO CREATE A NEW, ALL-DIGITAL VALUE CHAIN.

MARK HARROP
CEO & FOUNDER
WHICHPLM ADVISORY

As a technology advisor to the fashion industry, Mark has worked for more than four decades to help the world's best known retailers, brands and manufacturers achieve efficiency savings across their entire supply chain through informed technology investments.

Over the last several years, the Fashion & Textile industry has continued to find itself challenged with supply chain disruptions – not only at its Tier 1 factories but also including shortages from further up into Tier 2 ,3, 4 raw materials. We continue to experience supply-chain lockdowns in China, the continuing war in Ukraine, global trade embargos, increased energy costs and related trade disputes that add enormous pressures on the structural weaknesses of our traditional analogue supply chains. These challenges highlight the reality of the Fashion & Textile industries' reliance on outdated and, in the main, disconnected and siloed analogue supply chains.

Recently, China has announced a complete relaxation of its Zero-Covid tolerance, and the number of COVID cases in China has risen significantly, resulting in the Chinese authorities having to consider new control measures. The new wave of Covid cases will bring further pressure on China's fashion supply chains, with other disruptions before it can upscale its vaccination program and get back to its normal levels of efficiency. However, this may not happen until mid or even autumn 2023!

Since the early 1980s, most fashion brands have been chasing low-cost production around the globe, moving from region to region in pursuit of lower-cost resources, which in the main has been cost-effective, based upon high volume production runs. These drivers have put constant pressure on resources of all types, not only materials but also labour, and it's fair to say that this approach has led to some levels of distrust on all sides. It has also created islands of information,

costing secrecy, including multiple versions of a product's costs, poor performance and inefficiencies from outdated technology suppliers, and poor labour expertise and efficiency.

Lower-quality materials, trimmings, components and processing result in inferior-quality products. Then there's the question of the fragmented, siloed data formats and mistrust between parties competing against each other rather than working together to resolve design and processing challenges. These are just a tiny sample of the realities of what's happening with fashion's traditional supply chain model.

A NEW PARADIGM BASED ON DIGITAL CONNECTIVITY HAS ALREADY STARTED

More recently, we continue to see a shift away from large volume to low volume, less complex styles.

Added to these changes are additional demands related to sustainability within the supply chain impacted by a continuous stream of new sustainability and environmental legislation. New legislation is forcing brands to deliver against its scope 1, 2 and 3 requirements which relate to the carbon emissions a company creates during its internal operations and across its wider value chain.

Fashion & Textile businesses that adhere to traditional analogue supply chain practices will continue to find themselves at greater risk of being blindsided by disruptions. Unless fashion changes its model, it will damage its ability to supply products to meet sales demands, damaging its reputation. We continue to read reports of brands impacted by supply chain disruptions (stockouts, late deliveries), making them vulnerable to shareholder concerns, harmful stock market noise or worse. Brands have reacted too late to recover their losses, and we can expect more of these cases during 2023. It takes years to transform from traditional analogue supply chains to digital value chains!

Leading brands urgently need to rethink their traditional supply chains to put themselves in an advanced position to respond quickly to market challenges, including what is happening in China today.

The Fashion & Textiles industry needs to rethink its supply chain model and change how it works with its global partners. It's time to share modern technology platform ecosystems, Collection & Merchandising Planning, PLM solutions, 3D-DPC, and ERP, to name a few. With changing order sizes, shorter cycle times, sustainability measures, and style complexities, the analogue supply chain will not be able to deliver! Fashion and Textiles must advance the model to a data-driven, fully collaborative digital value chain.

The Fashion & Textiles industry needs to transform itself quickly and maximise its digital reach. Brands need to share their technologies with their partners; they need to get away from the mindset of sharing cost money and share technologies and processes that help save money! They can even go further by designing Open APIs (application program interfaces) so that all relevant parties can work together, sharing data regardless of their preferred solution types and choices.

TRANSFORMING BEYOND TIERS 1 & 2, TO INCLUDE TIERS 3 & 4

As an industry, our focus has primarily been on partnering with Tier 1 Manufacturers (loosely partnered, that is!), and at best leading brands have partnered with T1 and T2 suppliers bringing material design and development into the supply-chain mix. The reality is that it's still totally ineffective. It's time to re-evaluate the fashion industry's approach to its partner ecosystems. We must go further upstream into the value chain and deeper into supply chain data. We need to go further than ever before and understand what's happening from the farms and chemical plants.

We must educate designers and developers on how their choices regarding raw materials, colour, and material manufacturing process options relate to the environment.

Sustainability should not start and end with materials (which is what happens today!); we need to consider what goes into making materials, trims, components, packaging, and manufacturing products. We need to consider wastage; we need our sourcing and logistics teams to manage the end-to-end process sustainably and go beyond the new scope 1,2 and 3 regulatory requirements. These changes will necessitate joint partnerships based upon trust and collaboration, starting from Tier 4 partners, going all the way up to Tier 1, completely rethinking and transforming the way processes and data are shared and managed throughout the digital value chain. Track & Trace is another requirement for brands. Without these new partnerships driven by trusted data sources, the likelihood of delivering on TracK & Trace will be highly challenging!

TIERS 1-4: VALUE-CHAIN PARTNER MODEL

Brands (Tier 0):

These are the companies that design and market the clothing and accessories that consumers purchase. They may also have their retail stores or sell their products through department stores, online retailers, and other outlets. Examples of brands/retailers include Nike, Adidas, Puma, Ralph Lauren, Burberry, Zara, and M&S.

Factories (Tier 1):

These are the companies that manufacture the clothing and accessories for the brands. They are typically located in developing countries and may produce products for multiple brands simultaneously. Factories are responsible for sourcing materials, spreading, cutting, sewing garments, and packaging the finished products for shipment.

Mills (Tier 2):

They produce the raw materials used in clothing and accessories, such as fabric, yarn, and threads.

Trims & Components (Tier 3):

These companies produce more minor trimmings and components, such as buttons, zippers, labels, packaging, and elastics.

Farmers or Chemical Plants (Tier 4):

These businesses produce raw materials for clothing and accessories, such as cotton, wool, and synthetic fibres. Farmers may grow the raw materials, while chemical plants develop synthetic fibres through chemical processes.

RISK MITIGATION, COLLABORATION, VISIBILITY & TRACEABILITY

Companies will not be able to reduce risks simply by dotting the I's and crossing the T's as part of their reporting. They will need to understand all the details from product design, materials & trims, processing methods, and purchase orders, ensuring that all the details are fully approved, up-to-date and included within a PLM technical specification. The fact is that most disruptions in the supply chain come from outside the brand's headquarters, and they don't often come from Tier 1 manufacturers. Brands must operate further upstream from Tier 2, 3 and T4 supplier partners. Keep in mind without the correct quality of trims, like buttons or labels. It's impossible to finish the garment! Also, let's not forget, or perhaps you don't know, that very few brands, regardless of the maturity of their technology stacks and systems, truly understand who their Tier 3 & T4 partners are...!

The Fashion & Textiles industry needs to connect and share Design, PLM, ERP, and other related technologies across all partners (operating both down and upstream). If not, it will continue to be difficult, in fact near impossible, to deliver on real-time collaboration leading to risk reductions.

We need to remember that the Fashion and Textiles supply chain is very complex and as already stated, most brands, at best, are collaborating only with their Tier 1 and T2 partners. Today Tier 3 and 4 partners are in the main managed by Tier 1 manufacturers, often leaving a 'blackhole' regarding real-time visibility of what and where trims and components come from, which is quite shocking but true!]

Suppose the Fashion & Textiles industry is to identify potential risks and collaborate dynamically across the value chain. In that case, it must roll out and share supporting technologies to enable real-time end-to-end visibility, which will help traceability from raw materials to finished products. It is an all-or-nothing approach if brands want to move to a shared lower-risk value chain.

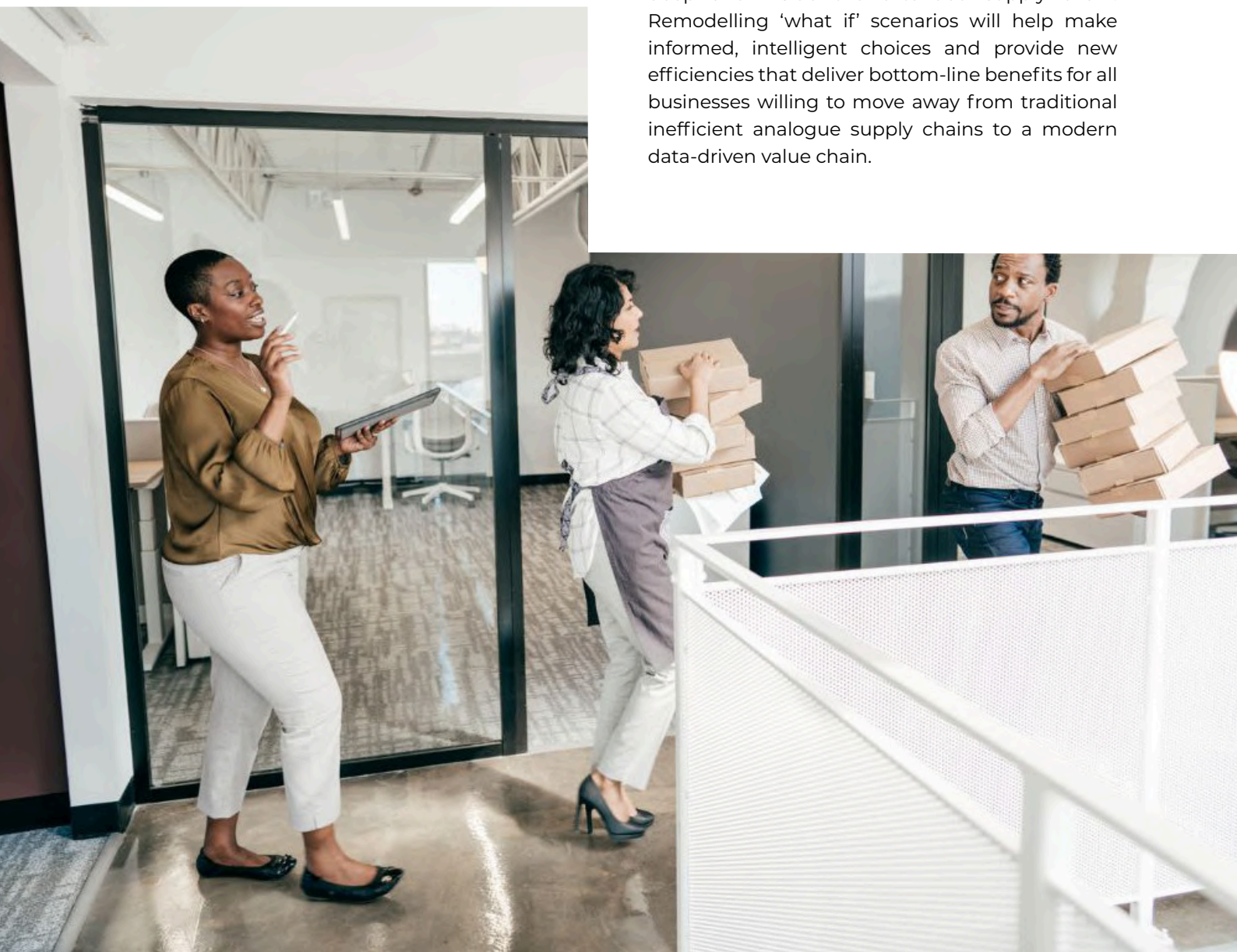
REMOVING NON-VALUE-ADDED TASKS, ANALYSING, AUTOMATING, AND REMODELING

Jointly working across a new digital model of related technologies, dynamically responding, learning, informing, and advising users on their choices related to best practices. The ultimate objective is to connect and streamline processes from brand to consumer across all T1-4 partners operating throughout the entire supply chain. We must create agility by removing non-value tasks (replicating administration and out-of-date reporting) and moving to a digital value-added model. Future collaborative value chains will utilise and greatly benefit from the increased use of Ai (artificial intelligence) and ML (machine learning), automatically creating product templates. AI will analyse real-time data flows operating across multiple shared technologies and ecosystems, reacting to the inputs and outputs (milestone gates, approvals, and disapproval notifications).

New value chains should include end-to-end real-time notifications (dynamic data views) and efficiency modelling, cost control to include raw materials and 'fair' labour, product traceability, environmental sustainability impact measurements, and value-chain risk mitigation.

MOVING FROM A TRADITIONAL ANALOGUE SUPPLY CHAIN TO A NEW DATA-DRIVEN VALUE CHAIN

The benefits of connecting T1 to T4 partners will provide real-time 'facts' that can be used to create a unique understanding of what's happening deep and inside the extended supply chain. Remodelling 'what if' scenarios will help make informed, intelligent choices and provide new efficiencies that deliver bottom-line benefits for all businesses willing to move away from traditional inefficient analogue supply chains to a modern data-driven value chain.



WHY COMBINING YOUR PLM WITH A PRICING SOLUTION WILL GET YOU AHEAD OF THE GAME

IN A COMPLEX, EVER-SHIFTING ECONOMIC CLIMATE, SUCCESS WILL DEPEND ON TAKING A MULTI-DIMENSIONAL APPROACH TO PRICING—ONE THAT INCORPORATES AND UNIFIES THE CAPABILITIES OF PRICING, PLANNING, AND PLM PLATFORMS.

JADE HUANG

VP

CENTRIC PRICING

Jade studied fashion design at Parsons School of Design, and has a Bachelor in International Trade from Fashion Institute of Technology. She holds a Master's in International Economics from Columbia University and an MBA from INSEAD where she was awarded the L'Oréal Scholarship for Creativity & Entrepreneurship Spirit. She is also a 2016 NYC Venture Fellow. Jade has spoken at The Financial Times Innovate America Forum, Monaco Symposium of Luxury, International Retail Summit in Switzerland, INSEAD, Harvard University, Cornell University, MIT, NYU and many more.

Everyone's fighting for a share of the consumer's wallet in a retail landscape that's more competitive and price-conscious than ever. Pricing products with the right balance between value and profitability has always been tricky, and customer retention and loyalty are at stake every time a brand launches new products. Two-thirds of millennials are willing to switch brands for a discount of 30% or more. Now that consumers are accustomed to instant price comparison online, pricing has to be executed with precision in order to achieve sell-through at full price and to avoid costly mistakes.

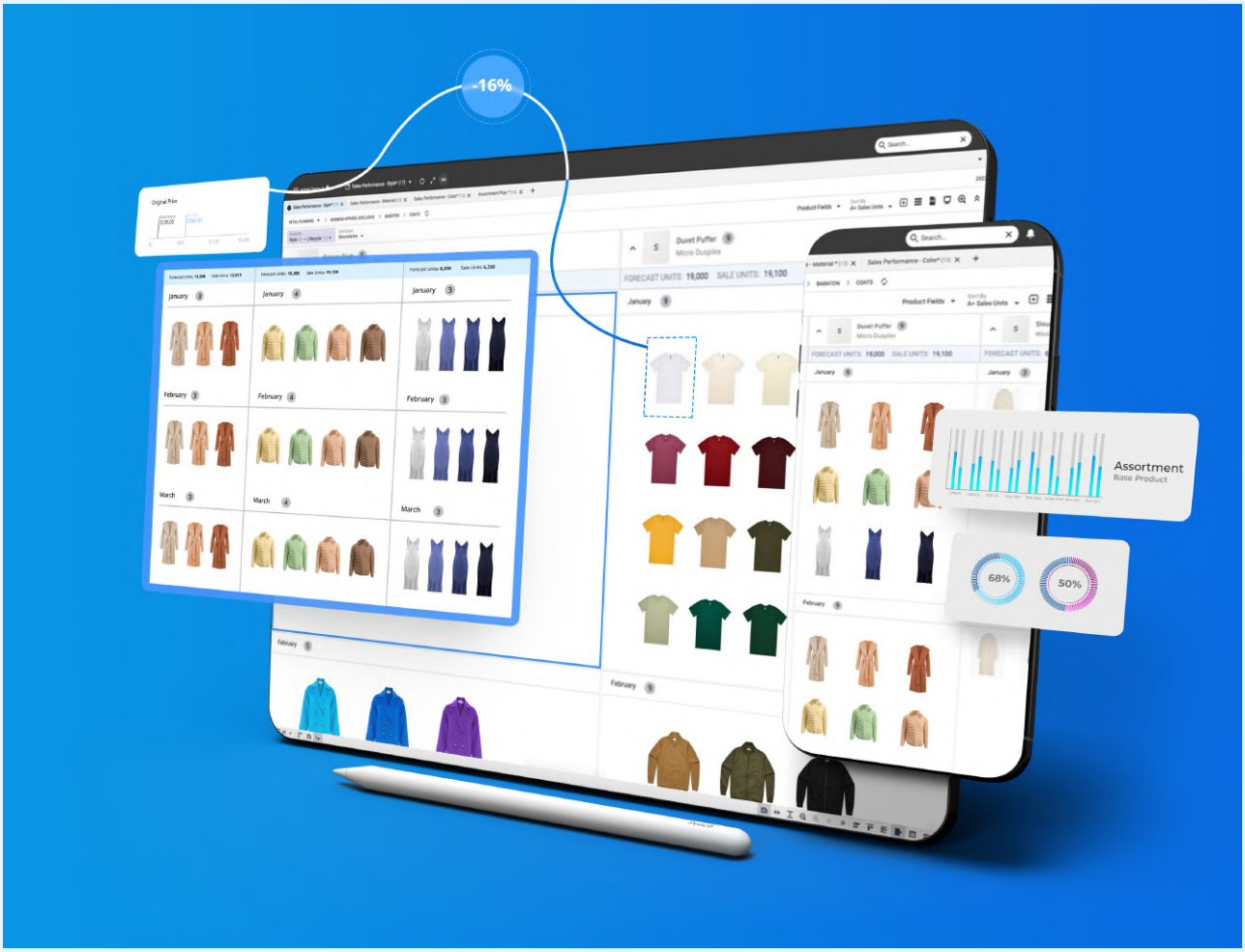
Let's explore some common pricing pitfalls, and how to get pricing on track.

PRICING IS INFLUENCED BY MANY DYNAMIC FACTORS

Pricing is multi-dimensional. The initial price has to be targeted correctly with cost and product margin goals in mind, but prices also have to be managed throughout the product lifecycle. Discounting to the right price to shift inventory while maintaining product margin is a particularly delicate balance. In the final stage selling window, it can become a matter of how low the price needs to be in order to move it off the 'shelf' as fast as possible. That's individual product pricing—but from a 10,000-foot view, the question becomes whether you are pricing your overall assortment correctly. This is where brand strategy and competitor analysis come into the picture.

Some brands focus solely on their direct competitors. However, others might aim to anchor the prices somewhere between less expensive brands and aspirational brands. Brands will also price differently in different markets—and gathering data on those local differences is crucial.

Pricing also depends on overall brand strategy and philosophy, whether that means providing great-value basics or offering trendy, attention-grabbing products at an affordable price. This ties into your target market: do your customers care more about quality materials or low prices? Are they prepared to pay more for sustainable options? These kinds of questions need to be answered to get a handle on assortment price ranges as well as individual product pricing.



Understanding your brand's position in relation to competitors and overall goals is crucial to developing an effective pricing strategy. Brands need to ask themselves where they are positioned from a price standpoint, and where they are providing the best value. Value can relate to consumer perception of the product itself, but it is also established in how you compare to your competition. Are you confidently sitting in a position where you want to be in relation to the competition, based on your brand strategy?

PRICING PITFALLS

Because pricing decisions are so complex and require so many different kinds of data from multiple sources, it's not surprising that things go awry. To name just a few of the most common pricing challenges:

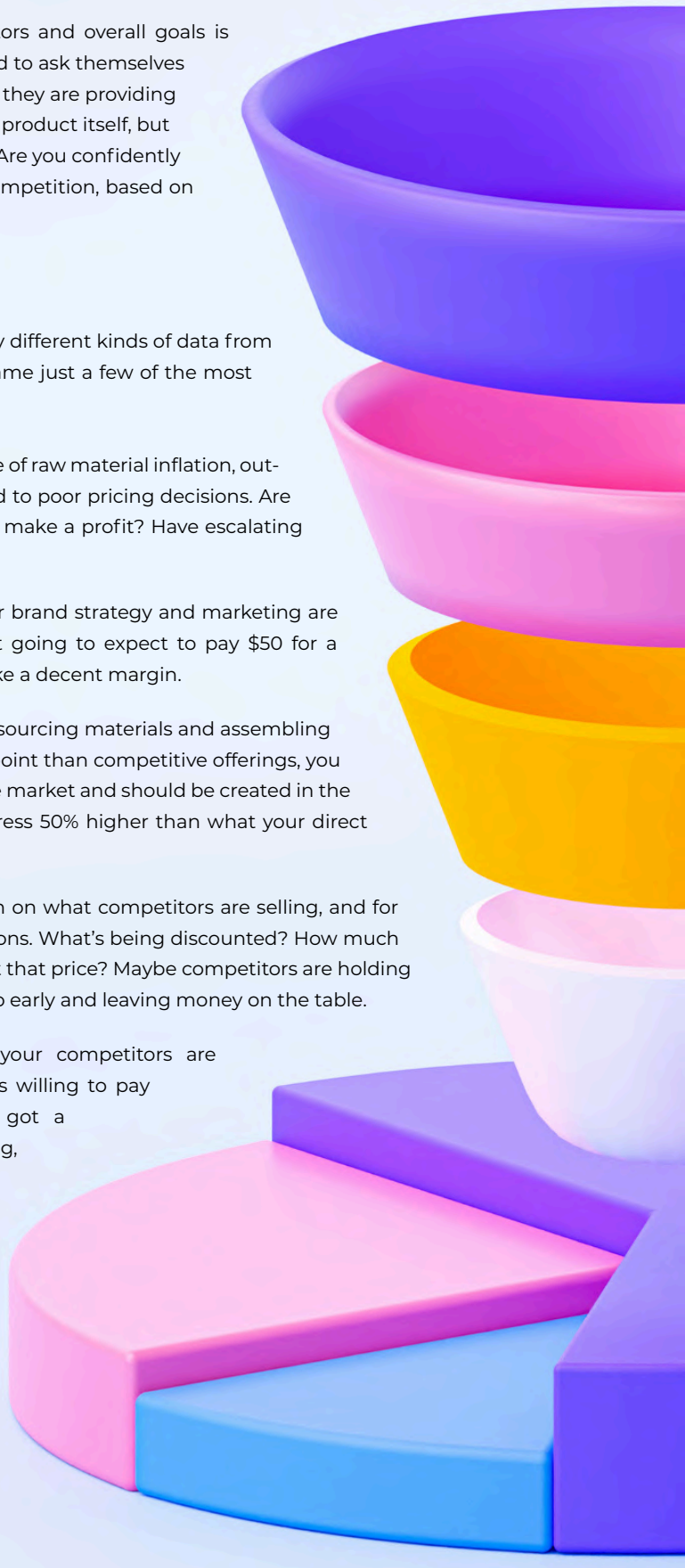
1. Cost of materials, assembly and shipping: In a time of raw material inflation, out-of-date costings or manufacturing estimates can lead to poor pricing decisions. Are your costings accurate and margins still sufficient to make a profit? Have escalating costs made a planned product nonviable?

2. Pricing is misaligned with brand strategy: If your brand strategy and marketing are based on best-value basics, your customers are not going to expect to pay $50 for a t-shirt—even if that's what you need to charge to make a decent margin.

3. Attention to competitive dynamics: If the cost of sourcing materials and assembling the product will put it at a significantly higher price point than competitive offerings, you need to question whether that product is viable in the market and should be created in the first place. Is there any point in launching a black dress 50% higher than what your direct competitor is able to offer with a similar garment?

4. Lack of competitive data: Up-to-date information on what competitors are selling, and for how much, are crucial to making good pricing decisions. What's being discounted? How much are they marking down, and are consumers buying at that price? Maybe competitors are holding the line on prices, and you're at risk of discounting too early and leaving money on the table.

5. Missed opportunities: Is there a trend that your competitors are responding to, but you missed? Are your customers willing to pay more for sustainable products—but you haven't got a product in development that fits the bill? Pricing, product development and merchandising are intertwined, and getting the right products to the right markets at the right time is critical to selling products at full price.



PRICING INTELLIGENCE AND COMPETITIVE BENCHMARKING ARE CRITICAL

Addressing these pricing challenges mostly boils down to one thing: access to accurate, up-to-date information that can inform better decisions. Whether it's data on trends, materials or competitor pricing, teams cannot price effectively without the right information and the tools to analyze and understand the dynamics at play. Competitive data is particularly crucial—but how do you get hold of it, and make sure it's still relevant?

Until relatively recently, in-person 'comp-shopping' was the only way to gather information on actual, in-store competitor pricing, what the collection looked like and what was on sale. Involving costly travel expenses and time-consuming shopping, 'undercover' photos, note-taking and phone calls back to the office, this process was far from streamlined and information was often out of date by the time it made it back to decision-makers. Even in the e-commerce era, brands continue to send employees out into competitors' stores to see what collections look like in real life. Meanwhile, team members who could have been doing something more useful spent countless hours copying and pasting pricing information from competitors' e-commerce stores into spreadsheets.

Thankfully, modern pricing solutions have made this process much easier. Scraping, compiling and analyzing thousands of data points from competitive online stores, these solutions replace tedious and time-consuming manual processes with automated, comprehensive pricing intelligence and competitive benchmarking.

STUDY YOUR COMPETITOR'S PLAYBOOK

Successful brands and retailers understand the importance of gathering and integrating competitors' pricing data into decision-making and collaboration across departments including merchandising, planning, pricing and e-commerce. Rather than falling prey to thinking that only their internal data matters, they understand that it's essential to see the bigger retail picture and particularly, insights into the competition.

They look beyond bestsellers to find out exactly what is selling throughout the industry. It's beneficial to be able to accurately identify emerging trends and industry-wide bestsellers, not only at the present moment but also rewinding to see historic wins and losses. They are also meticulous in procuring and ensuring their data is reliable and up to date. With so many external influences, now more than ever before, the retail market is in a constant state of flux and information becomes outdated fast.

Although a sports analogy might not seem immediately related to fashion pricing, a similar dynamic takes place with competitive businesses and sports teams. You wouldn't go into the Super Bowl playoffs without studying the playbook and plays of your opponent: their strengths and weaknesses, strategies and specific points of similarity and difference.

Brands and retailers need to treat pricing like a competitive sport. You can't compete unless you know exactly what you're up against—and that is a moving target, so the answer to that question changes all the time. It comes up over and over, all the way from pre-season to in-season and into the next season. In the middle of concepting, sourcing, merchandising and all the other facets of the product lifecycle, the question needs to be asked: what are our competitors doing as we're thinking about building and launching this product?

Every conversation about a product in development should have a competitive pricing component to it. Rather than having a regular strategy review where you deep dive into pricing, it should be a process of continuous improvement.

THINKING DIFFERENTLY ABOUT PRICING

Pricing a product shouldn't be seen as a static back-end process that happens once. It needs to be a continual process of data input and review that tracks alongside product development, all the way from concept to retail. There are many 'checkpoints' in a product lifecycle where, ideally, products should be checked and benchmarked against information on costs, overall assortment pricing and competitive dynamics to ensure that prices are still in the right ballpark and adjust accordingly.

During the planning and product development process, questions fly around about whether the product will be competitive, what the market wants, how to price in a way that makes sense for brand positioning while also taking into account cost, margin and other complexities.

These questions are often answered in the context of data from a planning or PLM solution, from other business systems or data researched and put together by hand from other sources. However, the real need is up-to-the-minute comprehensive, competitive pricing data to see whether pricing decisions that were made two months ago still make sense. Data on competitive discounting, for instance, can inform 'what-if' scenarios that project the impact of similar discounts on revenues.

Without a bridge between up-to-date pricing data, product data and planning, pricing decisions are made partially in the dark. There are many different points in the product lifecycle where competitive pricing information can be inserted for continuous improvement, all the way from pre-season to in-season.

There is no silver bullet that will tell you exactly how to price a product, but having accurate pricing information at all these different stages and continuously checking pricing will have a significant impact over time.

PRICING + PLM + PLANNING

So how do you make sure competitive information generated by pricing solutions is seen and interpreted in context throughout the product lifecycle to inform pricing decisions and adjustments? To achieve this, pricing intelligence needs to be seamlessly integrated with other systems such as PLM and planning.

Perhaps your company has already invested in PLM and/or retail planning solutions and is reaping the benefits of bringing products to market faster, improving sustainability and reducing material costs through more strategic sourcing. However, even by doing all of these things right, you can still miss the mark and end up with the right products sold at the wrong price, resulting in products sitting stagnant on your e-commerce site, on store shelves and in warehouses.

Revenue generation is a combination of costing + pricing + inventory optimization. It's having a better assortment to get the right product priced correctly at the right time for the right channel. Developing assortments and pricing strategy in a vacuum is a critical mistake no brand or retailer can afford to make in this era. Pricing is far more than a simple equation of costs and margins, and needs to be reviewed and adjusted throughout its lifecycle. By integrating pricing tools with PLM and planning solutions, as can be found in Centric Software's suite of solutions, you can leverage competitive data to get a more rounded and up-to-date picture of what competitors are doing and price products optimally.

DATA MANAGEMENT FOR FASHION COMPANIES: A GAME CHANGER

IN AN UNPREDICTABLE ECONOMIC CLIMATE, FASHION MUST LEARN TO BE PROACTIVE AT THE SAME TIME AS BUILDING THE DATA FOUNDATIONS THAT ALLOW IT TO REACT IN RECORD TIME. THIS MEANS WORKING FROM DYNAMIC, LIVE DATA - NOT STATIC SPREADSHEETS. HOW CAN WE GET THERE?

MICHAEL S. ROBINSON

CO-FOUNDER & PRINCIPAL
MANNER SOLUTIONS

Prior to founding Manner, Michael held executive-level positions in strategic planning and change management at leading marketing communications agencies and as an independent consultant. His expertise is in problem solving, process and protocol, and decreasing internal inefficiencies to improve the bottom line. He has worked with Ralph Lauren, Tory Burch, Calvin Klein, Michael Kors, Figue, Bottega Veneta, Versace and Madewell.

SOPHIA M. SCHILLACE

SENIOR MANAGER
MANNER SOLUTIONS

Sophia Madeira Schillace is the Senior Design & Marketing Operations Manager at Manner Solutions. With experience in Marketing, Sales and Product Development, she specializes in initiating change in organizational processes to promote interdepartmental efficiency, transparency and creativity.

CAMILLA POLI

MARKETING CONSULTANT
MANNER SOLUTIONS

Camilla Poli is a Marketing Consultant with a hybrid professional background in marketing and communications, covering roles in accounting, research, and strategy. Prior to joining the Manner team, Cami was at Bottega Veneta for 3 years and spent 7 years working in International Advertising Agencies with clients like Coca-Cola, Samsung, Campari Group, Heineken and Diesel.

TRINA FOSTER

ADVISOR & INVESTOR
TO MANNER SOLUTIONS

Trina Foster has extensive experience advising CEOs and executive leadership teams both in-house and as an external advisor. Her main areas of focus are brand strategy, marketing communications, and corporate reputation management.

The fashion industry is a complex and data-rich ecosystem. From the initial concept to the final product, many steps are involved, and each step generates valuable information. We live in the past, present, and future daily. We juggle the current and future data sets and reconcile the previous ones to gain insights to keep the cycle going. Like most businesses, the industry backs into technology to get more with less by maximizing resources, time, and money to manage the multitude of moving pieces that is today's business reality.

During our 20+ years in the fashion industry, we have seen many retail companies make significant IT investments in PLM, PDM, MP&A, CRM, ERP, PIM, and DAM systems — to keep pace with digital transformation, AI, and business intelligence resources — they mistakenly view these as discrete, individual investments which are simply reinforcing existing siloed workstreams.

Why invest in all this technology for product development, merchandising, samples management, content management, etc. but share data from these dynamic engines in static spreadsheets? Product development is dynamic. So, how is sharing stale spreadsheets capitalizing on the IT investment? The product development end-to-end workflow is not linear. It is fluid, and there is considerable overlap in various teams' need to be kept up-to-the-minute with product changes. Otherwise, the consumer engagement strategies are often out-of-date with the wrong product, dropped styles, and offering no visibility into inventory levels and business liabilities. We know how costly – in terms of both time and money - these issues are for data management teams, who spend hours cutting and pasting stale data sets from across the organization.

Amongst the many changes in today's business environment there is a new and very important stakeholder – the 'data scientist' – who fashion companies need to embrace. Don't be fooled by the title, they are highly creative individuals who are as passionate about fashion as we are. As for us, we love technology and fashion and consider ourselves process geeks with a strong sense of style. Regardless of labels, we are firm believers in the value of sharing transparent, easily understandable, and actionable data.

According to Jonathan Cornelissen, author of The Democratzation of Data Science in Harvard Business Review, "Intelligent people find new uses for data science every day. Still, despite the explosion of interest in the data collected by just about every sector of American business – from financial companies . . . and the government – many organizations continue to relegate data-science knowledge to a small number of employees." He stresses that this practice is a mistake, and we agree. Share it. Use it! Let's stop the spreadsheet madness. "These days every industry is drenched in data, and the organizations that succeed are those that most quickly make sense of their data in order to adapt to what's coming. The best way to enable fast discovery and deeper insights is to disperse data science expertise across an organization."

Retailers face challenges harnessing the staggering amount of data they generate to build insights. According to IDC (International Data Corporation), "By 2026, retail will be one of the top 5 industries in data generation — exceeding banking, manufacturing, and healthcare." So, the time to act is NOW to understand how to manage, harness, and democratize data. And here is why.

The IDC foresees more retailers recognizing the need for data automation and integration to maintain competitive advantage. Further, they note that innovative companies already see data as a product that cross-functional teams can manage in order to drive revenue and improve customer engagement.

We know that identifying key business drivers for content creation requires enormous effort and coordination. Yet, we often see the all-too-common example of stale data generating costly delays and budget overruns as the wrong product is photographed for customer engagement campaigns. Teams work without critical insights and strive to create content based on outdated information and hearsay. Worse, trends change, and products are often dropped last minute. When changes are not caught in time, the consumer sees creative assets featuring products that have been dropped or are unavailable because they are still sitting in the factory or on a boat idling off the port of Long Beach, CA.

Have you ever gone into a store, asked about a product, and been told to buy it elsewhere? We have. During a holiday trip in Europe, we spent time shopping. A giant billboard showcased a jacket we wanted to try on. We went directly to the sales associate and said that we wanted to purchase the jacket featured in the image outside the store. The salesperson told us that men's products were not sold in that store and directed us to a department store across the square. So off we went, only to be disappointed to find that, while men's underwear was on sale, the jacket was MIA.

Moral of the story: The image and placement did their job; they got us into the store. But the customer experience went downhill from there, not only was the jacket not available, no effort was made to help locate one – either online or at another location. We left feeling frustrated. The sales associate should have been able to quickly look up the creative asset, see what product was featured, and then provide direction. If they had asked us where we lived, we could have ordered the product online and had it waiting for us when we got home.

For many years, other industries have embraced technology to restructure excessively laborious work processes, which proved effective in improving everyday operations. However, the pandemic raised the stakes and taught us that agility and technology are essential. For retail and fashion, digital transformation initiatives stress the urgency to implement strategies to optimize data and contextualize the information for competitive advantages.

Fashion brands tout their "embrace of digital transformation," but their technology investments are almost exclusively externally focused (e.g., e-commerce platforms, social media, and interactive retail experiences). While these efforts are essential, brands must think more broadly and invest in technology to motivate and engage employees and empower them to develop, produce, and market the most innovative and inspiring products.

There is a real need for a data solution that can contextualize product data by capturing a style's metadata, samples, content strategies, creative assets, in-market execution, and performance in one place accessible to all the relevant departments. Many systems manage this end-to-end product life cycle, but it is challenging to put that volume of data created in context, as a product goes on its journey from concept to archive. This is why we evangelize democratizing product/style data so teams can easily "follow the style" and effectively manage departmental, executive, and consumer expectations.

We strongly advise unlocking workflow silos and turning them on their side to create a pipeline where information can flow from department to department. This seamless flow of information is critically important in complex, creative-driven organizations because so much is riding on each step of the design-market-archive process. Companies are investing in aggregation tools to create data hubs for business intelligence, but they need to take it one step further. They need to share beyond the VP level and provide contextualized data for all business workflows.

The lack of tools and resources is the true culprit of data staying locked in silos and not being used to its full potential. Providing teams with the tools they need to do their jobs correctly promotes accountability, transparency, and the much-needed context for informed decision-making. By democratizing data, groups can let systems do the work, allowing the time/space for the talent to identify trends, perform analysis, and grow their skillsets within the company. Upskilling and reskilling your current workforce is commonly regarded as a great way to retain talent and improve employee satisfaction, ultimately providing a competitive advantage.

As a final note, an issue that doesn't get enough attention when brands talk about their investments in "technology", is the impact of technology on employees. We see a serious pipeline issue if brands continue to expect employees to operate in an analog world of siloed departments, juggling massive spreadsheet outputs from multiple disjointed data sources. When putting together a cohesive story based on the available data becomes too much of a burden, employees will burn out. It can be detrimental to the company culture when team members feel like they are not only not set up for success but expressly set up to fail. The result is high employee turnover and a critical loss of institutional knowledge.

In closing, our view is that the competitive advantages of data aggregation and integration fall into two broad areas: actionable transparency and time/cost-saving efficiencies. On the first point, we know that all modern companies claim to be "data-driven"; however, many leaders in the C-suite (executive, financial, marketing, merchandising, and operations) we speak with feel overwhelmed by the amount of data in their organization. Most of these leaders tell us they don't feel better informed or more in control because of the data—in fact, they feel the opposite. They are desperate for a simple way to turn all that data into usable and actionable information.

We urge you to join our mission to democratize product data and give your cross-functional teams real-time access to product data to make better-informed decisions around design, production, marketing, and sales. We know from experience that teams working with dynamic and normalized aggregation platforms are more engaged and feel valued in their roles because they spend more time thinking and less time searching, validating, and wrestling spreadsheets. As we noted earlier, the time to act is NOW to manage your data and harness it to its fullest potential.

SHARING THE PRODUCT JOURNEY

FROM SPOTLIGHTING SHARED VALUES TO CREATING ENTIRELY NEW VALUE PROPOSITIONS THAT TRANSCEND TRADITIONAL CHANNELS, FASHION BRANDS HAVE MORE STORIES TO TELL - AND MORE WAYS TO TELL THEM - THAN EVER. BUT EVERY CHAPTER OF THE BRAND AND PRODUCT JOURNEY WILL NEED TO BE BACKED UP BY DATA FOR AUDIENCES TO BUY IN.

ANA FRIEDLANDER

INDUSTRY SOLUTION & STRATEGY DIRECTOR, INFOR

Ana has over 25 years of experience in the Apparel and Retail industry, both from the fashion and retail companies as well as software companies. Prior to joining INFOR, she was the Chief Information Officer at the largest privately held outerwear company, leading all the IT, Supply Chain, and all technology initiatives to drive growth. She also played an active role in the RFID and Blockchain projects sponsored by GS1 and Auburn University together with the larger retailers to test the feasibility of the RFID & Blockchain technology prior to becoming a requirement to the industry.

If you are not telling your story, someone else will!

With increased focus on sustainability, different surveys indicate that consumers are finding it difficult to distinguish which products are truly sustainable. In many cases, the consumer seems to be willing to pay a higher price for more durable products. It all leads to consumers looking for ways to better understand the brand and its products to get better insights into things that matter. This could include information around product origin, composition, and what options are possible to prolong the lifetime of the product, such as repair or upcycle. By being able to share such data, brands have the opportunity to demonstrate leadership when it comes to sustainability and thereby develop a stronger emotional bond with consumers.

This article will explore how to engage and become more intimate with consumers by offering valuable information that can be shared through a product passport, that follows the product throughout its extended lifecycle.

BRAND INTIMACY - CREATING A PERSONAL, EMOTIONAL BOND WITH CONSUMERS

Consumers are looking for more insights into the products they intend to buy:

- What's the origin?
- Is production sustainable and are people being treated fairly?
- How much impact has the product on the environment?
- Is it made of recyclable material?

Consumers are now connecting their choice of products with emotion. What do they believe in, do they connect to the product and the story of the brand, does the brand support their beliefs, and most importantly, do they believe in the brand and what it stands for. That is a short definition of brand intimacy. Associating the brand's story to their lifestyle is becoming a key factor. Currently, consumers are associating emotion, beliefs, and social responsibility with their buying patterns.

However, it is important not to confuse brand intimacy (how a customer can identify themselves closely with a product or brand) with brand loyalty.

Since emotion is usually baked into the experience of a consumer when they buy or wear a brand, it is interesting to see that most of the brand intimacy factors are not only famous apparel brands, but also upcoming brands that are focused on sustainability, social responsibility, and products that could be candidates for circular fashion.

Approximately 65% of fashion consumers care about the environment and would buy more sustainable clothing even if they are more expensive in comparison to the more commonly used material.

A great example of a business that has been growing at a tremendous pace is The Recycled Planet Co., a company that produces men's and women's fashion outerwear using only recycled, repurposed and sustainable components. Because of their company mission and vision, it is one of the fastest growing outerwear companies as their consumers have identified themselves not only with their products, but also the company's mission to "save the earth". In a recent conversation Infor had with its founder, Stephen Weisbuch, he said, "The Recycled Planet Company mission was to create fashion-driven outerwear using sustainable, repurposed, and recycled components. We selected a logo featuring the Polar Bear, as it is a species that will become extinct within 50 years if we don't reverse the climate and environmental damage that the apparel industry has created. Consumers as well as major retailers have immediately embraced this brand as they identified themselves with the mission and purpose of the company, which is a commitment to protecting the planet and its resources."

Consumers want to associate with brands that create value for them. In this example of brand intimacy, it focuses on a "feel good by joining the movement", as it is more than just a product purchase. When companies have a clear story to tell, and at the same time are transparent about their products, they make it easier for consumers to make the right choices. Based on what we are seeing, this makes a positive effect and can lead to an individual being a strong advocate for the brand in social media.

Next to transparency, additional services such as resell or repair or rent have become more common. This kind of business model can lead to a new revenue stream. After all, the idea is that a product will live longer by being more durable, and the market is appreciative of brands moving in this direction. Another trend that is becoming more common is the concept of made to measure, personalised made for the consumer with the best fit.

Overall, there is value in creating an emotional, personal bond through the way you interact with consumers. And loyal consumers who have "bought into your story" will be strong advocates for your brand.

PRODUCT PASSPORT

What is the story around your product and your brand? Can it be deemed sustainable? What's the value and how can the product be repurposed? Will consumers want to associate themselves with your brand?

The concept of a product passport will help articulate the key value your product brings to the market.

Digital Product Passport (DPP) is a blockchain-based end-to-end tool for traceability that allows companies to record and share information about the product to prove the product origin and how sustainable it is. Digital product passports and blockchain can play major roles in creating a more sustainable future. Together, they offer a solution to add more visibility, trust, and knowledge of material flows within global supply chains.

But how would they work together?

A digital product passport contains a large amount of information about products, allowing the entire lifecycle - from production to end-of-life disposal – to be tracked. Type of information collected could, for example, be origin of the material used (e.g. the cotton farm, country), operations in manufacturing (relating to both fabric and finished goods), transportation, distribution to market channels, as well as activities like return, repair etc. In order to manage all of this data a unique product identification like RFID, QR code would be required.

Product serialization is a process of generating or assigning a unique identifier for each product. This process enables authentication and the ability to prevent counterfeiting a product, or brand. This process not only promotes buyer confidence, but also enables better inventory control. Another important factor that a digital product passport with serialization brings is the support of circularity in the fashion industry. When applied correctly, this approach ensures the product's full value being realized, and the brand protection and authenticity factor it brings will allow for being re-used and re-sold.

At the end of use, a digital product passport is invaluable for the disposal of products to increase the efficiency of material recovery and the reduction of waste. One of the most notable initiatives at the heart of this transition is the new CircularID™ Protocol, developed by leading fashion brands, retailers, and other stakeholders across the value chain. The CircularID Protocol will provide a common language for brands to communicate across the lifecycle of products. It establishes essential product and material data and introduces a consistent format for describing it.

Creating a digital product passport requires dedication, planning, analysis, and collaboration to ensure that all the relevant information is accurately captured and stored. The work does not end with its implementation. It will also need to be continuously monitored, studied, and audited to identify any issues that need to be addressed, such as outdated or inefficient processes. Implementing a digital product passport system is the first step on an innovation journey that will create new interconnected ways of working. The full benefits of digital product passports will only be realized once they are scaled and interoperable across multiple value chains. The data and insights contained within digital product passports can then be used to inform material selection challenges, product design briefs, and circular business models. In turn, these can facilitate customer interactions to promote sufficiency, product lifetime extension and take-back operations to facilitate end-of-life recovery.

In the last few years, more companies have been adopting the concept of serialized data and are requiring it as part of their product creation. Stakeholders throughout the supply chain process in the Apparel industry are installing the infrastructure to collect information on products flowing through the channel. This technology should not be ignored because it highlights the transparency of the fashion supply chain through improved traceability and authenticity of merchandise. It allows tracking of inventory and helps reduce cost of business in the fashion industry.

Imagine being able to be fully transparent of the product journey from beginning to end. All the different steps on the journey can be stored and visualized through the passport.

It is great if you can collect all this data across the value chain, but in addition to this, there needs to be a unique product identifier such as a QR code to store the data. Whenever you have all data in place it could then be shared with consumers simply by scanning a style tag via app on mobile phone to get access to the product story and journey.

However, technology solutions are not enough to get the full benefits, there's also a need to change mindsets around how, what, when, and with whom to share data.

IT'S ALL ABOUT DATA

How easy is it to manage this?

One thing is for sure: a lot of data is required - and the data needs to be of good quality. However, it is quite difficult to get hold of all the data required since production tier 1 to tier 4 is not often all under your own roof. So how to then get hold of this data?

Most likely, there will be so-called "information gaps" in the value chain. Luckily, there are tools on the market that can help fill that data gap based on artificial intelligence and other methods. Blockchain is an example of technology that can assist on this data gathering.

Digital product passport is one of the factors contributing to the foundation of the blockchain technology in the Apparel and Fashion industry. This is already being utilized in many industries and is beginning to gain momentum in the apparel and fashion industry as well to improve transparency and traceability, thus demonstrating the immense potential in accelerating the transition towards a circular economy.

Due to the decentralized nature of public blockchains, unauthorized access and manipulation of the data is impossible, making it highly trusted and reliable. The major challenge is that all transactions may be visible to

everyone on the network and therefore can result in a lack of privacy. This can be a major concern for companies who want to keep certain information such as sensitive data relating to the composition of materials and products confidential and secure. Yet, this is sometimes the exact data that is needed to facilitate circular innovation and recovery strategies.

Methods for protecting data privacy have been developed and are already in use in system applications.

Digital product passports offer a transparent way of tracking and managing product information, allowing regulatory bodies, businesses, and consumers to identify and verify the quality and origin of products. Building digital product passports on public blockchain technology provide permanent records of ownership, origin, and usage, increasing trust and transparency in complicated supply chains.

Once you have the data, the unique identifier will help to store the data attached to the product. Modern technology will assist in implementing initiatives like this, allowing you to innovate and stay ahead of the game.

CALL TO ACTION

Digital product passports along with transparency will almost certainly become the norm in the coming years, just as sustainability has become essential for long-term success. Companies that focus on sustainability can reduce operating costs, improve operations, and reduce inefficiencies. At the same time, they can increase customer satisfaction and loyalty, boost brand reputation, and tap into the growing demand for sustainable products.

By adapting the above technology, you can demonstrate leadership, and weave sustainability into the operational strategy to your business.

The starting point is to understand what type of reporting you will be required to provide, and what type of information consumers are looking for.

Then the next step is to start investigating your current situation:

- Do you have data available for the type of reporting required?
- If not, what is the plan to get hold of this data?
- And once you have the data, how do you intend to share it with consumers and different stakeholders?
- If you intend to embark on the product passport journey, can your current systems provide and store necessary data?

With modern technology there will always be a way through the cloud – it can help you to innovate, create that unique experience that will put you in the lead while making sure you are compliant to ongoing and upcoming market regulations.

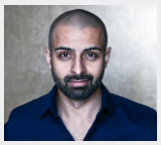
VELOCITY OVER SPEED

FOR DIGITAL TRANSFORMATION TO REALLY TAKE HOLD, UNIFYING A DIRECTION IS EQUALLY IMPORTANT TO FINDING THE RIGHT TECHNOLOGY.

LIZA AMLANI

PRINCIPAL & CO-FOUNDER
RETAIL STRATEGY GROUP

Liza Amlani is the go-to expert in retail merchandising, product creation, and accelerating speed to market. She is the Principal of Retail Strategy Group: a consulting practice helping brands and retailers dramatically improve profitability and increase organizational effectiveness. Liza brings a wealth of global insights to clients having lived in North America, Europe, and Africa. She has in-depth product creation experience from her 20+ years in retail. Her claim to fame is that she designed all the bags for FIFA World Cup 2002.



RAJ DHIMAN

CO-FOUNDER & RAINMAKER
RETAIL STRATEGY GROUP

Raj Dhiman PhD is the Chief Rainmaker and Co-Founder at Retail Strategy Group. He is an expert in tech sales having sold software for over seven years. He is a respected sales coach and has elevated the performance of hundreds of sales professionals. Before his selling career, Raj completed his doctoral research at the University of Toronto. His research produced three peer-reviewed articles which bear his name. Also, an accomplished speaker and former actor, he speaks to audiences about how brands can improve profitability.

Digital transformation without process innovation is a recipe for failure.

Consider this. A recent report from PwC reveals that only 17% of supply chain executives say that tech implementations have delivered on expectations.

Tech vendors might recoil upon reading that, until they get to the underlying reasons. This is not an indictment of the technology. Rather, this shortfall is about companies not changing how they work before implementation. Much of this change is due to processes, internal culture and upskilling employees - the absence of change in these areas is a direct contributor to low success rates of enterprise tech implementations.

This trend is not exclusive to other industries: retail and fashion executives feel the same way. At a recent retailer round table where technology implementation was the focus of the discussion, we observed as the group identified their top three challenges. Process innovation topped the list. In talking to retailers in attendance, many pointed out that they fall victim to shiny object syndrome. Chasing what is "on trend" while neglecting the fundamentals of their business. The current sandstorm of hype surrounding the metaverse and AI does not help, but it does provide a very potent example of fashion's tendency to rush toward new possibility spaces without laying the proper foundations first.

What results from this is a recurrence of issues that are too fresh in many executives' recent memory. Last year's headlines of excess inventory is a demonstrative example of what can happen when racing to fresh opportunities and losing focus on key metrics and outcomes.. That's just one example of many. It's no surprise that investments in digital transformation can fail to deliver the expected returns when unaccompanied by process innovation.

PLM vendors and consultants would be wise to take note as this impacts them directly - not just in obvious ways, but in more insidious ones - the kind that, over time, compound to reduce the likelihood that a technology-enabled or tech-adjacent project will succeed.

So let's consider this concerning trend through a direct PLM-focused lens. PLM proponents - and technology vendors - say that the tech drives smarter decision-making, improves efficiencies, consolidates product data, and delivers faster product development, amongst other benefits. Put these together and they lead to an acceleration in speed to market. In turn, retailers preserve gross margins, increase full-price sales and prevent excess inventory. All of these are excellent drivers of value for any retail organization...provided they're given the right support to be realized.

But, there is an inherent problem with the idea of "speed to market." One that technology cannot solve on its own, and it is a perfect case study for why technology adoption and process evolution must occur in tandem.

Speed to market, as we refer to it, is a result of cultural issues rooted in different functions having different, and often, competing priorities. These must be reconciled for a product to move efficiently along the line from inception to point of sale.

This is not a concept that's restricted to specific industries. A Wall Street Journal article from early April describes the development of a weight-loss drug by Eli Lilly. To quickly introduce the drug in a competitive space, the company needed to overhaul existing but failing processes. This was necessary as the company made development decisions based on sales potential and not patient outcomes. Specifically, business leaders focus on sales forecasting, while scientific leaders focus on patient outcomes. This is akin to a rowing team moving out of sync with one another.

In our work with brands and retailers, we see the same thing. The main difference in fashion is that the timelines are shorter, and the product mix is more varied. Nonetheless, competing priorities of different functions slow the pace of getting products to market. Each function moves in a different direction. Simply accelerating steps is not helpful as teams end up nowhere, faster. This is shown in Figure 1.

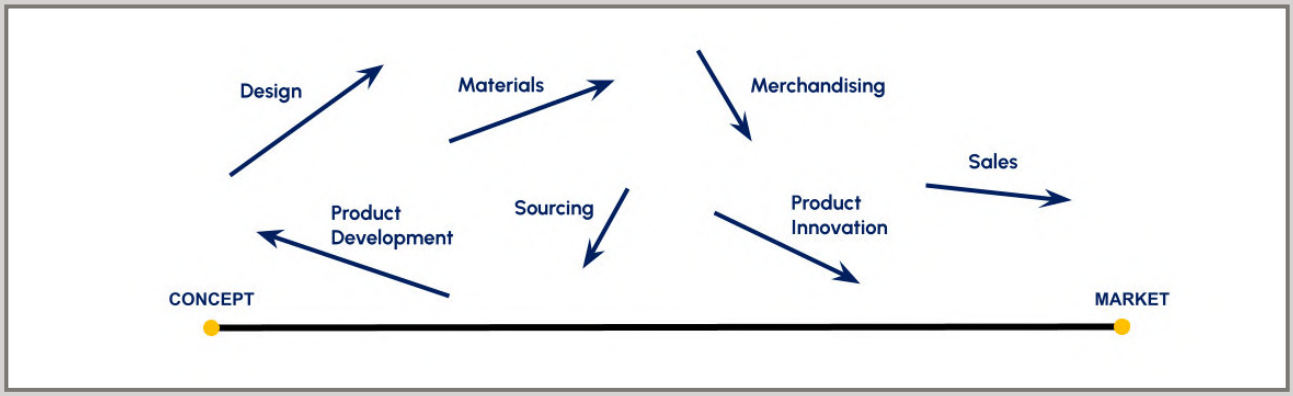


Figure 1. When teams have competing priorities, they move in different directions. Going faster does not help.

When working in this way, brands find themselves pushing out deadlines, have data/insights sitting isolated from the functions that need them and employees become stressed. Clearly, digitization in this scenario is destined to fail; the root causes of issues are not being addressed. Giving people a new, digital place to work and put information does not align their priorities automatically. As we've said: technology implementation must be accompanied by process and cultural evolution.

While that sounds like a complicated, org-wide transformation, what is actually needed here is a slight change in thinking about how teams work. This change is found in the distinction between speed and velocity. Speed is a numerical value expressing distance moved over a period of time. Velocity expresses distance moved over time with a specific, defined direction.

Figure 2 exemplifies the power of velocity; all teams move in a singular direction. This is in stark contrast to the scenario in Figure 1.

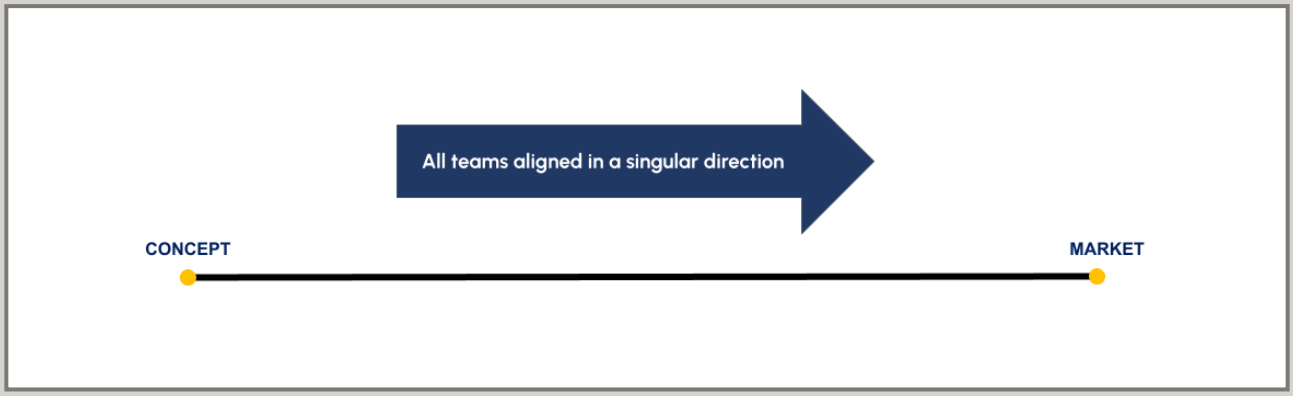


Figure 2. When all teams move in unity, in a single direction, momentum is gained.

The difference in momentum gained by teams moving in sync with one another is significant. Think of the rowing team that now moves in harmony; it's an impressive feat. With this setup, a PLM solution can be introduced to further elevate the performance of a unified go-to-market process. This way, real-time insights from customers can inform product creation decisions, deadlines are adhered to, and employee productivity is increased. This is exactly how brands can see the dividends of their PLM investment.

To be clear: it is encouraging to note that retailers continue to invest in new technology. Digitization is necessary to stay competitive. But it is also critical that retailers reflect inwards first, and examine their internal processes before embarking on a digital strategy.

And for PLM vendors and consultants, they need to view themselves as a true partner of a retailer and a driver of digital transformation - not just a vendor of a solution that can deployed in isolation. An understanding of process innovation is essential for that to happen. Because only when internal culture and processes change does it make sense to introduce technology on the scale of PLM.

This way, more retailers will see a return on their investment. And that's good news for retailers, vendors, and consultants alike.

HOW PLM CAN CALCULATE GHG (GREENHOUSE GAS) EMISSIONS FOR MATERIALS AND PRODUCTS

FOR FASHION TO REDUCE ITS CARBON FOOTPRINT, IT MUST FIRST FIND THE RIGHT TOOLS AND PROCESSES TO QUANTIFY EMISSIONS ACROSS IT'S GLOBAL, MULTI-TIER SUPPLY CHAINS. SITTING AT THE CENTRE OF THE PRODUCT LIFECYCLE, PLM AND INTEGRATED PLATFORMS COULD HOLD THE KEY TO MEASUREMENT AND MANAGEMENT.

MARK HARROP
CEO & FOUNDER
WHICHPLM ADVISORY

As a technology advisor to the fashion industry, Mark has worked for more than four decades to help the world's best known retailers, brands and manufacturers achieve efficiency savings across their entire supply chain through informed technology investments.

According to one estimate, the fashion and textile industry is responsible for around 10% of global GHG (Greenhouse Gas) emissions, making fashion one of the world's top industry polluters and contributors of CO2 into the atmosphere.

Fashion & Textiles has a significant impact on the environment due to its intense use of resources, such as water, energy (oil, gas, electricity, fuel, transport) and let's not forget labour. There are a multitude of materials used in fashion, too many to mention in this article. So, let me use two examples – starting with cotton, which starts its life from farming all the way to the finished material. The cotton process from farm to material, as you can imagine, involves many process steps and passes through multiple partners by the time it's converted into the finished material.

FROM NATURAL FIBRES TO FINISHED MATERIALS

First, the cotton seeds are planted in fields and carefully tended, consuming large amounts of water, pesticides, fertilisers as the crop grows. Once the cotton plants are mature, they are harvested using mechanical cotton-picking machinery & equipment, which removes the cotton fibres from the plant. The fibres are then ginned; this process separates the seeds from the fibres, and the cotton then goes through dryers to reduce moisture content and then through cleaning equipment to remove foreign matter. It's not possible for me to call out each resource used

in each process, but as you might imagine every process step incurs different resources that in turn contribute to the total GHG/CO2 emissions, from the farm to material manufacturing.

Next, the fibres are cleaned and sorted according to their quality. The best fibres are used to make high-quality products & textiles, while the lower-quality fibres are used for things like padding and insulation. After the fibres are cleaned and sorted, they are spun into yarn or thread linked to specific gauge and strength requirements. The yarn or thread is then woven or knitted into fabric, to make a wide variety of fashion and textile related products. Again, contributing to the total GHG/CO2 throughout the entire life cycle.

Finally, the fabric is finished by undergoing various processes such as pre-treatments, dyeing, printing, (wet dye or digital dyeing) plus any finishing treatments. Each of these steps and the choices taken by designers and development teams are critical to defining the CO2 impact calculations.

FROM SYNTHETIC FIBRES TO FINISHED MATERIALS

Polyester is a type of synthetic polymer that is created through a chemical reaction between a dicarboxylic acid and a diol. This reaction, known as polycondensation, produces long chains of molecules known as polymers. The exact process for creating polyester materials varies depending on the specific type of polyester being made, but generally involves mixing the dicarboxylic acid and diol together in a reaction vessel, along with other chemicals and catalysts. The mixture is then heated and stirred to promote the polycondensation reaction, and the resulting polymer is filtered, washed, and dried to create the final polyester material.

As with the natural materials like cotton, there are many processes that require large amounts of resources, that are adding to the total GHG/CO2 emission calculations for a given contract/order. Using the latest PLM-BOP (bill of process) tracking each operation, machinery types, machine throughputs, resource type and usage, PLM is now able to measure the CO2 impact at both secondary and primary levels.

When added together these processes use a tremendous number of resources that combined expel tons of CO2 into the atmosphere.

TRANSPORT OF RAW MATERIALS TO MILLS, MANUFACTURING, AND BRAND FACILITIES

To arrive at a scientific impact measurement, we also need to calculate transportation – including raw materials coming from farms, or chemical producers to the mills that knit, or weave materials, that in turn are transported onto the manufacturer to produce finished products before these are ultimately shipped again to the distribution centres, stores or transported direct from warehouses to the consumer. Each of these logistics steps contributes further to the total greenhouse gas emissions.

Every step including design, sampling, development, manufacturing all incur transportation, and each with its own deeper complexities (split orders, multiple sourcing locations, geographies, to the last mile!) that all need to be calculated when it comes to science-based CO2 impact measurements.

When calculating the CO2 impact, we first need to consider the different methods and mixed options of transportation (Air, Sea, Overland), types of fuel used by each or a combination of these transport methods, and of course the miles/kilometres travelled before materials and products reach their destination. And then there's the cost of fuel at each of the points of fuelling.

MANUFACTURING AND CO2 CALCULATIONS

In this example I will stay with woven materials, where the process of manufacturing starts with manually batching the materials for width and shading before moving on to Spreading and Cutting (manual or numerically controlled cutting machines). The parts are then matched ready for pre-assembly (machining, pressing & finishing) of clothing, footwear, accessories, bags, and other related fashion items. When added together these processes use a tremendous number of resources that, combined, expel tons of CO2 into the atmosphere.

CONCERNS RELATING TO CURRENT FACILITIES CO2 MEASUREMENTS

My concern with the present methods of measuring the fashion industry's impact on total CO2, is that it is only capable of using

generic aggregated data (secondary datatypes). This means that the final calculation is built on estimates & averaging, operating at the facilities level (mill, chemical plant, factory, warehouse, etc), and lacks the necessary requirements and complexities relating to processing data, and primary data (actual data) coming from the original source i.e., brand, farm, chemical plant, mill, or factory). This negatively impacts the industry's ability to deliver meaningful scientific-based measurements that can be used to support a brand's goal of quantifying and then reducing its total greenhouse gas emissions.

One way to measure the greenhouse gas impact of fashion is by using lifecycle assessment (LCA), which is a technique used to evaluate the environmental impact of a product or service throughout its entire life cycle, from raw material extraction to disposal. LCA's can be used to assess the greenhouse gas emissions associated with different stages and processes of the fashion industry, such as the production of raw materials, manufacturing, transportation, and end of life disposal of clothing.

Another approach to measuring the greenhouse gas impact of fashion is to calculate the carbon footprint of individual materials, trims, components, and their processes at a material, product, order, or collection level. A carbon footprint is a measure of the total greenhouse gas emissions associated with a particular material, product, or activity. By calculating the carbon footprint of fashion materials and products, companies and consumers can better understand the environmental impact of their choices and make more informed decisions, based upon 'scientific measurements'.

HOW CAN PLM AND PARTNER COMPANIES SUPPORT SCIENTIFIC CO2 IMPACT MEASUREMENTS

The good news is that we can now scientifically measure the CO2 impact at both material and product level, capturing data throughout the design, development, and production processing. Measuring a material's CO2 impact on a per meter basis and providing unique education on sustainable choices relating to the BOM (Bill of Materials), BOP (bill of process) and BOL (Bill of Labour), these new and exciting related capabilities can help educate designers, developers, and their tier 1, 2, 3, and 4 partners on their choices, including which are the most sustainable materials, or processes linked to their total CO2 impact emission calculations.

EXTENDED PLM PARTNERSHIPS DELIVERING CO2 IMPACT CALCULATIONS

Once we arrive at our material choice, then the designers can add colour options, with lighter colours requiring less dyestuffs versus mid/darker colours requiring more dyestuffs, chemicals, and extended processing times. Each of their choices including volumes will make a considerable effect on the total CO2 impact measurements. Today at least one PLM vendor has partnered with Made2Flow & Frontier Cool to develop extended PLM BOM capabilities, material CO2, process choices and volume calculations. Each of these choices and decisions along the material or products lifecycle will have a significant impact on the total CO2 products emissions and will not only go down to the material level, but can also be rolled up to a product, and can be further expressed as a total contract or order level CO2 report.

Beyond materials and processing options, PLM can now start to measure machine production resource usage (oil, electricity, gas, air, others), machine processes, motor speeds the total AMP's & wattage usage.

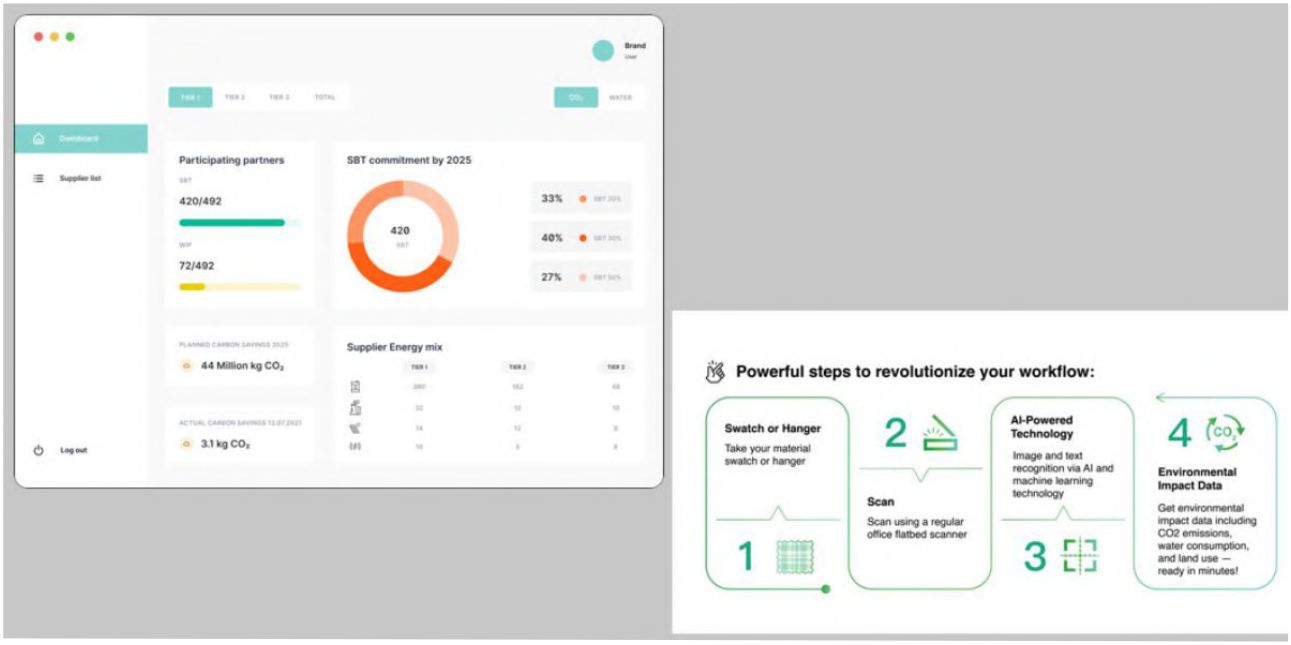
CO2 IMPACT MEASUREMENT ACCURACY LEVELS

PLM solutions can be configured to use generic secondary data (standard best-practices) to support the calculations of a material, or product's carbon footprint (CO2 greenhouse gas emissions) and provide a detailed analysis of the greenhouse gas emissions associated with each stage of the product's life cycle.

If a brand requires greater accuracy levels of Co2 impact measurements, then primary data is required, this is the actual data which comes direct from each of the brands (Tier 1,2,3, and 4) partners, including details of their machinery, processing capabilities, throughputs, resources, etc.

Today PLM CO2 partner companies are now managing over four million process data points, which are growing by the week!

In addition to supporting carbon footprint measurement, PLM solutions, when fully configured and integrated to critical CO2 partner technologies, can help brands identify opportunities for reducing their greenhouse gas emissions prior to committing to the final design, sampling, and developments. For example, PLM will be able to provide designers with sustainability insights for the very 'first time' during the design



Images provided by Made2Flow & Frontier Cool.

process, using an embedded CO2 calculator that identifies materials, and processes that have the highest environmental impact, allowing designers to make more informed sustainable choices in their material or product design and development processes.

Up and till this point, very few designers or developers truly understand how their choices of materials, colour options, pre-treatments, or finishes of materials have on the total CO2 impact measurements, and the same can be said for the final production methods (spreading, cutting, pre-assembly, sewing, pressing, and finishing) that are all critical stages of producing fashion products, and all of which impact the total CO2 measurements.

In addition to calculating the product's carbon footprint, the PLM solution will also be able to provide detailed analysis of the environmental impact reports at each stage of the product's life cycle. This will help the brand and manufacturing companies identify opportunities based on the lessons learnt and changing to smart informed sustainable choices linked to design, development, sourcing, and manufacturing with the combined aim of reducing their total greenhouse gas emissions.

We have arrived at an exciting new chapter when it comes to GHG/CO2 emission calculations, genuinely a 'first of a kind' breakthrough in science-based measurements. It's time for the fashion industry to use a PLM solution as part of their environmental and sustainability strategies, helping brands to operate more sustainably and mitigate their impact on the environment.

Finally, and frankly speaking, PLM is the only technology platform today that can bring together complex partner datasets into a single lifecycle solution from material to the finished product. Supporting the entire lifecycle (designers, product developers, material & trims developers, colourists, costing teams, sourcing, manufacturers, mills, trims & component suppliers, weavers, knitters and dye houses, farmers, and chemical suppliers). When operating together will enable science-based calculations relating to their design, development, manufacturing, and ultimately their CO2 emissions choices in near real-time!

WHY INTEGRATIONS TO PLM ARE DRIVING DIGITAL TRANSFORMATION IN FASHION

AS FASHION TECHNOLOGY ECOSYSTEMS BECOME BROADER AND MORE COMPLEX, THE IMPORTANCE OF INTEGRATIONS IS INCREASING. BUT WHAT DOES IT MEAN TO INTEGRATE TOOLS AND WORKFLOWS THAT SUPPORT DIFFERENT AREAS OF THE PRODUCT LIFECYCLE WITH ONE CENTRALISED SOURCE OF TRUTH? WHAT WILL IT TAKE TO REALISE A FULLY CONNECTED VALUE CHAIN?

CHRIS JONES
FOUNDER
& DIRECTOR
JBSO GROUP

After originally training and working as an engineer, Chris joined a fashion services and technology company 30 years ago to implement ISO9001. Since then, he has helped over a hundred fashion brands, retailers, sourcing agents, and manufacturers to optimize their processes, supported by innovative technologies and concepts, working in offices, showrooms, and factories world-wide.

I'm honoured to be asked to write a piece for this prestigious report. I've been asked to discuss integrations with PLM. Or rather, explain why we need integrations, how many integrations may be required, and how to consider what integrations are essential to the business.

Integrations within PLM solutions are not new. There have been many integrations with point solutions over the last 35 years within PDM and PLM. Most have been driven by individual use cases, often specified by the requirements of respective companies. However, only relatively recently have PLM vendors worked with other solution vendors to create integration frameworks for specific applications.

WHY DO WE NEED TO INTEGRATE?

The fashion industry's supply chain is a complex web of interconnected solutions, processes, and stakeholders, contributing to the final product's cost, quality, sustainability, and speed to market. Currently, process and product data are generated in a range of diverse applications spread across supply chain partners, tiers, and geographies. Unfortunately, this data is often siloed, manually shared, or based on templates, making acquiring accurate product-specific supply data difficult and time-consuming. To optimise the complex factors within the supply chain for every product, businesses must embrace a data-driven approach that allows all roles in the supply chain to make informed decisions based on near real-time and accurate primary data for all process options across the supply chain.

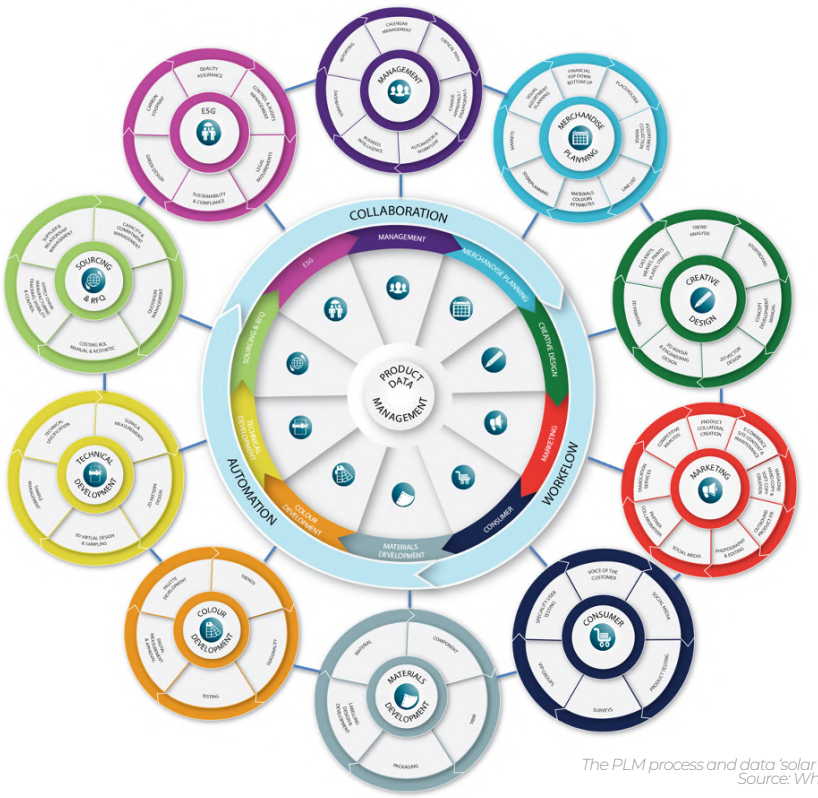
THE RETAIL GALAXY

What does 'integration' look like? First, we must understand how data is created and when it's required for decisions. We can use an astronomical analogy to describe the 'Retail Galaxy' as containing all the processes and data to support Planning, Merchandising, Design, Development, Sourcing, Costing, Manufacturing, Shipping, Warehousing, Distribution and Replenishment to Sales Channels to support our businesses. Of course, various applications and databases support all those processes and data, and often many vendor choices for each type of application.

We can separate this Retail Galaxy into 'solar systems'. For simplicity, we can divide it into transactional and non-transactional processes and data, with PLM at the centre of non-transactional and ERP at the centre of transactional.

The PLM and ERP 'solar systems' are integrated to varying degrees via PLM and ERP. For example, PLM provides critical non-transactional data, such as product and material data, to ERP as a foundation for transactional processes and data.

We have 'planets' orbiting with the PLM data model at the centre of the PLM 'solar system'. Each planet represents a process area comprising multiple unique processes and each process with unique associated data. These process areas 'planets' could be described as Management, Merchandise Planning, Creative Design, Marketing, Consumer, Materials Development, Colour Development, Technical Development, Sourcing & RFQ and Environmental & Social Governance.



The PLM process and data 'solar system'. Source: WhichPLM

Within each 'planet', there are multiple processes and associated data. For example, for Creative Design, these processes could include Trend Analysis, Storyboard, Concept Development Manual, 2D vector design, 3D avatar & engineering design, 3D printing, and CAD knits, weaves, prints, plaids, stripes.

The data from all these processes are collected within the central PLM data model and shared to roles across all processes, using the mechanisms of collaboration, workflow, and automation.

THE REALITY OF THE PLM SOLAR SYSTEM

As defined above, there are ten 'planets' and more than sixty types of processes. A business will already perform these processes and collect the associated data if relevant to the product types and business model. The question is whether the process is supported by an application or performed manually and how the data is pushed to the central PLM data model. For most businesses, many of these sixty+ processes may be manually transferred to the central PLM database, if at all.

We wish to optimise the complex factors within the supply chain for every product via a data-driven approach that allows informed decisions across the supply chain. Then, we need to enable real-time data from every process to be available at the centre of our business PLM 'solar system'.

THE ANATOMY OF AN INTEGRATION

The critical questions for any integration are which application collects, manages and 'owns' the data (the Parent), where the data is to be shared (the Child), how the two will be connected, and how often the data will be transferred.

This data will be driving on-demand dashboards to highlight business performance and enable rapid data-based decisions through interrogation by AI/ML models. Therefore, for accurate and (near) real-time data sharing, Application Programmable Interfaces (APIs) should be used to map data, set frequency, and the trigger(s) for the integration. APIs can be open and available to all licensees or closed when developed for a specific purpose/client and subject to an exclusivity agreement. We'd recommend Open APIs so you trade short-term exclusivity with long-term evolution and support of the API.

INTEGRATION PURPOSE AND APPLICATION CAPABILITY

Business processes are supported by applications. However, not all applications are equal, so we need to understand the requirements of our business processes in tandem with the capabilities of the applications, to define what data and how to share. To illustrate this point, we can consider three examples of process data integrations and the issues to consider.

DEFINING THE ORIGIN OF THE DATA

Many PLM vendors state that their PLM applications have a Bill of Labour, but is that correct? For example, there may be a table where operations can be manually populated or even a library where those operations can be populated for reuse. However, do they have pre-determined global standard libraries of time-motion operations supported by method codes generated by Predetermined Motion Time Study (PMTS) and calculation of a Method Standard defined by a methodology, including recognition by international bodies, such as the International Labour Organization?

There are several labour costing applications for fashion products that support work study engineering methodologies, operations libraries, and the training and certification for individuals and factories, which have received recognition from the ILO and other international bodies. Yet, it's still not that simple, and the products supported also differ by application. For example, for three globally recognised labour costing applications and associated methodologies, GSDCost and timeSSD support apparel labour operations, whilst SATRA TimeLine supports footwear labour operations. In a business that produces apparel and footwear, two separate applications would be required to support the labour costing process and two different integrations to a standard data structure.

Therefore, the question to ask the PLM vendor may be: with which labour costing applications does the PLM application integrate to display, a) minimum of summarised labour costing for product variations, and b) the Bill of Labour (all operations, SAMs/SMVs and cost per factory) for each product's supply variation? The answer will tell you whether the PLM application can display an accurate labour costing and if integration can be automated rather than manually updated. An informed decision can then be made based on the data and efficiency requirements of the business vs the capabilities, cost, budget, and timeline for elements of the connected solution.

AVAILABILITY OF THE LATEST DATA

When colour standards were initially offered in electronic form, any PLM vendor could enter an agreement and receive a file to import to their application, including updates with 100+ new colours for cotton and paper substrates every year ... or two. However, the distribution of colour standards has evolved. Now, new colour standards are available immediately in 'live' updates. For example, the Pantone colour standard is supported by Pantone Live. Does the PLM or Creative Design application have the capability to 'connect and forget' to provide those new colours immediately for your creative design and colour teams?

DO APPLICATIONS AND DATA MODELS SUPPORT THE REQUIRED DATA

My final consideration relates to new use cases and data types. In this example, the driver is the focus on improving sustainability, and the regulations upon us, that require measurement of supply chain process variations using science-based primary data. The challenge is to capture accurate data for a defined process, which must be achieved for all processes across all tiers and all supply chain partners. This has led to the creation of new businesses that have focussed on this challenge. If we use the example of measuring Greenhouse Gases (GHG), supported by companies such as Made2Flow, millions of data points have been captured, with applications enabling the definition and comparison of product supply variations in terms of CO2e.

This is something that a PLM vendor can only replicate with enormous investment. Still, regarding the imminent sustainability legislation, integration is a straightforward and beneficial use case across the fashion industry. However, the capture of GHG data is fundamentally based on the breakdown of processes for every operation that generates CO2 emissions. Currently, the capability to capture processes in a Bill of Process (BoP) does not exist in any PLM application. This must be addressed to enable the details of supply chain processes and breakdown of CO2 emissions to be shared seamlessly with PLM. Without a BoP, each supply variation for a product must be either an attachment or summarised.

The summary of CO2e per supply variation may sound like an acceptable outcome until you consider the workflow. In this scenario, we rely on the correct process combinations populated in the GHG calculation application by a supply chain specialist, then calculated and pushed back to PLM for assessment by other teams alongside cost, margin, timeline, and demand estimates.

This becomes a slow and clumsy workflow. A streamlined workflow requires all supply options to be available to the design team at the earliest opportunity, whether picked from templates, or suggested by AI/ML, then calculated seamlessly by the integrated GHG application, and available immediately to the design team to enable informed decisions to provide improved sustainability, cost, and timeline, for both product and workflow.

PLM applications must evolve to include new functions and extended data models for deep and practical integration to enable this efficiency.

WHAT ARE THE ACTIONS REQUIRED?

After scratching the surface with basic examples for three of the 60+ unique process types and data sets from the PLM 'solar system', we can see many integration options that cannot be addressed simultaneously. What prioritised actions could be considered?

UNDERSTAND THE WORKFLOW TO UNDERSTAND THE TECHNOLOGY

A vital element of any successful implementation is that technology supports processes. If you have a good workflow process, you will have good efficiency and adoption.... and vice versa. An efficient workflow process provides the user with accurate data with minimum effort at the earliest opportunity to make an informed decision.

Brands, retailers, manufacturers, and suppliers already know the data required to make critical decisions within their workflow. They must understand their current and "best practice" workflow, where relevant data is available to support informed decisions at the earliest opportunity. This will form a blueprint for the prospect/customer to understand and prioritise their requirements to implement their best practice business workflow, including the prioritised timeline for data and technology to support. Instead of a long wish list of functions and a box-checking exercise, requirements will be clearly defined for software vendors and enable; a) an open discussion of technology capabilities and roadmap to support best practice workflow between prospect/customer and vendor and b) assist the vendor in prioritising their development and integration roadmap.

BUILD STRATEGIC PARTNERSHIPS

The argument for integrated data across processes, supply chain partners, and disparate applications to drive efficiencies, cost-savings and speed to market is familiar to the fashion industry. There are many examples of application-to-application integrations, but these have been made on a case-by-case basis to drive software sales, with use cases that are 'low-hanging fruit' or customer-specific problem statements.

Strong collaboration between brands, retailers, manufacturers, suppliers, and software vendors is essential for understanding primary data generation and integration required to share with decision-makers across the supply chain.

- Brands, retailers, manufacturers, and suppliers must partner to map the supply chain processes, with specialist assistance to expedite progress.
- Individual businesses should bring a deeper understanding of their current and 'best practice' workflow for technology evaluations. Ideally, industry best practices would be defined.
- Software vendors must partner to enable the collection, integration, and visibility of primary data across the supply chain. A greater understanding of workflow from prospects & customers will allow prioritisation of the roadmap for integrations and new application functions and features to support them.

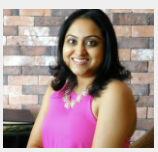
The industry must create genuine strategic partnerships sharing data and insights, where it's accepted that an effective connected solution must be a seamlessly integrated collection of specialised applications.

CONCLUSION

Statements on investing in technology and integrating data to provide visibility across the supply chain are 30 years old, but what needs to change in the fashion industry? We shouldn't expect altruism from every business in the fashion industry, yet we need to change some self-focussed behaviours. There are many areas to address to facilitate a complete digital value chain; a single company could not achieve this alone. Genuine partnerships must be created where each partner delivers their specialised solution element to the highest standard, and seamless data integration proves the sum is greater than the parts.

PLM BEYOND IMPLEMENTATION: ADOPTING THE NEW NORM

PRODUCT LIFECYCLE MANAGEMENT: A TERM THAT WAS ONCE A TREND IS NOW AN INDUSTRY STANDARD. AS PLM INITIATIVES MATURE AND SYSTEM CAPABILITIES INCREASE, COMPANIES MUST THINK, PLAN AND ACT BEYOND IMPLEMENTATION TO MAXIMIZE RETURN ON INVESTMENT.



MANSI KAMDAR

BENCHMARKING &
MARKETING CONSULTANT

Mansi is a Benchmarking Consultant and Digital Marketer with more than 15 years of cross-industry and cross-functional experience. Passionate about leveraging technology to solve business issues, she offers a novel and pragmatic perspective on digital enablement in the retail and fashion industries.

More than 80% of surveyed executives expect to adopt Digital Transformation as a management tool, according to Bain & Company's study "Management Tools & Trends 2023". As a critical enabler of Digital Transformation in the Retail, Footwear and Apparel industry, PLM is poised to play a more far-reaching role than ever before, compelling companies to tap into their PLM system's full potential – whether by capturing more information, increasing efficiency, enhancing collaboration or maximizing utilization.

As the true potential of PLM becomes apparent, companies must rethink, redesign and reconfigure their approach to PLM. Specifically, companies must work with solution providers and implementation partners to shift from a more transaction-oriented approach to a long-term outcome-oriented approach.

WHAT DOES IT MEAN TO EMPLOY AN OUTCOME-ORIENTED APPROACH?

To be outcome-oriented means to plan beyond system go-live and expand the PLM implementation roadmap to include performance indicators.

At a high level, PLM implementation success is often evaluated by key performance indicators (KPIs) that may be qualitative or quantitative in nature. Examples include improvements across business productivity, error rate, collaboration, or efficiency. While these metrics certainly provide proof of performance, substantial data gathering over an extended time period is required to analyze data with an acceptable level of confidence.

However, there is another key performance indicator that can signal implementation outcome early on: the level of PLM usage or adoption rate.

WHAT IS PLM USAGE OR ADOPTION RATE?

Typically, PLM adoption rate of an organization is defined as the percentage of total license purchasers that become active PLM users. It differs from the general definition of technology adoption rate as the organizational version considers usage relative to number of licenses purchased rather than overall usage increase. However, this formula can be misleading as it only indicates how many users adopt PLM and not how well they use it.

For instance, 100% of license purchasers could be actively utilizing only 10% of the system's capabilities. Judging from the definition above, PLM usage appears to be maximized. However, considering this value along with the level of system usage reveals that the company is far from utilizing PLM to its fullest.

To avoid the fallacy of over-simplification, Ptex Solutions embraces a more inclusive approach to PLM adoption rate. Among additional factors, the company's proprietary methodology expands adoption rate definition to include usage of system capabilities adopted at go-live versus new capabilities added and adopted post-implementation.

Since level of PLM usage varies by industry segment (retail, footwear, apparel, manufacturing, etc.), product type, company size, structure, as well as several other factors, the company emphasizes the need to review adoption data in the right context.

Understanding, monitoring and tracking this rate can enable companies to maximize the long-term benefit they gain from implementing PLM.

WHY DO ADOPTION RATES MATTER?

When a PLM solution's adoption rate declines, it is a strong signal of a potential performance drop ahead.

Case in point: A leading retailer who adopted PLM in the early 2000s should have theoretically achieved a head-start vis-à-vis the industry in terms of realizing efficiency and financial gains from the system. Instead, the company saw significantly reduced system usage due to employee turnover accompanied by loss of knowledge transfer. As a system that was intended to be largely automated became increasingly manual, decline in usage was followed by a decline in system effectiveness and user satisfaction levels. Fast forward to 2022, the company's PLM system functioned more as a document management system and was only used because it was mandatory due to integration with their ERP system. Ultimately, the company ended up replacing their system as it became a hindrance to productivity.

Had the company sought guidance from a PLM implementation partner or advisor as soon as they noticed a trend toward declining usage, the story might have followed a different trajectory. This is not to say that PLM systems should not be upgraded to the latest version, they certainly should, but PLM ROI can be maximized only when the maximum number of users operate the system to its full capacity.

For example, another early adopter who implemented PDM in their company more than 25 years ago is on its third

generational upgrade. The company began its journey with PDM, then moved to on-premise PLM and is now in the process of implementing MT Cloud PLM. Every 7-8 years, the company upgrades its system to keep pace with the latest technology trends as well as changing business dynamics. Since employee turnover is a natural part of business, scheduling timely upgrades and periodic training sessions with implementation partners ensures that benefits derived from PLM continue to increase over time.

As a side benefit, adoption rate can also be a PLM implementation partner selection criterion. To find the right implementation partner, ask how they plan to continually engage with your company beyond system go-live. The ideal partner will present a roadmap that incorporates processes designed to maintain or improve PLM adoption rate.

WHAT IS CONSIDERED A GOOD ADOPTION RATE?

To be relevant, target adoption rate must be reset every year to realign with organizational goals for the year ahead. While companies aim to achieve and maintain a 100% adoption rate, it is not a realistic expectation as the number will fluctuate due to an ever-changing environment.

A more effective tactic to determine a good adoption rate level is benchmarking. One of the most powerful and underutilized management tools, benchmarking, enables companies to compare performance vis-à-vis others and identify potential performance gaps. Adding context around adoption data not only helps answer the adoption rate benchmark question, but also helps decode the best practices that drive them.

Benchmarking is hardly a new concept in the retail, footwear, apparel and manufacturing companies. In their book "Benchmarking for Best Practices: Winning Through Innovative Adaptation", authors Christopher E. Bogan and Michael J. English narrate: "In the 1800s, British textile mills were absolutely the best in the world. In contrast, American mills were still in their infancy when it came to producing all types of textiles. Francis Lowell, a New England industrialist, set out to change this situation by upgrading business technology in the United States. Lowell travelled to England, where he studied the manufacturing techniques and industrial design of the best British mill factories. He saw that the British plants had much more sophisticated equipment, but the British plant layouts did not effectively utilise labor. In short, there was room for improvement.

In 1815, Francis Lowell built a factory that employed much of the technology in the British plants but was designed to be much less labor-intensive than the British facilities. It was a splendid example of innovative adaptation.

In 1820, this textile mill center became known as Lowell, Massachusetts. By 1840, just two decades later, Lowell had grown to become the second largest city in America and the largest manufacturing complex in the country. This dynamic growth was largely fueled by "one man's vision and his ability to creatively adapt practices observed in the world's best mills."

HOW CAN RETAIL, FOOTWEAR AND APPAREL COMPANIES BENCHMARK THEIR ADOPTION RATE?

Data harvested from benchmarking initiatives may be qualitative such as the example above or quantitative depending on whether the focus is on capturing performance, process or strategy benchmarks.

Companies can conduct internal or external benchmarking exercises to find relevant, meaningful and actionable information:

- Internal benchmarking: refers to benchmarking within an organization. This exercise could be conducted across brands or departments to identify the most effective users of PLM.

- External benchmarking: refers to benchmarking vis-à-vis a select class of companies from within or outside the industry.

Whether benchmarking internally or externally, identifying and analyzing those users or companies that are ahead of the industry on the PLM learning curve can provide invaluable insights for harnessing the power of PLM as well as avoiding potential pitfalls. While there are numerous ways to cut, slice and dice benchmarking data to cull meaningful insights, even simply monitoring high-level usage stats on an on-going basis enables companies ensure PLM users continue to optimize system benefit.

For example, every year, the company highlighted in the earlier example will be working with Ptex to conduct a PLM audit by performing an internal benchmarking exercise. This exercise will culminate in the creation of an annual PLM adoption plan that will help the company identify new avenues to use their system.

Beyond adoption rate, insights gleaned from internal or external benchmarking can be instrumental for corporate goal setting, strategic decision-making or capability-building.

IN CONCLUSION...

From an on-premise technology solution used to streamline product design and development processes, PLM has evolved into a multi-tenant cloud-based tool with the power to significantly influence organizational Digital Transformation. However, PLM can only do so if it is adopted and leveraged to its full potential across the organization.

At the end of the day, it is not just about how well a PLM solution is designed and developed, but also about how well it is implemented. Using a comprehensively defined PLM adoption rate as a critical performance indicator and benchmarking it against best-in-class users or organizations enables businesses to build an outcome-driven PLM approach that is informed, forward-looking, responsive, and adaptable.

UNLOCKING THE VALUE OF DIGITAL PRODUCTS

DIGITAL ASSETS NOW OCCUPY AN IMPORTANT POSITION IN THE PRODUCT LIFECYCLE: THEY ARE THE ENGINES FOR SMART, AGILE, AND PROACTIVE DECISION-MAKING. BUT FULFILLING THAT POTENTIAL MEANS MAKING SURE THAT EVERYONE WHO NEEDS TO MAKE A CREATIVE OR COMMERCIAL CHOICE HAS EQUAL ACCESS TO DIGITAL PRODUCTS.

BRIAN LINDAUER
FOUNDER & CTO
VIBEIQ

Brian Lindauer is an executive leader possessing combination of product strategy, product management, and deep technical software development experience. He has held product leadership roles in both small start up and large company environments, crafting strategy & leading technology development for both on-premise and cloud based offerings.

Digital transformation has become a major focus for companies across all industries in recent years. With the rise of digital technologies, businesses are recognizing the need to invest in new processes and tools that enable them to operate more efficiently, reduce costs, and improve outcomes.

One area of digital transformation that is gaining significant attention is Digital Product Creation (DPC). This refers to the process of creating and managing digital twins of physical products using software tools and workflows. Once they exist, these digital twins can transform the whole go-to-market of a given product. In addition to replacing physical prototypes and samples, the same digital assets can fuel a range of different decision-making processes – all the way up and downstream.

Given the scale of the transformation it entails, and the number of stakeholders it touches, the shift from physical to digital products has created new challenges for brands that they must navigate to stay competitive. While the digital age has enabled brands to create highly detailed and visually stunning digital products, and to use them for a wide spectrum of different purposes, it has also created barriers to accessibility that make it challenging for everyone in the organization to access those digital products and extract value from them for their particular workflows. A digital twin of a garment is only valuable if it can be made available everywhere its physical counterpart might be needed.

One of the biggest challenges brands face, then, is providing access to digital products for all the roles that need them. While DPC tools have made it possible to digitize their full assortment (or whatever slice of it they have chosen to prioritize), interacting with the resulting assets often requires specialized software and skills that are not available to everyone in the organization. This can make it difficult for certain roles, such as merchandising and sales, to access detailed visualizations of products, which they need to make informed decisions.

This is where dead-ends can be created in a digital transformation journey. Valuable data and assets are created, but not universally distributed – limiting their value and leading to exactly the sort of information silo-ing that digital transformation is intended to avoid.

To help address this challenge, brands have found themselves increasingly dependent on visual documentation such as PowerPoint and collaborative, cloud-based whiteboards such as Miro and Mural – taking static shots of 3D garments, shoes, and accessories, and adding them to boards that are designed to capture the visual identity of a product as well as the data behind it.

These document-based solutions, while highly collaborative, accessible and easy to use, come with a number of issues. Each of which has the potential to terminate in yet another data dead-end.

Firstly, the documents are incredibly time-consuming to create, requiring a large amount of manual authoring, hunting for accurate information, and copy & pasting of images. Unlike a live 3D representation of a garment, these snapshots are difficult to assemble, convoluted to share – and they also represent a new collection of data that is not automatically connected to anything else.

Because there is no connection between the tools used for collaboration (sheets, boards, and slides) and the systems that hold essential product data, such as PLM, ERP, DAM, and BI, which could be considered a "single source," manually authored documents containing product data and imagery will quickly become outdated, rendering them inaccurate.

As a result, any investment in visual presentations is a significant undertaking, and one that has some significant drawbacks when compared to collaboration fueled by a true digital twin. Extracting visual representations and product data from centralized solutions and putting them into disconnected repositories must be done with care, and only once data is relatively stable. Once shared, these documents have a limited shelf life, and often contain out of date information. Unfortunately, this has a significant impact on the agility and accuracy of teams working to bring a product line to market.

Clearly, a better solution is needed. Wider access to embedded 3D visualizations will certainly help, but educating every stakeholder on how to use and get the most out of digital assets is not likely to be a practical solution.

Ideally, brands would have a platform that enables them to quickly produce digital, visual presentations that showcase their product offering, including relevant data from PLM, historical sales from BI, and other structured information needed to make the right decisions – all of which would remain connected to the centralized source of information that underpins it all. All the visibility and collaboration, with none of the data dead-ends.

These presentations would be able to leverage either 2D or 3D representations of products, without requiring special technology or training. Viewing 3D models would not require any sort of proprietary software, and the file sizes would be optimized for quick download & global accessibility.

Unlike the documents we know today, this new solution would have the ability to integrate with key enterprise systems, so that as new data is created, or existing data is updated, it is reflected in all relevant presentations. When presentations are shared with stakeholders, the information would be up to date and trustworthy, greatly impacting the accuracy of decisions made.

With this new form of collaborative visualization solution, roles such as sales and merchandising would be able to seamlessly participate in a digital workflow, despite not being closely connected to the DPC process itself.

Fortunately, a solution like this does exist.

Based on the challenges described above, the team at VibeIQ has developed a suite of collaborative productivity apps specifically made for companies that design, manufacture or sell products.

Unlike traditional documents, sheets, slides, and whiteboards, VibeIQ's Plan, Showcase, Board, and Showroom applications maintain associativity with your product's digital assets and related product data.

VibeIQ's cloud-based Software-as-a-Service (SaaS) platform has the ability to manage product data and digital assets directly or seamlessly integrate with your existing enterprise systems such as digital asset management (DAM), product lifecycle management (PLM), and other key enterprise systems.

Over the past several years, brands who have deployed VibeIQ's applications have progressed towards their digital transformation goals by making their digital product assets and related business data available to the roles who most need that information. Product based workflows such as line planning, milestone reviews, channel adoption, vendor collaboration, and sell-in have been optimized by ensuring accuracy, reducing effort, and enabling iterative feedback loops.

Overall, the shift to digital product creation is presenting new challenges and opportunities for brands across all industries – but especially for fashion and footwear, where complex product mixes, long timelines, and difficult trend forecasting conspire to make the go-to-market process uniquely difficult.

By leveraging solutions like VibeIQ, brands can unlock the full potential of DPC and realize the benefits of digital transformation, without running the risk of leaving behind other departments, colleagues, and partners who also stand to benefit from the value of that new way of working. These benefits include increased agility, reduced costs, and improved outcomes, as well as new opportunities for innovation and growth.

As the importance of digital transformation continues to grow, it is likely that we will see increasing investment in DPC and other digital workflows. This investment will be critical for companies looking to remain competitive in an increasingly digital world, and provided they take care to avoid data dead-ends, this journey will enable them to unlock new opportunities for innovation and growth.

vibeiq

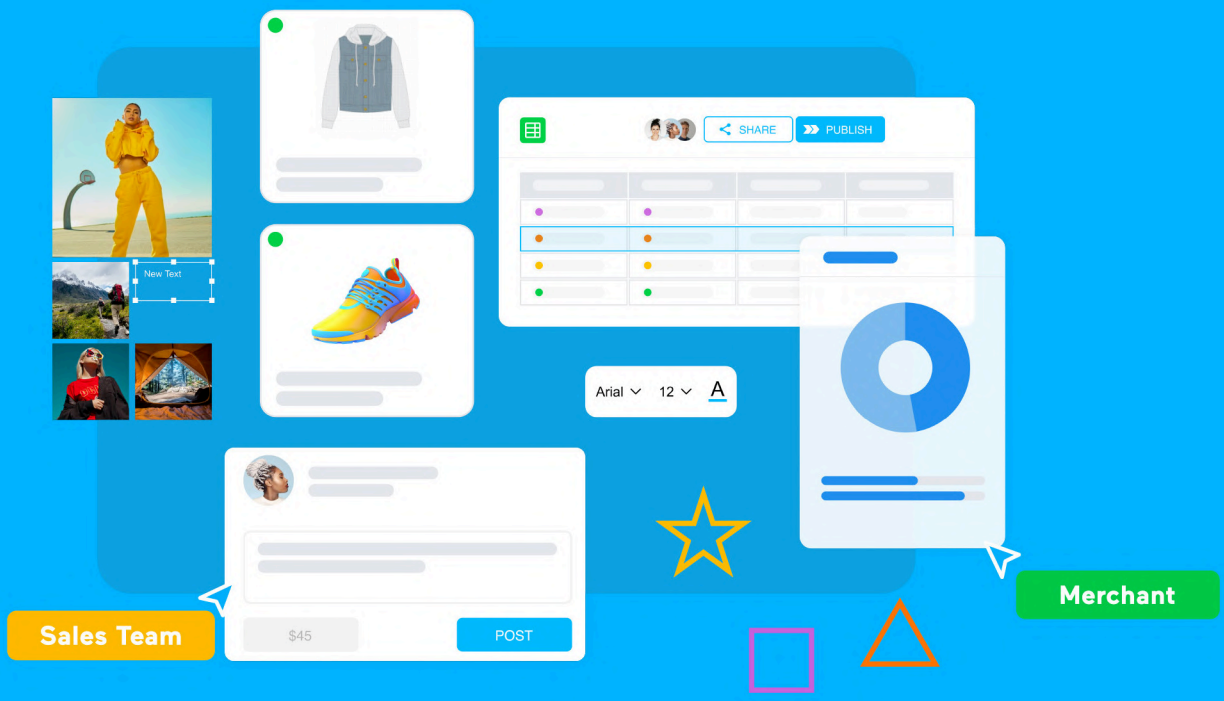
Ideate. Visualize. Collaborate.

Designer

Developer

The Digital Workspace for Product Teams

With Vibe IQ's productivity suite, brands redefine how they plan, design, and sell product lines using highly visual and collaborative documents connected to product data and digital assets.



PI
PRODUCT INNOVATION APPAREL

Join us at PI Apparel New York (June) and PI Merchandising Planning New York (October)

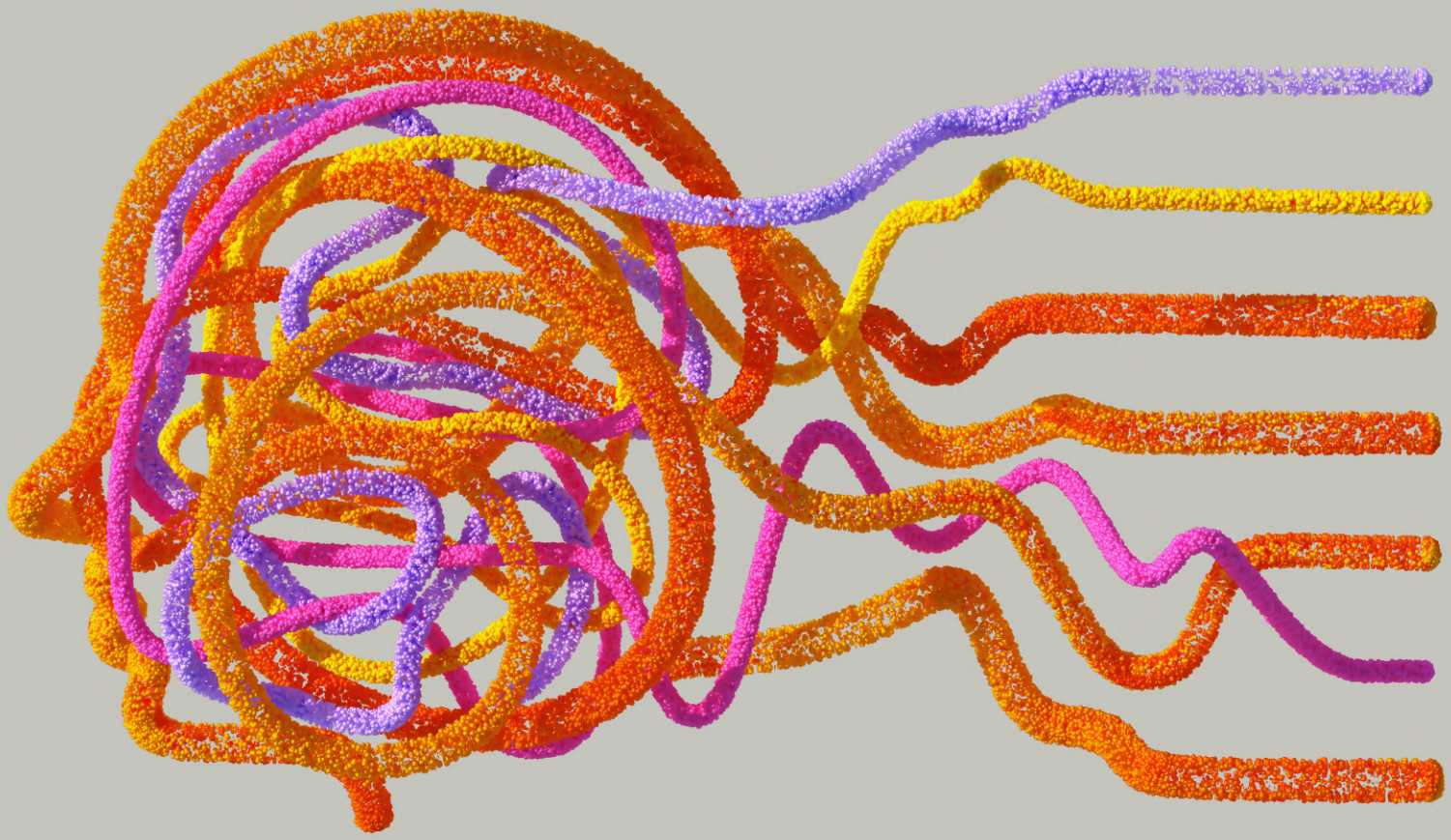
Contact us at Sales@vibeiq.com for more info and to schedule a meeting

www.vibeiq.com

vibeiq

IT PAYS TO GET READY FOR GENERATIVE AI - SOONER RATHER THAN LATER

INSTEAD OF WAITING FOR TECHNOLOGY VENDORS TO INTRODUCE GENERATIVE CAPABILITIES, IT WILL BE VITAL FOR DESIGNERS AND DEVELOPERS TO DEEPEN THEIR SKILLS, EXPAND THEIR TOOLSETS, AND PREPARE FOR A NEAR-TERM FUTURE WHERE THEIR CREATIVE AND COMMERCIAL TALENTS ARE SUPPORTED BY AI.



JONATHAN MCCORMACK

SOFTWARE ENGINEERING DIRECTOR

COATS DIGITAL

Jonathan is a seasoned technology leader with a strong background in software engineering and a passion for driving innovation. As the Director of Software Engineering at Coats Digital, he leads a global organisation of highly skilled engineers in developing cutting-edge solutions to enhance the company's digital ecosystem. With 12+ years of experience in the software industry, Jonathan has a proven track record of creating new SaaS experiences and had been instrumental in helping Coats Digital successfully launch VisionPLM, GSDCost, FastReactFabric and the new FastReactPlan solution. He joined Coats in 2012, and has helped merge the disparate processes and technologies involved across multiple global teams during the acquisition of GSD, Fast React Systems and ThreadSol.

In the ever-evolving realm of apparel, keeping pace with the latest innovations is vital for competitiveness and success. Our industry, along with others, could well find itself on the brink of a revolution – one powered by the rapidly emerging potential of generative AI.

Advancements in this technology have come thick and fast this year with businesses using generative AIs to write code, create art and author content all at speeds never seen before.

ChatGPT pioneered the way at the start of the year with GPT-3.5, and technology giants have clearly shifted their strategies to either compete or adopt. Microsoft is bringing ChatGPT into Office via CoPilot, and Google has just launched Bard alongside integration with G-Suite – and Adobe and Nvidia have shared similar commitments to the technology.

As consumers we undoubtedly benefit from these advancements – our creative work should become easier as more tools arrive that try to understand our imaginations and turn this into reality.

We use these tools by speaking to them in human language. We prompt the tools to create, by describing our needs as we might do to a colleague or intern. We share little details that might help the AI work and think as we do, then we follow up and iterate until we are satisfied.

You can find businesses using these tools today as the barrier to entry is surprisingly low. If you can explain the solution or problem in a short prompt, then they will happily assist you in your creation.

But these tools only scratch the surface of business benefits. The next generation of generative AIs will be able to identify improvements to development processes, help create a range plan from previous seasons, will be able to contribute to meetings and output just like a human teammate. To enable this, these tools will to be prompted, and that prompt will need to include your business data.

For apparel enterprises to fully capitalise on the immense possibilities offered by generative AI, a critical factor comes into play: Product Lifecycle Management (PLM). Without a centralised hub of information and a unified source of truth, harnessing the full benefits of generative AI becomes a daunting challenge.

In this fast-paced environment, where AI advances are coming rapidly, if apparel businesses fail to embrace PLM, they risk losing their future competitive edge by being unable to adopt further generative AI technologies.

Now is the time to leave behind disconnected spreadsheets and email threads, and now is the time to adopt PLM. Traditional Product Lifecycle Management

benefits are well known and studied at this point and there have always been compelling reasons to adopt it. Finding the right provider was always important and the depth of features is a main consideration in finding the perfect PLM.

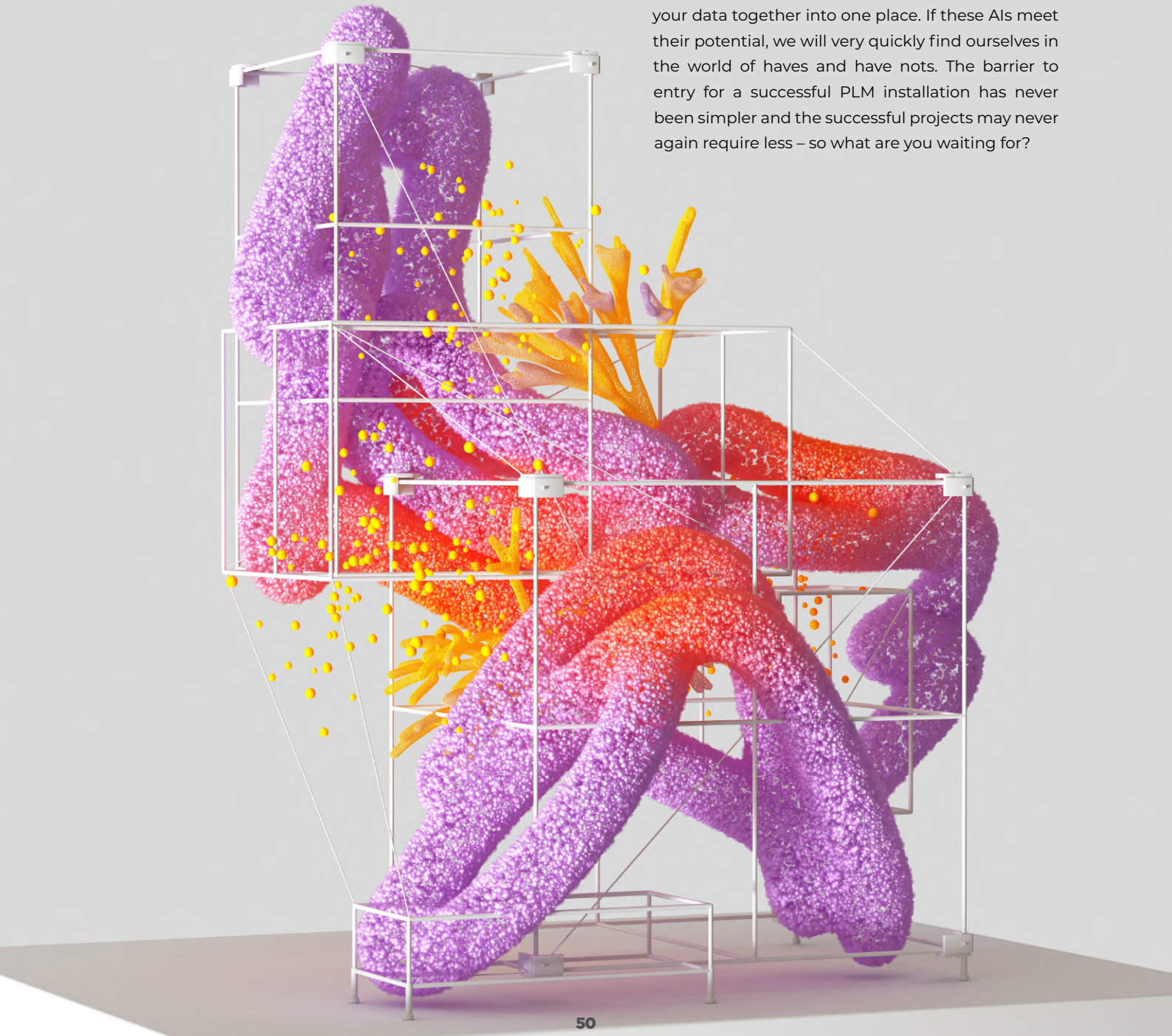
Today however, looking forward to this possible future with Generative AIs, I argue that businesses new to PLM need to look equally (if not more so) at time to install.

How we define success with PLM may be about to change. Generative AIs will need data repositories to draw out new insights from our single source of truth, so the sooner we start building that source the better.

Speed of install could then perhaps be considered over roadmaps and future enhancements. These new AI tools are unlikely to be exclusively embedded in existing software. Many of the Generative AI tools are agnostic and run in web browsers or small executables. Some even find themselves as Discord extensions.

We do not need to wait for the biggest PLM vendors to embed these AI tools before starting. When the next generation of generative AI arrives to affect our industry, we should already know how to use them.

Innovation is happening fast. Businesses creating new tools are looking at the fast and broadest ways to bring AI technology to you. If you have seen or used these new Generative AIs and think more advancements are on the horizon, do not wait until it is too late to bring your data together into one place. If these AIs meet their potential, we will very quickly find ourselves in the world of haves and have nots. The barrier to entry for a successful PLM installation has never been simpler and the successful projects may never again require less – so what are you waiting for?



FROM A THOUSAND TO A BILLION WORDS - THE UNTAPPED VALUE OF 3D

THE POWER OF 3D TO BRING IDEAS TO LIFE, VISUALLY, IS PROVEN. BUT HOW MUCH MORE POSSIBILITY SPACE CAN FASHION UNLOCK BY TREATING 3D ASSETS AS THE SOURCE OF PRODUCT DATA?

MARK CHARLTON

TECHNICAL DESIGN PRODUCT LEADER

Mark Charlton is an inspiring apparel supply chain leader with proven successes leading organizational and process change to unlock efficiencies across manufacture, retail and wholesale corporations.

If a picture is worth a thousand words, then what is a rotatable, accurate 3D asset that fully represents the physical product worth? A million? A billion?

I am writing this piece to inspire a vision of what I believe is possible for digital product creation (DPC) in apparel and footwear - not just a visual output, but a true representation of a given product that anyone can extract value from.

"A picture is worth a thousand words" is an adage across languages meaning that **complex and sometimes multiple ideas can be conveyed by a single still image, which translates its meaning or essence more effectively than a mere verbal description**.

We often use pictures in PLM tech packs as the audience (the factory) don't usually speak English as their primary language, therefore pictures are less open to interpretation than text.

Pictures, however, are two-dimensional and interpretation does still exist, hence the apparel product creation process requiring multiple prototypes prior to approval. Even where brands have switched to 3D design and collaboration, there is often still a gap between the output of those processes and the final physical result.

Or, to put it another way, condensing a 3D workflow down to a 2D render and some accompanying text provides a much weaker decision-making tool than the full 3D asset itself.

I use the term data-embedded when I'm talking about an ideal 3D garment because, instead of a picture of a jacket with all the accompanying text detailing the fabric data (mill, item number, weight, composition, cuttable width, price, etc) - the data that is usually documented and/or referenced via the BOM (bill of materials) - this data should be embedded within the 3D asset if fashion is going to move to truly digital-native workflows.

As an example: to create a realistic-looking 3D asset, fabric and trim libraries are required. Ideally these fabric libraries are linked to the actual physical fabric properties, not only for a realistic visual and drape, but also for a realistic transfer of accompanying data.

Then, instead of sending a BOM to a factory to advise them where to purchase the fabrics and how to detail care and composition on the care and content labels, this information is available once the material/s are selected during the design process. The data is anchored to the asset, and vice versa.

This way, if the fabrics change in the design process, so do the fabrics in the 3D asset, and so does the data embedded in that asset.

Expand this concept to trims: instead of detailing 7 buttons to be used on the centre placket, 2 on each cuff and 1 spare on the BOM, and manually indicating where these buttons are purchased from, item numbers, costs etc., placements and quantities with all the associated embedded data should be clearly visible and accessed via the 3D asset itself.

The vision here is not to weigh 3D styles down with unnecessary admin and information, but rather for the 3D styles to serve as their own product definitions - containing everything needed to bring that product to life, not just visually, but across materials, trims, cutting, sewing, and so on.

Let's continue to expand this concept to 2D pattern data and sizing information. Again, to create the 3D asset an accurate 2D pattern is required, and from this 2D pattern key POMs (points of measure) can be obtained.

Size charts are currently a part of any tech pack, detailing those points of measure and what the finished garment should measure at these points. This is achieved via the 2D pattern, but again this data can embedded within the 3D asset.

Graded size information (the difference between each size) is also included in the size specification; this could easily be replaced by including a graded 2D pattern into the 3D asset and therefore creating graded 3D assets.

Fabric utilization is another component of a BOM along with the costing process, however with a graded pattern, fabric information and simple integration to marker making software, creating multiple sized markers for costing purposes is possible.

Integrate again to an ERP system for accurate quantities by size / colour information, then the fabric utilisation and costs can reflect actual values, versus being based on average buy ratios.

What if repeat orders have a higher ratio of smaller sizes than the originally planned costed average cut ratio? Then the fabric utilisation is less. Typically fabric is at least 50% of the cost price of apparel. Understanding actuals vs averages can be possible via the data embedded 3D asset, and the value of doing things this way could be huge.

Another component of the cost of apparel, of course, is “make”: how much does the garment cost to put together? This process is just math, based on time and complexity of manufacturing operations. Time is calculated via seam type, length of seam and complexity / difficulty. Some operations are automated and time values are easily calculated, some operations are manual.

However the apparel industry has decades of time study data to understand time values of manual operations. SMVs (standard minute values) are created per garment: take how many minutes it takes to sew each seam and the garment in total, multiply the garment total minutes by the labor rate and this creates a “make” cost per garment.

Of course seam information, length of seam, even stitch density (critical for understanding thread usage) are all available via the 3D asset. And as a result, accurate costing and manufacturing instructions are both things that can be unlocked by treating the 3D asset as the product definition - not just a thing to look at and interpret, but as a direct driver for factory setup and line balancing.

What do I mean by those terms? Factory set up and line balancing, simply explained, are the order of operations for an assembly line and how many of each operation per production line are required. For example, if it takes twice as long to sew the underarm and side seam as it does to attach the sleeve to the body, then you would require 2 of these operations for every 1 sleeve attach on the production line to balance the flow of production through the line without inefficiency.

Once the 3D asset has progressed to this stage, one could argue this is more valuable than a physical sample. As a physical sample wouldn’t have all the associated data. And as samples evolve and change, understanding the impact of change on cost, both fabric / trim and make in real time, makes the 3D asset hugely valuable - much more so than a representation of a physical sample.

This would also bring the “creator” and the “manufacturer” closer together as the “creator” would essentially be creating a fully manufacturable digital twin.

When we progress to this stage of apparel DPC I think we will refer to the physical sample as the physical twin versus the current model of focusing on the physical with a digital “twin” recreation. This subtle but intentional switch puts the onus on the accuracy of the 3D asset, creating, manufacturing and costing in the digital environment with easy access to all the associated real time data.

If it’s painted right, a 3D picture has the potential to be worth at least a billion words!

HOW CAN BRANDS POWER THROUGH THE RECESSION WITH THE HELP OF AI AND DATA ANALYTICS?

UNCERTAINTY AND HESITATION ARE CURRENTLY INFLUENCING HOW FASHION ORGANISATIONS GO TO MARKET, WITH A LOT OF PLANNING BEING BASED ON INTUITION RATHER THAN INSIGHT. DISCOVER HOW DATA SCIENCE AND AI CAN HELP ORIENT YOUR BRAND AND POWER SMART DECISION-MAKING IN A HISTORICALLY DIFFICULT CLIMATE.

MACARENA BLANCO
CONTENT MANAGER, HEURITECH

Macarena Blanco serves as Content Manager for Heuritech - a demand forecasting company that leverages market & consumer data to improve sell-through of the largest fashion and sportswear companies worldwide.

The fashion industry has had its fair share of hardships in the past. It was a challenging end of the year in 2021, after spending almost all their resources to successfully emerge from the aftermath of a global pandemic.

According to McKinsey, the industry continued its strong performance in early 2022, with 13% revenue growth in the year's first half. However, the effects of a fragile market are weighing heavy on fashion leaders as they look forward to the rest of 2023.

Just as they seemed to get back on their feet, an impending economic slowdown, heavily influenced by geopolitical conditions, began to cripple its way into the global scenario. Some countries are facing a fearful forecast for the foreseeable future that seems rather bleak, with a recession that may be looming.

Inflation in 2022 reached its highest level in at least 40 years in Europe and the United States. In the BoF-McKinsey State of Fashion 2023 Survey, 85% of fashion executives predict inflation will continue to challenge the market next year.

Furthermore, a shaking economic situation invariably impacts consumer behaviour.

With persistent inflation, many consumers are tightening their purse strings and rethinking their buying behaviours. As consumers delve into the harsh decision of cutting down spending, they start with what may seem to some as nonessential spending. **One of the primary victims? The apparel industry.**

Brands face the challenge of a restricted consumer. **Thus fashion executives need to not only persuade consumers to buy, but the biggest challenge would be to predict what they will purchase to avoid overstocking successfully.**

PLANNING WITHIN A VOLATILE SCENARIO

A decreasing or stagnant economy threatens retailers in many ways, for instance, supply chain delays, inflation, and high-interest rates. **Excess inventory isn't a new problem, yet, the issue is set to become an even more pressing concern as the economy worsens.**

Source: Heuritech.

First, the global pandemic caused disruptions along the supply chain, challenging retailers to manufacture, ship and even get hold of products to sell. However, consumers stuck at home seeking some entertainment found themselves with more free time to shop. Still, unfortunately, many retailers fell short of delivery due to a shortage of manufacturing and delivery services.

When pandemic restrictions softened, fashion leaders were hopeful the spending sprees would continue; thus, **retailers started overstocking inventory in a bid to prevent stockouts they suffered the year prior.**

And then, the global economic slowdown started to loom in, heavily decreasing buyer intention, and retailers were stuck with unsold inventory, resulting in not only monetary losses but also threatening their whole product planning and supply chain.

With such fluctuating circumstances, it is easy to understand why even top players in the industry are victims of faulty demand planning.

To stay profitable in this challenging time, many brands are choosing to increase their prices. However, this can result in losing customers overwhelmed by increased electricity and housing bills.

Consumers already feel threatened by rising prices in all sectors, and fashion brands doing the same risk losing valuable loyal consumers. **For brands to stay on the good side of their consumers, solutions must be found from the inside.**

CATERED TO DISTINCTIVE MARKETS

Some retailers opt for slashing prices to eliminate stuck inventory to control inflation. However, as proven before, the safer way towards profitability is to sell as much as possible at full price.

Ideally, brands would have space for more “risky” pieces allowing some uncertainty if they would be sold, but with an economy that most likely will continue to stagnate, they don’t have that luxury anymore. **Brands must ensure their assortment is highly curated and catered to their consumer.**

To mitigate risks, retailers aim to simplify assortments, only committing to pieces that have proven to be their best-sellers in the past. However, only committing to certain styles season after season is likewise risky, as consumers often seek new styles and more trendy

Source: Heuritech.

pieces. Only adhering to pieces proven successful in the past season threatens a business to go obsolete with the rapid-changing trend cycle.

A refined assortment is the key to profitability in an age of uncertainty.

TECHNOLOGY AS A COMPASS

In this context, understandably, fashion executives are weary of taking risks with such increased economic volatility. Furthermore, anticipating an economic slowdown makes adapting to unpredictable consumer demand and lower purchasing power even more challenging. **Careful planning will be a key success factor in navigating turbulent conditions ahead.**

According to BoF, less trendy or "sexy" tech services are stealing the spotlight this year as retailers opt for more practical solutions. Even if hype-driven technologies such as NFTs and Metaverse were on top last year, the main focus has shifted back to a more practical angle: to anticipate how consumers will shop. Especially technologies that let retailers make better forecasts and tailor their assortments to avoid overstock.

The technology in which fashion leaders are betting this year? Artificial intelligence.

One successful approach retailers can embrace is to rely on data to help them make sound business decisions catering to specific pain points along the supply chain.

AI tools can provide significantly more accurate forecasts to predict changes in consumer demand. These algorithms can automatically recognise patterns, identify complicated relationships in large datasets and capture signals for demand fluctuation.

It became crucial to adapt to the present and plan for the future. Predictive analytics uses historical data to identify future patterns using statistics and algorithms, from predicting consumer behaviour to demand. Demand forecasting provides an estimation of the demand that will occur in the future for a product and allows supply chain managers to tailor their product assortments better, avoiding overstock.

Basing decisions on intuition is not a luxury available during economic turbulence. However, when an algorithm forecasts an accurate vision of future consumer behaviour, it becomes much easier to optimise the assortment mix while avoiding false prediction mistakes. Furthermore, being backed up by data gives executives the confidence to take more "risks" and go for trendier pieces than relying solely on intuition. Customer data, always essential, now becomes even more crucial.

Source: Heuritech.

Data insights allow retailers to curate the assortment for their target customers better. If the data shows that a specific colour will grow or that the interest in a pattern will decrease compared to last season, it gives retailers a more straightforward path to follow while planning their assortments. This reduces the chances of mistakenly overstocking a product that won't sell.

There are multiple uses of data for demand planning. With artificial intelligence, fashion trends can be predicted for clothing collections in upcoming seasons, including colours, fabrics, silhouettes, patterns, styles, and more. The unprecedented advantage of having a clear vision of their present and future market is becoming the key to success in a deteriorating global economic situation.

In conclusion, by harnessing data and embracing AI-driven insights, fashion brands can enhance their product development processes and elevate their design creativity, resulting in on-trend garments that successfully cater to the preferences of their customers and allows them to navigate the stormy waters of the industry.

Furthermore, AI can be utilised to optimise inventory management, thereby minimising the likelihood of overstock or understock situations and ultimately leading to greater operational efficiency and cost savings.

Given the challenging economic downturn, the year ahead will be difficult to navigate. However, it has been proven before those fashion leaders who source technology as a tool to understand their consumers better and anticipate their behaviour have a significant advantage over competitors. **It is different fronting a storm with guidance, and artificial intelligence provides that by becoming the compass.**

KHAITE
by Hanna Tveite

WILL AI BRING POSITIVE CHANGE TO PLM?

IT'S NO LONGER A QUESTION OF IF AI WILL BECOME AN INTEGRAL PART OF ENTERPRISE SYSTEMS LIKE PLM, BUT A QUESTION OF WHEN AND HOW THE POSITIVE IMPACTS WILL BE REALISED.

MARK HARROP
CEO & FOUNDER
WHICHPLM ADVISORY

As a technology advisor to the fashion industry, Mark has worked for more than four decades to help the world's best known retailers, brands and manufacturers achieve efficiency savings across their entire supply chain through informed technology investments.

AI & ML POLITICS

Before I get into the subject matter, I know that there's a lot of news and hype, both negative and positive, on the implications of AI. In a lot of ways, even though the technologies themselves are new - at least in their current form - this isn't a new argument. There are always good and bad ways we use any software or platform. Just consider how we all use the internet and the vast number of cloud technologies in our everyday lives, for a huge range of different purposes.

I agree we need to be cautious when implementing new technologies that have the potential to be as disruptive as AI does, but provided we can trust the data sources we use to train AI models, the potential risks to the fashion industry will be much smaller than what is being discussed in the news today.

Remember, too, that we all already use AI most days in our lives; every time we use **Google Lens, Maps, Photos, YouTube, Assistant, Gmail,** and **Cloud**, we all use AI to find answers to daily questions, receive content recommendations, tweak images, and converse with an assistant. As another example: finding your routes to a new location or your most efficient way home after a hard day's work, those recommended routes and maps are coming from the cloud, and a complex model is measuring traffic flows and conditions, warning of any significant hold-ups on the highway/motorways, providing multiple route choices and supporting information on where we can charge our new electric cars... or where can find restaurants and other facilities along your journeys.

Whether we actively realise it or not, we are happily using AI daily to streamline our personal lives, so why not embrace the same idea at work? And more specifically, why not find ways to bring the best elements of AI into PLM to improve our design, development, and manufacturing workflows by surfacing new ideas, smoothing out manual work, and much more?

This article takes that next step as an inevitability, since Microsoft, Google, and other technology and productivity giants are already carving out a new, AI-assisted future of work that fashion technology vendors will surely follow. So I want to explore how AI (and its stablemate, Machine Learning (ML)) might help fashion brands and their value-chain partners to automate tasks in PLM's extended ecosystem and achieve greater efficiency, quality improvements, sustainability, and cost savings.

When we brought PLM to the market over 20 years ago, one of the leading value propositions was savings in time and non-value-added administration tasks. As a work-study engineer, I estimated that around 25% of a person's working day is spent locating information and filling out electronic views with repetitive common data. And although our systems have become richer and better-integrated since, that balance has not really changed - and in fact things might even have regressed, since we deal with so much more data in any given day than we did two decades ago.

Just imagine the potential size of the benefits if we could reduce this non-valuable time by 50% or even more across the entire workforce, and then revert the time to value-added purposes. Creativity, profitability, job satisfaction and more could all see a significant boost from sensitive enterprise-level adoption of AI.

DEFINING THE DIFFERENT COMPONENTS

Data science, data mining, machine learning, deep learning, and artificial intelligence are the principal terms you'll hear being used in any conversation around automation, efficiency, and process transformation today. They are related, but it's useful to understand how they differ from one another, too.

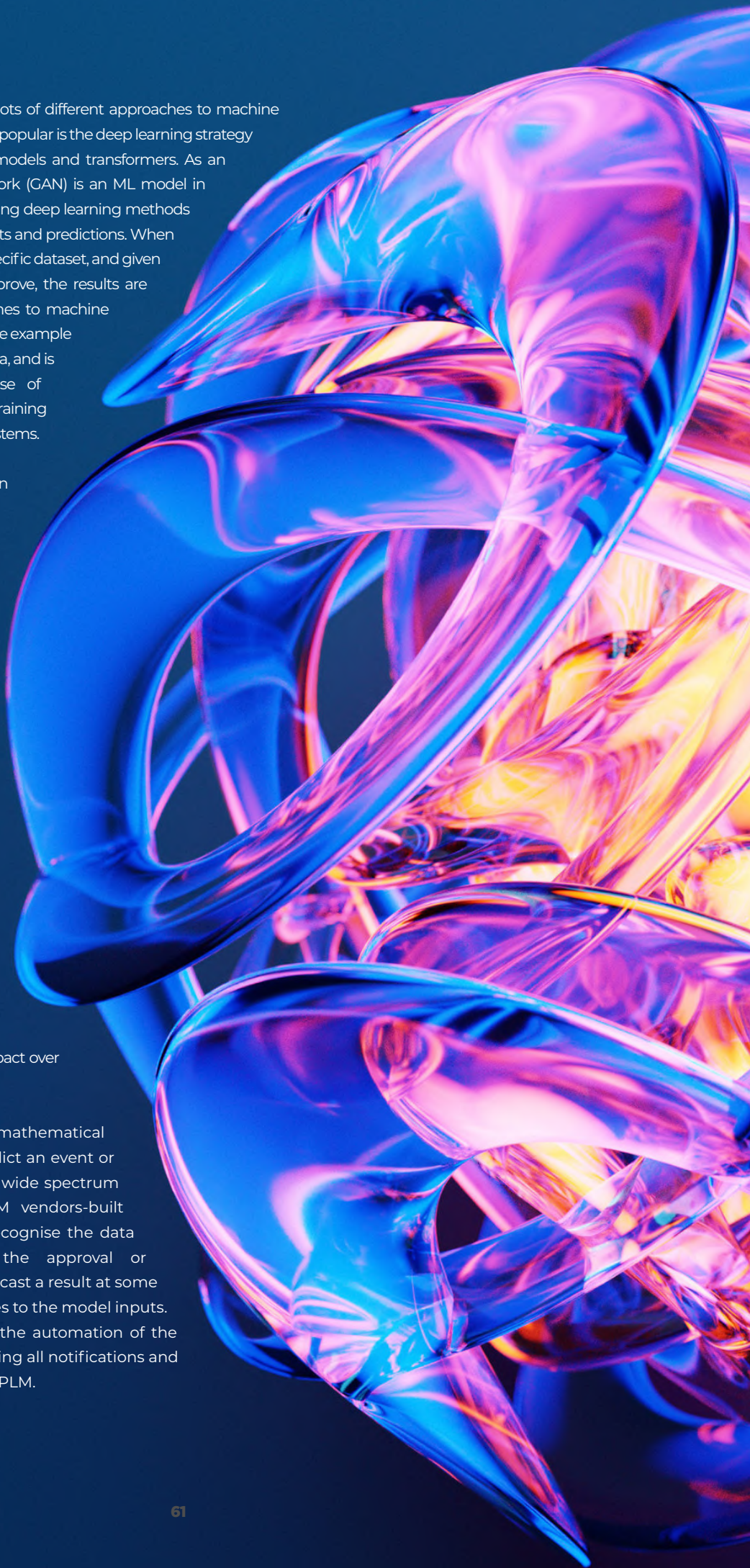
DATA SCIENCE - the broad scientific study that focuses on making sense of data. Data science is a general umbrella term that links all activities and technologies that help build new models and supporting systems. Consider recommendation systems used to provide personalised suggestions to customers based on their search history. If, say, one customer searches for a blue pair of trousers and the other looks for trouser belts, there's a good chance both customers will also be interested in purchasing each other's choices. This is a very broad discipline, and also one of fashion's fastest-evolving roles, but in essence it's concerned with the architecture of information.

DATA MINING is commonly a part of the data science pipeline. Data mining focuses on techniques and tools used to search out patterns in the data, previously unknown and make data more usable for analysis. These patterns can be used to support trends or demands in fashion products, when they're applied to datasets from eCommerce channels and from the web, or they can be used to transform efficiency when they're applied to in-house information.

MACHINE LEARNING - there are lots of different approaches to machine learning, but the most current and most popular is the deep learning strategy that underlies today's large language models and transformers. As an example, a generative adversarial network (GAN) is an ML model in which two neural networks compete using deep learning methods to become more accurate in their outputs and predictions. When these are paired with a large, domain-specific dataset, and given the time and capacity to train and improve, the results are dramatically better than prior approaches to machine learning. The fashion MNIST dataset is one example of this kind of single-domain training data, and is an extensive, freely available database of fashion images commonly used for training and testing various machine learning systems.

ARTIFICIAL INTELLIGENCE - an Umbrella term meaning different things to different people; it's difficult to define because it encompasses a wide range of phenomena and concepts, from simple mathematical algorithms that recognise patterns in data sets to complex systems capable of intelligent behaviour such as reasoning, natural communication, problem-solving, and learning from humans. Today, following the launch and rapid large-scale adoption of ChatGPT (and its underlying GPT-3 and GPT-4 models, which are now the engines behind Bing, the next generation of Office and so on) and text-to-image creation tools like Midjourney, people use "AI" almost exclusively to refer to these generative tools, since they represent such a significant leap in both capability and potential impact over prior generations of AI.

PREDICTIVE MODELLING uses mathematical and computational methods to predict an event or outcome based on set inputs and a wide spectrum of other variables. Imagine if PLM vendors-built models that would automatically recognise the data inputs and outputs, including the approval or disapproval gates. These models forecast a result at some future state or time based on changes to the model inputs. Predictive modelling would enable the automation of the end-to-end workflow process, including all notifications and communications inside and outside PLM.



DATA SOURCES – we have abundant data used within the fashion sector; data comes from a universe of system solutions and is of varying utility depending on its age. As a strong example, consider how, today, brands, retailers, wholesalers, and manufacturing partners will use historical data related to their customers' purchasing habits. As we have already stated, this data tends to lag days or weeks behind the purchase data. In recent times using social media feeds, TikTok, Instagram trends, Twitter hashtags, clothing styles of the most popular fashion influencers, and celebrity fashion events, we can now obtain the same data in a matter of hours, providing the business with rich and insightful near-term data. Today, we can use AI to generate new ideas, colourways, style features, and even suggested retail pricing based on the same data source in hours - and ChatGPT plugins could soon help to get those same styles eCommerce-ready and to streamline interactions with consumers. New, AI developed 'virtual styles' styles can then be designed and tested on e-commerce sites before manufacturing physical samples.

AI SUPPORTS CATEGORY OPTIMISATION AND EXPANSION

By ingesting and analysing ERP (sales) and PLM (product data) information, AI can be used to help develop product categories, and to understand and optimise the success of your current product categories. This means automated identification of new opportunities, instant insights on when to remove certain underperforming products and when to introduce newness, and rapid recommendations on when to increase volumes on the winners.

And this really is just the tip of the iceberg. AI's role here is surfacing insights from existing information at the right time, but as we've already seen, tapping into the generative possibilities of image and text models (provided these are also properly trained on brand-specific datasets) can then allow brands to shortcut from identifying a new slot to filling it with suggested possibilities.

AI-ENABLED TREND ANALYSIS MODELLING WITHIN PLM

By its very nature, the fashion industry is fast-paced and constantly changing with the waves of trends that roll in and out of the short seasons. As a result, fashion brands, retailers, wholesalers, manufacturers, and the rest of the value-chain (Tier1-6) partners, must stay agile and responsive to the customer's ever-changing demands. At the same time, they need to control design, development, cost, sourcing, manufacturing, quality, sustainability impact, and of course, costs, and not always in that order!

AI can collect, interrogate, compare, and analyse datasets; in fashion, we can use AI & ML to predict the latest trending silhouettes, style types and feature details, material types, popular colours, retail channel pricing strategies, and actionable data used by PLM users. AI can gather data from within your own country or from across the world, so whether you sell in your own country or are an international brand, artificial intelligence can augment regional or country-specific trend data.

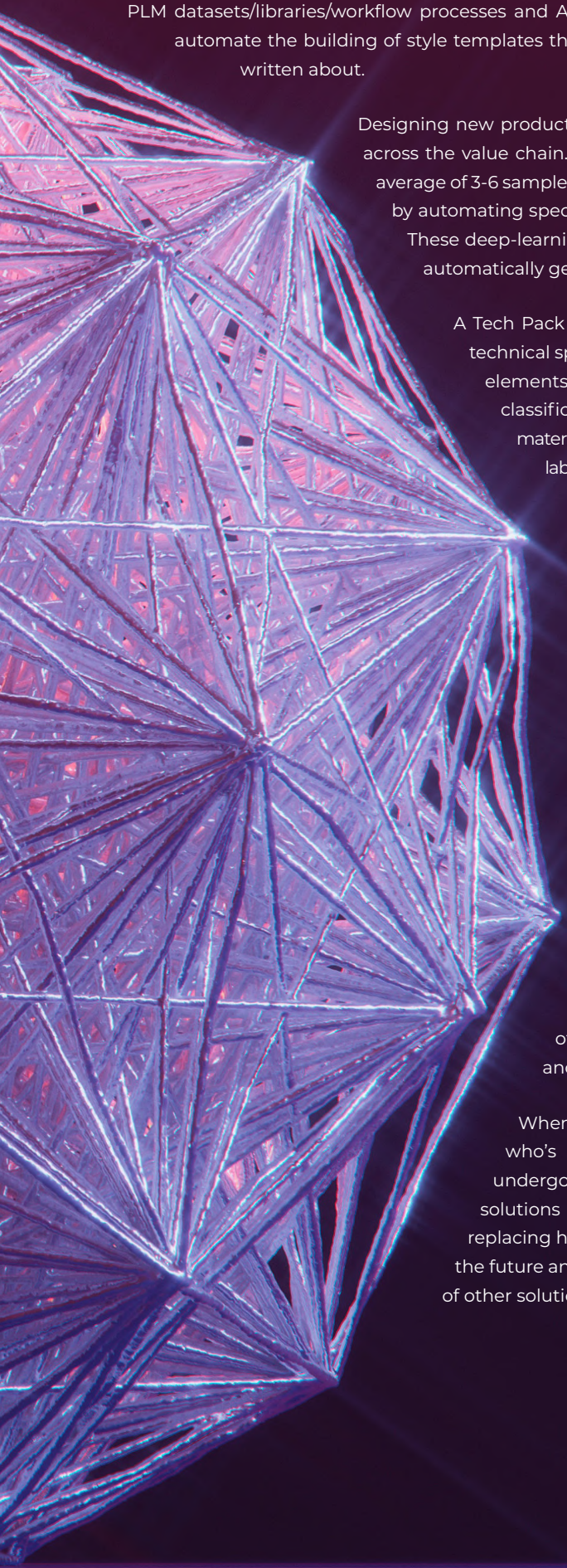
We can use AI linked to demographic characteristics, amongst many other models, filtering the data and then using deep learning models to support specific (age, interest, values, gender, product preferences, fits, likes, dislikes, materials, colour choices, quality, prints, plains, sustainability, quality, product types, price points, etc.) requirements.

At the same time, they can be automated to build mood boards, create supporting digital assets (**silhouettes, colours, prints, plains, stripes, plaids, fabrics compositions, trims, components, accessories**) and provide more detailed supporting metadata. At the same time, designers can provide human expertise and experience, giving specific parameters within the moodboard software, including the product category, seasonality, product use, environmental sustainability, country availability, and target price point.

This approach could ultimately save a huge amount of time and human effort. Unlike traditional trend forecasting methods that are time-consuming, taking days or weeks to compile, AI solutions can deliver the same results in hours and are far less prone to mistakes or data errors that often come with human inaccuracies. Although I do want to point out that generative AI is currently prone to "hallucinations" and inaccuracies, so it will remain essential for the foreseeable future for brands to add human validation to the end of any cycle that starts with an AI recommendation.

AI-AUTOMATED TECH PACKS

One of the biggest challenges with the product lifecycle today is the need to translate different workstreams, ideas, data, and processes into a single output: a technical specification or "Tech Pack". This is an area that brands have long turned to PLM (and earlier PDM) to assist with, but today the creation of a tech pack remains only partially automated.



This is going to change soon, though. PLM vendors are likely to already be looking at incorporating AI models linked to PLM datasets/libraries/workflow processes and APIs. And using these deep-learning models, we will soon be able to automate the building of style templates that feed off the dynamically generated trend analysis data I've already written about.

Designing new products is a complex process that involves multiple stakeholders operating across the value chain. At the same time, it includes numerous product iterations (industry average of 3-6 samples) before the style can be approved. ML will help streamline this process by automating specific tasks, such as creating and modifying synthetic product sketches. These deep-learning algorithms can be trained to recognise trending style features and automatically generate new sketch variations based on market analysis results.

A Tech Pack example would be the use of ML to generate accurate and detailed technical specifications for each product option, providing all of the essential data elements, including the product category, product type, gender, size range, size classification, points and measure, how to measure guides, automated bill of materials, product testing, material composition, sustainability requirements, bill of labour operations, a list of potential sourcing partners, etc.

Essentially, we would arrive at what we call the 80/20 rule, with 80% of the primary data being supplied automatically by AI, adding more data as we move ahead with the workflow; each new process decision would drive automation (material composition, plus colour choice, would automate the material lab dip process), the final 20% being completed by the creators, developers, and manufacturing value chain partners.

CONCLUSION

Undoubtedly, we can say that data-powered decisions driven using AI & Machine Learning will give brands an edge in the competitive fashion world. Some may say that AI is taking jobs away from the creative and commercial specialists that keep fashion brands running today, but the reality is that AI & ML can give the creative teams more time to be creative rather than being buried in administrative tasks that simply don't add value to their day jobs, and it can allow commercial and technical teams to focus on the elements of their roles that hinge on human capability rather than data analysis and manipulation.

When I cast my mind forward even a short time, it's clear to me - as someone who's seen the technology journey the fashion industry has already undergone - that AI is going to be integrated into the core and extended solutions that make up the fashion technology ecosystem. But rather than replacing human skills, AI - used carefully - will instead help fashion to prepare for the future and will bring positive change to both core PLM and the broad spectrum of other solutions that integrate to it.

THE WORLD IS CHANGING. WHAT WE NEED FROM PLM IS CHANGING WITH IT.

FROM THE EXISTENTIAL THREAT OF CLIMATE CHANGE, TO STRINGENT SUSTAINABILITY LEGISLATION, COMPLEX SUPPLY CHAIN RISK, HIGH INPUT COSTS, AND AN UNPREDICTABLE CONSUMER AND WHOLESALE MARKET, SURVIVAL IN FASHION TODAY MEANS OVERCOMING AN INTERLOCKING GRID OF CHALLENGES. AGAINST THAT BACKDROP, WHAT DOES IT MEAN FOR PLM TO CONTINUE TO DELIVER AS BOTH A BEDROCK OF STABILITY AND AN ENABLER FOR WIDER DIGITAL TRANSFORMATION?

BEN HANSON

EDITOR-IN-CHIEF
THE INTERLINE

Ben Hanson is the Editor-in-Chief of The Interline - a technology publication for fashion professionals, written by industry experts, and read by brands, retailers, and supply chain businesses around the world. Day to day, he leads a growing, multinational team to address the most pressing challenges affecting the fashion industry's fast-moving digital transformation. From supply chain transparency to digital fashion, The Interline tackles major industry questions through a technology lens.

PLM has had a lot of labels over the years. The ones that have stuck the longest have been those that put the software and the idea where it belongs: at the centre of everything. The longest-serving of them is probably "single source of truth," but I prefer "the heart of product design and development," because it reflects the fact that PLM isn't just a home for knowledge and process centralisation, but also a hub for connecting both people and a diaspora of different digital solutions.

But being the heart of *anything* can be a complicated prospect.

When things are going well, you sort of fade into the background. Sitting here, reading this, you probably weren't aware of your own heartbeat until I just brought it up. Because that's what hearts generally do: keep on going, quietly and steadily.

When things are going badly, suddenly all eyes are on you. Because when the organism is threatened by change, or when parts of it are injured, it's the heart's job to make sure the host survives.

And if we look at fashion from that perspective - as an entity besieged on all sides by threats, and with damage to its extremities up and downstream - then its heart should be working overtime right now.

In theory, this should translate into a universal upsurge of interest in PLM from organisations that haven't yet adopted it, or that are looking to replace a legacy solution. In practice, I don't believe that's happened in quite that form, since new-name PLM sales remain buoyant but haven't completely *exploded*.

But based on the data we collected this year, some related things *have* happened that hint that a greater weight of expectation is being placed on PLM as the outer world is becoming more hostile and difficult for brands, retailers, and producers.

Large enterprises that were among the earliest investors in PLM are continuing to expand their PLM footprints, acquiring new licences (often in huge numbers) and purchasing new modules and features to both capitalise on new opportunities and to mitigate the impact of big challenges.

And PLM for smaller and micro-brands continues to be one of the most active sectors - with brands across the SME market segment continuing to prioritise affordable, SaaS software as a key engine for their growth. Critically, this trend is continuing at a time when a lot of investment is focused on peripheral and extended solutions - DPC, eCommerce and so on - that promise capabilities that are more exciting, more immediate, and more current than PLM.

So brand and retail businesses at the both extremes of the size and complexity spectrum are evidently still finding value in the long-standing idea of consolidating core product information, connecting systems, and unlocking collaboration.

And at a time of historic disruption, brands are not just turning to new ideas and quick fixes; they're building new or deeper relationships with foundational technology precisely *because* of those disruptions.

What are the disruptions I've hinted at? They're all things we're intimately familiar with. Spiralling input costs. Long lifecycles. Shrinking trend windows. Fractured supply chains. Overproduction and excess inventory.

But the largest of them, to my mind, is sustainability. That's not a small claim at a time when we've seen a devastating pandemic and a catastrophic war in Europe in the last three years alone, but I think it's an accurate one.

First let's consider the pace. It's now universally accepted that the effects of human-made climate change are already here, and that they're going to get much worse.

Consumption markets might be spared the worst for a while, but a deadly heatwave that spread across sourcing and manufacturing destinations across Asia this April was made much more likely because of climate change. And the long-threatened 1.5 degree threshold for global warming now seems all but certain to be passed within the next five years.

Then consider just how quickly sustainability regulations are being introduced and enforced. Given the urgency of the problem this shouldn't come as a surprise, but product passports are just the tip of the spear, and sooner rather than later both massive multinationals and single-country SMEs will be subject to the same official requirements for scientific, data-backed disclosure around their impact on planet and people.

And as it stands today, based on the level of visibility they have, and the level of technological maturity they've reached, very few brands are going to be able to comply with those regulations.

If there's an existential threat to fashion, this is it. Changing consumer markets driven by unpredictable and extreme weather patterns. A humanitarian crisis on a catastrophic scale, disproportionately affecting the regions where fashion sources components and contracts labour. And punitive regulations that are already starting to enforce a level of disclosure and transparency that will be difficult - if not impossible - for most organisations to meet.

In these circumstances, the demands and expectations that companies have for PLM are destined to change. From core functionality like centralised product data and technical specifications, through to planning, supplier management, and much more, a lot of what the fashion value chain now needs is within PLM's wheelhouse to deliver.

There will, though, likely to be two different schools of thought on how this should happen. And these will probably be correlated to the size of the business doing the thinking.

For a long time, a debate has been quietly simmering around whether PLM should "stay in its lane" and focus on improving core capabilities, usability, and stability, or whether it should be adding extra features. That debate is now taking on a new meaning as brands, retailers, and manufacturers begin to reckon with how to respond to all the disruptions I've already mentioned - but most importantly how they're going to reshape their businesses to match the enormity of the sustainability challenge.

I suspect that larger organisations will prefer to continue to use PLM primarily as a system of record and a source of truth for style-level data and associated libraries. These audiences will more than likely want to manage supply chain risks, sourcing challenges, impact calculations, product provenance, and other variables in different best-in-class solutions that are then integrated into PLM. And in fact we're already seeing these kinds of partnerships being forged.

For the smaller businesses that make up so much of the new-name PLM market every year, I think the emphasis might be different. Why, they might ask, can't the platform that holds their key product attributes, tracks their journey from concept to approved production sample, and holds data on all their suppliers also be one of a small number of places they go to source the information they need to disclose for compliance purposes?

Or in other words, why can't PLM be a sustainability and transparency solution by itself?

Quite how the technology market is going to respond to these asks is something we're going to have to see develop over time (but not too much time, given the urgency involved). The Interline will be unpicking both the mandate for sustainability and how the broader technology landscape is evolving (and what that means for sustainability tech as a standalone market segment) in a new report, coming later this summer. We expect to find both crossover with PLM and areas where entirely new platforms, solutions, and services are the only options.

As for PLM itself, I expect we'll see further changes to how it's labelled as it evolves in both directions: towards greater power in its core functions, and through partnerships and innovations in new directions.

But as unpredictability, climate change, and ethical consumption become even more prominent background forces in our lives, I suspect we're going to see that beating heart become even more necessary than ever.

PLM VENDOR PROFILES

As the market analysis that appears later in this report demonstrates, PLM for fashion is entering something of a new era.

We've seen vendor consolidation and entrenchment pick up in a significant way in the last two years, meaning that there are, overall, fewer PLM-specific technology companies today. But at the same time, what the acronym PLM actually stands for is still evolving, and this has created a newly-open playing field for both established companies and disrupters to try and carve out their share of.

At the moment, most of those disruptors are still operating in stealth mode. In the near future we expect to see them emerge, and to start challenging the idea of what PLM should be, how it should be purchased and deployed, and how it should fit into the overall fashion technology ecosystem.

But established enterprises vendors are not resting on their laurels. These companies might make up the bulk of our PLM technology listings this year, but each of them has also put notable work into redefining what PLM means, what roles and functions it touches, what solutions it integrates to, and much more.

As always, the following vendor listings includes companies who have played a demonstrable regional or global role in the RFA PLM market this year, and who have made continued research, development, and investment efforts in the apparel industry. We have applied stringent inclusion criteria to ensure that only vendors with modern, commercially-available PLM products are included (hence the exclusion of the aforementioned startups and disruptors).

Each vendor profile contains statistics, insights, and opinions exclusive to us. Taken together, these profiles are designed to serve as a way for fashion brands, retailers, and producers to quickly understand the regional and multinational PLM market as it was at the end of the financial year 2022/23.

In addition to key statistics like overall customer figures and resource allocation by region, we have included information on the approximate geographical breakdown of users, the average time taken for a PLM installation, active technology partnerships, and much more - all to help create the post complete picture possible of each major fashion PLM vendor.

As we did last year, we have also interviewed a senior executive for every vendor. Each of them was asked two universal questions and four bespoke ones, with the goal of presenting both a unified set of answers about the nature of PLM and a custom interrogation of what each vendor believes are the key priorities for fashion technology in general this year.

As always, while we have made every effort to verify the data provided to us, the final responsibility for customer names, figures, and the other data that appears in these profiles rests with the vendors themselves. For more detail on how we use this information - and synthesis market insights from it - please turn to our market analysis. Or explore the consultancy listings that follow, to continue building a fuller picture of software and services focused on delivering against the vision of PLM.

BAMBOO ROSE

FINANCIAL YEAR 2022/23

+34 **New customers of RFA PLM including:**
Hunkemöller

235 **Overall number of active customers**
of PLM within the RFA industry, excluding customers cited as new.

+9
New customer expansions

~97%
of the overall number of active customers currently paying maintenance.

100 **Number of resources specifically engaged in R&D**

~30,000	**Internal users worldwide**	**~140,000**	**External users worldwide**
~90%	North America	**~75%**	North America
~4%	EMEA	**~10%**	EMEA
~6%	APAC	**~15%**	APAC

11
Active technology partnerships supporting RFA PLM, including:

CLO Virtual Fashion (2022), Columbus Consulting (2021), PWC (2021), Blue Yonder (2021), CLO (2021), QIMA, formally Asia Inspection (2021), TradelinkOne Technologies (2021), True Fit (2019), Microsoft (2019), Raistone Capital (2018), IBM (~2014)

BAMBOO ROSE

6-9 Months
Average time taken for an RFA PLM implementation (SME)

100%
of installation time done digitally, on average (SME)

9-12 Months
Average time taken for an RFA PLM implementation (large enterprise)

100%
of installation time done digitally, on average (large enterprise)

Tell us what you feel has changed and/or advanced in your product offering this year to differentiate your company from others in the RFA PLM market.

Big news this year! Bamboo Rose has acquired Backbone PLM to expand our PLM capabilities.

Backbone provides a designer-centric product development platform that empowers retailers and brands of all sizes across apparel, soft goods, and hard goods to make products smarter, faster, and at scale.

Backbone's solution is used by innovators across the industry, ushering products from concept to launch through a connected, cloud-based application for design and production teams.

Together, we will provide a collaborative product development, sourcing, and supply chain platform. The combined solution will support global retailers & brands to drive creativity, increase speed to market, and reduce costs.

CONTACT

BAMBOO ROSE

Increase Operational Efficiency and Bring the Right Products to Market.

PLM THAT EMPOWERS YOU TO MAXIMIZE REVENUE.

Design, develop, and deliver with critical business outcomes in mind:

- Increase revenue and margins
- Achieve true vendor collaboration
- Improve team agility
- Understand true landed costs
- Accelerate speed-to-market

REQUEST A DEMO

Bamboo Rose has acquired Backbone!

LEARN MORE

BAMBOO ROSE

IN CONVERSATION WITH

JEFF FEDOR
SVP OF PRODUCT

The places software begins and ends are constantly changing as market demands shift, new innovations emerge, and fresh capabilities and integrations are added. Can you tell us what PLM means to Bamboo Rose, and how you believe that definition has evolved over the last few years.

Product lifecycle management (PLM) is at the core of our business. We provide retailers and brands with a single platform to design, develop and deliver the right product at the right time in the right place to achieve positive business outcomes. These include things like increasing revenue and market share, improving cost accuracy and accelerating speed to market to name a few.

Legacy PLM systems create friction, forcing product designers, developers, and retail partners to create and collaborate outside the system. This results in slower operations, lack of data, human errors, and miscommunications. Modern PLM, such as the solutions we offer, provides a design and development solution to transform products from conception to creation, centralizing product data to streamlining creative briefs, production schedules, supplier communication, and much more. For apparel and fashion brands, PLM acts as a collaborative environment for designers and product developers to integrate colors, size specs, and materials. Not to mention, sample management and automated tech pack development. These functions increase operational efficiency from design to delivery, reducing time and costs.

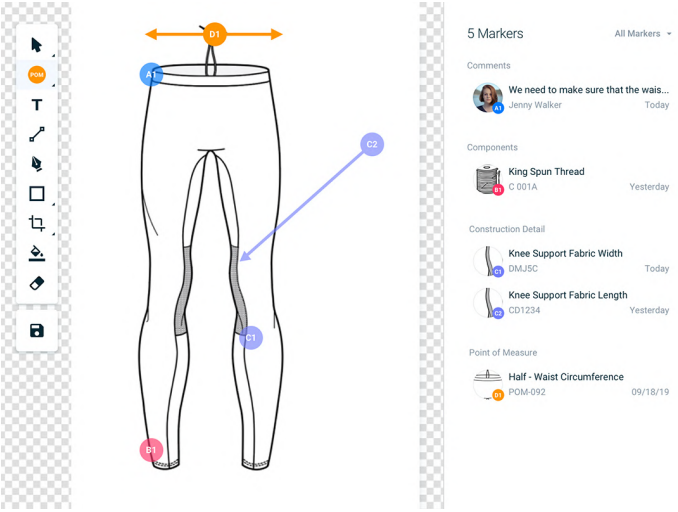
To maintain a competitive edge in our ever-changing and evolving industry, retailers need a collaborative digital ecosystem in which to connect and streamline design, development, sourcing, and supply chain operations. Providing designers, developers, and internal & external retail partners with one single solution to effectively communicate

mitigates risks throughout the supply chain and provides greater visibility into operations & costs. Retailers can achieve shorter design cycles and faster speed to market with the right balance of quality, sustainability, and economic goals.

Historically, enterprise systems like PLM have been seen as more of an imposition on creatives than an enabler. How have both software and attitudes changed recently to emphasise the way that PLM can empower designers?

This ties in nicely with our Backbone PLM acquisition! Now part of the Bamboo Rose family, we provide a designer-centric product development platform. The digitization of historically manual parts of the design product cycle within the Backbone application leaves designers time to do what they do best: create, innovate, and develop great products. 20% of production time is lost looking for product information. Backbone's cloud-based system of interconnected libraries help retailers get back that time lost – promoting designer empowerment. From what we have heard from our fashion and apparel customers, they are thrilled to have options to support a concept-to-launch journey that brings products to market faster and more efficiently.

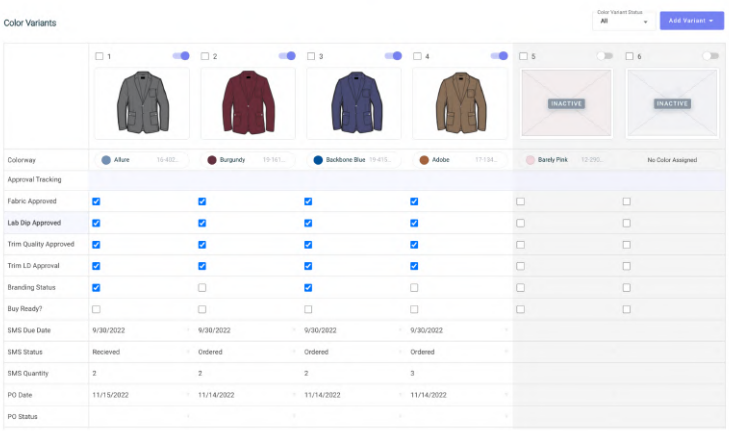
There's a significant role for PLM to play at brand HQ, but an equally large part of the go-to-market lifecycle of any product exists in the supply chain. This has always created a strong mandate for using PLM as the platform to connect brands and their value chain partners through live product data, but that mandate is stronger now than ever for cost, efficiency, and risk mitigation reasons. What should PLM be doing to support supply chain connectivity?



Retailers are focusing on supply chain resiliency due to the disruptions we have seen in recent years. And PLM is crucial to support supply chain connectivity focusing on attaching development decisions to customer expectations across markets, enabling collaborative development with internal & external teams and suppliers, and bringing visibility to the impact of design decisions on sourcing compliance, logistics dynamics, and margins. As retailers continue to face supply chain disruption, and emerging environmental, social, and governance (ESG) requirements – having full visibility across design and development teams, partners, and downstream processes has become business critical to support data-driven decision making resulting in better connectivity, agility, and resilience.

A similar question: what role can PLM play in enabling brands and retailers to both comply with ESG / CSR regulations and to back up their sustainability commitments with data?

PLM can certainly enable brands to comply with ESG / CSR regulations. Retailers are seeking visibility into their sustainability practices, including ethically sourced materials and compliant suppliers, due to the



existing and emerging regulations and pressure from consumers. Our solution provides detailed supplier performance and auditing data with tightly managed follow ups on corrective actions to drive compliance. The materials and packaging libraries provide in-depth sustainability and usage attribution to capture the impact of different materials within products. And our sourcing and global trade solutions provide the visibility necessary to assess environmental and social impact of different product, sourcing, and logistics decisions.

As a central hub for product information, it's important for PLM to be closely integrated to a spectrum of other solutions to help brands and retailers digitise their whole go-to-market process. What do you see as being the most important of those integrations? And, with the acquisition of Backbone PLM, what are the key benefits of bringing multiple parts of the technology ecosystem under one company umbrella?

There is an increased focus on transparency driven by both uncovering supply chain costs and by increased requirements for social and environmental impact analysis. In support of these needs, the most important integrations tend to be where data can be verified through triangulation (external networks or data consolidation services) or physical inspection. Data accuracy is critical to a transparent supply chain as downstream processes can be negatively impacted by inaccurate data information or poor assumptions. That said, in practical terms the PLM is first linked to master data systems whether they be MDM, PIM, or ERP, to leverage and further enrich the core product information generated through the product development and sourcing processes, and to prepare the products for offering to the organisations various sales channels.

One of our key differentiators is third-party integrations, our ability to plug and play with many platforms (ERP, Warehousing, Planning, 3D etc.) and content providers to enrich data, increase visibility and enable faster decision-making. Our PLM product integrates with Adobe Illustrator Plugin, Pantone Library, and more to focus on removing obstacles from designers' daily workflows and allowing them to spend more time creating quality, innovative products.

And, with the acquisition of Backbone PLM, what are the key benefits of bringing multiple parts of the technology ecosystem under one company umbrella?

The key benefit in bringing our two organizations together will be housing a complete end-to-end PLM where retailers can design, develop, and monitor business functions from a single system. Leveraging the unique strengths of both platforms will be crucial in providing a solution retailers will leverage to create efficient, resilient, and responsible supply chains. Combining the breadth of Bamboo Rose's enterprise features that span global sourcing, order management, global trade, and more, with Backbone's focus on design workflows and creative empowerment will result in a market-dominating platform that allows retailers to increase operational efficiency and deliver the right products to market.

How do you see PLM's role in the fashion technology ecosystem evolving in the near future? How can it best support fashion's ongoing digital transformation?

The fashion industry is competitive and continuously evolving. Trends come and go. Consumers seek interesting and quality products while wanting more ethical and sustainable options. This puts pressure on apparel and fashion brands to deliver products (with speed) at the right time. Retailers need a single platform to create, design, and deliver to meet their customers' expectations with agility.

We've seen an ongoing shift in favor of fashion technologies like PLM over the past few years, and this trend will increase exponentially as time goes on. It will be crucial for retailers to not only accept - but embrace - PLM as a key part of their business strategy. Leveraging a PLM allows retailers to spend more time on product design and development, delivering the right products to the right consumers at the right time via the right channel. When that happens, brands drive brand loyalty and reduce returns.

The best thing PLM can do to support this ongoing digital transformation is to evolve in tandem with the industry. Creating integrations with other solutions (ERP, 3D, Adobe Creative Cloud, Pantone, etc.) will allow retailers to accelerate data-driven product and supply chain decisions, as well as increase operational efficiencies. Expanding and refining product offerings to modern challenges like sustainability, compliance, and global trade management will empower an efficient, resilient, and responsible supply chain, meeting consumer demand for quality and thoughtfully created products.

CentricSoftware

FINANCIAL YEAR 2022/23

+108 **New customers of RFA PLM including:**

4T2D (Fourtitude), A.P.C., ABFRL, Alfa SKO, Alohas, Alpha Tauri, Anderson Brockhurst, Aquazzura, Arne Clo, Bagster Retail Private, Baozun/Gap China, BBC International, Blutsgeschwister, Bradshaw Home, BYLT Basics, Cape Horn (Tierra), Carpenter, Castañer, Espadrilles Banyoles), Cotopaxi, Cutter & Buck, Dada Sport, Disturbia, Dream supply / Junyi, ENO, First Lite, Glam Fashion, Gobi Cashmere, Groupe Royer, Hey Marly, Higher Technology, Holly Yashi, Holy Fashion Group, Horseware, Hultafors Group, IMMI / Yaohuo trading, Jaanuu, Kashion, Kidpik, Kukri Sports, lala Berlin, Larroud, LAT Apparel, LVMH - Celine, LVMH - Dior, LVMH - Kenzo, LVMH - Sephora, LVMH PCIS/GIE, Markalab, MeUndies, Mint Velvet, Montane, MS Apparel, Mugler Fashion, Mulberry, Nest Design, O'Neal Europe, Orchid Fashion, Orsay Procure, Outdoor Research, Pan Pacific International Holdings Corporation, Picture Organic Clothing, PMI, Profuomo, QE Home, Qiaodan Sports, Represent, Reyn Spooner, Rhoback, Richardson Sports, Rino Sport, Sansen Saudaratex Jaya Textile, Seidensticker Group, Shanghai Huaxiang Woolen Dressing, Shangxia, Spiraledge, Spoke / Respoke, Sport Street, Storm Creek, Sungjoo Group, Tai Apparel, The Chennai Silks, The Rasario, Theilma / Ensight Design Lab, Tous, Tseng Limited, UTC, Verve Motion, Vietnam Housewares, Wolverine - Merrell, Yargici, Yearcon, Zadig&Voltaire, Zak Designs, Zeeman, Zelus

658 **Overall number of active customers**
of PLM within the RFA industry, excluding customers cited as new.

300+
New customer expansions

100%
of the overall number of active customers currently paying maintenance.

139 **Number of resources specifically engaged in R&D**

Resources focused on RFA, separated by region as follows:

North America:	EMEA:	Latin America:	APAC:
201	**230**	**25**	**133**

148,000 **Internal users worldwide**

WWW.CENTRICSOFTWARE.COM

CentricSoftware®

4-6 Weeks
Average time taken for an RFA PLM implementation (SME)

100%
of installation time done digitally, on average (SME)

18-26 Weeks
Average time taken for an RFA PLM implementation (large enterprise)

90%
of installation time done digitally, on average (large enterprise)

200+

Active technology partnerships supporting RFA PLM, including:

Adobe Illustrator; swatchbook, Vizoo, Solidworks, Browzwear, Optitex, CLO 3D; Alvanon, Rhino, 80+ ERP systems; Higg, TrusTrace; Slack, Teams

**80% of Centric PLM customers integrate with at least one other solution*

Tell us what you feel has changed and/or advanced in your product offering this year to differentiate your company from others in the RFA PLM market.

We concentrated on several things indicated as critical by our users — UX, connectivity and scope:

- Our solutions are easy and efficient to use, with powerful, market-driven functionalities built based on customer use cases. All features are built hand-in-hand with customers.
- We continue to expand our partnerships and connections to other platforms including 80+ ERP solutions and integrations even with other PLM and planning solutions to improve product portfolio management, SKU rationalization and sustainability.
- The scope of Centric solutions also expanded with the addition of Centric Pricing™ (formerly StyleSage™), empowering customers with AI-driven pricing intelligence, competitor benchmarking and trend forecasting.
- Meanwhile, we added an astonishing 50+ new features to Centric Planning™, giving more accurate and powerful retail planning capabilities.
- We continue to innovate Centric Visual Boards, which pull hundreds or thousands of data points from PLM, Planning and other systems so that teams can collaboratively make visually-based, data-driven decisions.
- Digital Product Creation is the future, and we know it — Centric is the only PLM included in The Interline's DPC guide this year. We continue to deepen end-to-end 3D capabilities, and expanded our partnerships to include Alvanon and Rhino 3D.

CONTACT

CentricSoftware®

Product Concept to Launch

MARKET LEADING

PLM – PLANNING – PRICING – VISUAL BOARDS

99% customer retention rate. **100%** go live.
97% referenceability. **30%** of customers replaced a legacy PLM with Centric PLM®

- ☑ Increase agility and time to market
- ☑ Get closer to consumers
- ☑ Maximize margins
- ☑ Be greener

DISCOVER CENTRIC SOLUTIONS

CentricSoftware™

IN CONVERSATION WITH

STACEY CHARBIN
CMO

The places software begins and ends are constantly changing as market demands shift, new innovations emerge, and fresh capabilities and integrations are added. Can you tell us what PLM means to Centric Software, and how you believe that definition has evolved over the last few years?

From our experience with brands, retailers and manufacturers in 47 countries covering all facets of AFA and retail as well as cosmetics, personal care, perfume, home and other FMCG products, PLM has matured into a digital hub to strategically manage and execute how a product comes into existence and is sold to the end consumer, from ideation to end-of-life.

PLM brings many teams together to collaborate, innovate and make strategic decisions, ultimately streamlining end-to-end processes and reducing costs and time to market. PLM can and should connect to multiple business systems (such as ERP, PIM, e-commerce, planning, pricing, 3D and more) to pull in information that forms a single source of truth.

Centric PLM® continues to innovate with market needs:

- Sustainability programs
- Digital Product Creation (DPC) using 3D viewing capabilities and design platform integrations
- Product Portfolio Management to optimize SKU/Product rationalization
- Packaging and proofing
- Product presentations
- Formulated product management, which also enables retail, footwear and apparel brands to expand their product categories and manage their entire breadth of product development and/or licensing.

We have also expanded our PLM platform to include Centric Planning™, Centric Pricing™ and Centric Visual Boards™, empowering users with greater MFP, range planning, visual assortment, pricing and collaborative what-iffing and decision-making abilities. All Centric solutions work with other enterprise software including other PLM and planning systems.

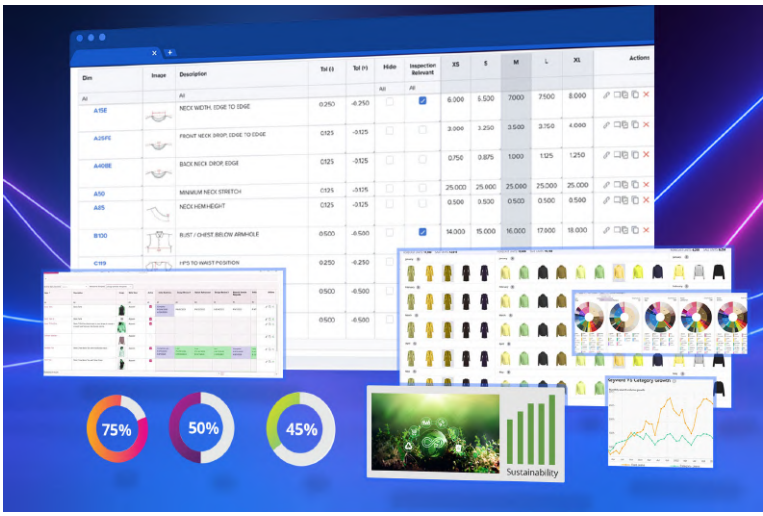
The pressure on fashion brands, retailers and manufacturers is mounting as governments are introducing new laws and tightening regulations to reduce fashion's environmental footprint. How can each of those different organisations use PLM to help ensure they're not just compliant with today's regulations, but also futureproofed against upcoming legislation and increasing consumer demand for sustainability?

PLM is the natural home for the information needed for both legal and company policy compliance. Why?

1. PLM is where products are born. Modern PLM solutions can connect to other systems where other product information may be generated.
2. Compliance requires special reporting/documentation/traceability, which can also be accomplished within PLM.

Centric PLM stores data on product components, along with supplier details for both contractors and sub-contractors. It can also collect data from other systems to create cradle-to-cradle documentation on recycled components, recyclability and circularity building the foundation for regulatory and sustainability compliance.

Reporting and documentation around these topics are critical and your PLM should be able to report as needed. PLM helps brands, retailers and manufacturers consolidate data



in a centralized location, identify gaps and address integrity issues to prepare them for what the future holds.

One of fashion's biggest challenges – overproduction – is having a pronounced impact on both sustainability and profitability. How can brands rethink the way they bring product to market, to shift the emphasis from more product to better-calibrated product – without sacrificing their margin?

Overproduction has to be tackled at the root—with the best possible Merchandise Financial Plan (MFP) and the best possible assortment plans and then the best possible product—in line with what consumers want.

Brands need to focus on creating fine-tuned, targeted assortments to maximize sales and reduce unsold goods, but need reliable data & market insights to do so. Without proper context, seemingly high-performing products in sales data roll-ups can lead to inflated forecasts and overproduction, leaving retailers with piles of inventory and heavy discounting eating away at margins.

It's important to understand exactly what your customers want, and where, why and

when they want it. How long will they want that product? Will it sell year on year? Is it a short-lived fad or an evergreen seller?

Brands shouldn't rely on manual analysis to stay competitive—they need robust, intelligent tools to deliver those granular insights and make decisions. Reducing overproduction comes down to:

- Better planning. Centric Planning uses AI-driven planning and demand forecasting to improve sell-through, maximize profitability and optimize the omnichannel experience.
- Better what-iffing to avoid over-development. This is why we developed Visual Boards, a unique and innovative way of bringing together information and presenting it visually so teams can collaboratively run through what-if scenarios against financial targets.
- Better products and product portfolio management. Essentially, make what the market wants. Our customers who use Centric Pricing can competitively benchmark prices and see emerging trends that guide more successful product selections.

These need to happen in parallel not sequentially, to save time, to be closer to the consumer and more in tune with the market.

With the speed of digital transformation increasing, and more departments and job roles than ever adopting technology platforms for their own needs, do you believe we run the risk of a new age of siloed solutions?

No, on the contrary. People are more educated than ever and are specifically looking for systems that will connect with one another. Emerging digitally native brands definitely want PLM to connect to their ERP, e-comm and/or PIM systems and more.

It is true that some companies struggle with system integrations, but this is mainly because they have older, closed systems, systems requiring custom code and/or parts of their process with no system, such as relying on spreadsheets. This tends to be a problem for companies where there can be different systems dating from different points in time, with different owners. Lacking a better way to do things, some significant parts of the process have always been offline, such as developing product assortments using physical boards and printed line plans.

We have a whole solution born out of this need—Centric Visual Boards. Visual Boards pull live information from different systems and represent it in a drag-and-drop visual format that enables teams to collaboratively

build assortments, create product concepts, build digital catalogs and source more efficiently.

Unpredictability and economic uncertainty are still key forces in 2023, and businesses are facing both changes in consumer spending and unexpected shifts in the supply chain. How can PLM help brands find stability?

Brands and retailers can absolutely future-proof their businesses by having all modern, agile systems so teams can plan, decide and execute quickly and efficiently. You need to understand your own process and business first and foremost. Without a PLM in place or without high user adoption, it is extremely difficult to do.

PLM provides that actionable, real-time data foundation to make informed and fast decisions against market disruptions as opposed to second-guessing decisions based on incomplete or out-of-date data.

Another important step in dealing with unpredictability is to also understand the market as accurately as possible. Demand sensing, trend analysis and competitive benchmarking using tools such as Centric Pricing enable brands and retailers to get a firm handle on what is happening in the market and spot emerging trends, whether positive or negative.

How do you see PLM's role in the fashion technology ecosystem evolving in the near future? How can it best support fashion's ongoing digital transformation?

A modern PLM will continue to enlarge its scope to provide a broad foundation for fashion's digital transformation, stretching into other functional areas of the business (such as those who are traditionally non-PLM users). At Centric Software, we see companies of all sizes and all user profiles adopting PLM. That said, there are still many very large companies who are adopting PLM for the first time, or changing out an older, legacy solution for one that is configurable, connectable and with an inviting user experience. The lines between traditional solutions are blurring and users want information pushed to them, regardless of where the master data is generated. This includes ERP of course but also planning and pricing and more.

Sustainability is a serious topic with many companies looking to improve in this area. PLM's unique ability to provide visibility, monitoring and documentation throughout the supply chain empowers sustainability initiatives. PLM is going to be crucial to keep up with government regulations. Managing sustainability data in clunky manual systems is just too difficult, and could jeopardise your business.

Hand in hand with sustainability is 3D, which has been around for a long time but is now being adopted more and more. Digital product creation is the new frontier of 3D design, and PLM should sit at the center of digital product development, just as it does with physical product development.

As Gen Z arrives on the job market, they won't want to work on antiquated systems. They expect modern tech from their favorite brands where they have always dreamed of working. As far as attracting potential employees, employee retention and building a knowledge base, PLM is an asset for sure.

FINANCIAL YEAR 2022/23

+13 **New customers of RFA PLM including:**
AXNY (US)

50 **Overall number of active customers**
of PLM within the RFA industry, excluding customers cited as new.

6,500 **Internal users worldwide**

>1,700 **External users worldwide**

3 **Months**
Average time taken for an RFA PLM implementation (SME)

5-6 **Months**
Average time taken for an RFA PLM implementation (large enterprise)

80%
of installation time done digitally, on average (SME)

70%
of installation time done digitally, on average (large enterprise)

For all customers, installation is fast and easy. Companies will get three tenants (production, test, development). This is a cloud native Enterprise level MT Cloud deployment.

Implementation varies a lot by maturity, complexity, and ease of decision making.

4

Active technology partnerships supporting RFA PLM, including:

Made2Flow, Amazon Web Services (Partnerships)

Adobe Illustrator, CLO (Third Party Plug-ins)

Tell us what you feel has changed and/or advanced in your product offering this year to differentiate your company from others in the RFA PLM market.

Infor PLM for Fashion is a multi-tenant cloud service for fashion brands and retailers keeping you current all the time.

The PLM solution includes processes all the way from inspiration, design, product development, sampling and connecting 24x7 with your suppliers. Using and learning the application is simple while at the same time the capabilities are broad and deep.

The PLM offering also includes Infor Operating Services: a unique platform including monitoring and managing integrations, data lake for data repository, workflow for automation, tasks and notifications, document management and configurable homepages.

The platform can be extended with tools for Application development (ex Apps) and link into analytics, digital assistance Coleman/AI/ML, helping your business to the next level of intelligence and automation.

The Infor release strategy allows us to deliver new smaller features bi-monthly and larger features twice a year that_customers can adopt at their own pace. Our PLM offering runs either standalone or tightly integrated to our CloudSuite Fashion ERP, which supports the wider business operation.

We see PLM as part of a bigger process where the extended production supply chain should be connected to provide impact measurements, sustainability information, and environmental CO2 reporting. This helps provide true transparency and traceability from raw material to finished product. Using smart tagging (product passports), bringing sustainability to next level protecting your brand. For this reason, we recently integrated with 3rd party solution provider Made2Flow.

CONTACT

Design for disassembly

Stay evergreen with cloud-based PLM

Bring sustainable collections to life with a PLM solution that gives you:

- Intuitive modern user experience that is easy to use and learn
- Data insights displaying relevant data from PLM or other systems
- Standard integration to Made2Flow for real-time product impact measurement as you create your designs
- Fast and easy to connect with your suppliers, 24x7 globally

Learn more about Infor PLM for Fashion at infor.com/fashion-plm

IN CONVERSATION WITH

HELENE BEHRENFELDT

INDUSTRY & SOLUTION STRATEGY

The places software begins and ends are constantly changing as market demands shift, new innovations emerge, and fresh capabilities and integrations are added. Can you tell us what PLM means to Infor, and how you believe that definition has evolved over the last few years?

Traditionally, the focus was on PDM (Product Data Management). Later this evolved into PLM (Product Lifecycle Management), which added the capabilities of collaboration to product data management. At Infor, we have gone down the same path; our pedigree started with Freeboarders, Runtime/Quest and Style Manager.

Today our solution has evolved into a modern multi-tenant cloud PLM solution, taking the best of the history, and adding new technology capabilities. We believe the next steps in PLM will be to expand to include data from additional systems, to provide relevant information such as digital design, sustainability, inventory levels, procurement, quality assurance, supplier statistics and more. It makes no sense to add this information in PLM, instead it is more efficient to ensure the PLM solution can integrate to external systems that would be the natural source to provide this kind of data. An example is our standard integrations from PLM to Adobe, CLO, and recently Made2Flow (product impact measurement). To facilitate the integration to external systems, we offer Infor Operating Services (OS) technology platform as part of our PLM offering. This platform allows customers to manage integrations, workflow, unique user experience and extensibility as needed (e.g. to create apps for a specific purpose). Additionally, we believe in providing new PLM and technology capabilities regularly to ensure customers' systems are up –to-date, and always current to enable them to quickly adopt to new market requirements.

Enterprise software has a difficult legacy of being heavyweight, complex and having a difficult onboarding process for new users. Moving platforms like PLM to the cloud has been a major step in making them lighter and more easily accessible, but the other big component is making powerful technology intuitive and easy to use. What is your philosophy here, and what do you believe the future of PLM and other enterprise technology looks like at the user level?

We have a clear strategy to ensure our solutions are intuitive to use and easy to deploy. We see a need to deploy solutions step by step, so we're offering a modular (composable) solution approach. This can, for example, start with deploying our PLM solution, and as a next step, activate the procurement module from our ERP suite (or another procurement system) and then add data analytics to get insights on top of that. We believe in the approach of offering our customers easy integration to 3rd party solutions to, for example, provide data on the extended supply chain. As the Infor OS technology platform is included in our PLM offering, it is easy for customers to integrate, expand and innovate as required. In addition, we provide pre-configured content and templates to ensure faster deployment to simplify projects and shorten time to value.

The drive for brands, retailers, and their suppliers to build greater transparency into their supply chains is stronger than ever, with

consumers, regulators, and environmental metrics all mandating that fashion makes some big leaps in sustainability. How does Infor support supply chain visibility and transparency, from cotton to production?

This is an area that we have paid a lot of attention to recently, as we truly understand and support the importance of visibility and transparency across the supply chain. This is no longer a 'nice to have', it will be a mandatory requirement to provide necessary data to e.g., comply with the French AGEC law. To improve visibility and transparency we have added a standard integration to the Made2Flow solution. This means that customers using our PLM solution can directly see what impact on the environment a new collection will have. For example, on changing a fabric in the BOM, the designer can immediately get feedback on what positive or negative impact this will have. With this partnership we can offer true transparency into the extended supply chain (from tier 1 down to tier 3, or even tier 4). Being able to prove that products and production supply chains are sustainable is a very important capability to help protect the brand—and it all starts with embedding sustainability metrics as early as possible in the design phase.

Can you tell us how that broader visibility translates into product-level impact measurement?

By offering a standard integration to Made2Flow, customers using our PLM solution can see product-level impact measurement "on the go" as they design and develop the new collection. To ensure brand protection, this information can be made visible on websites, or via product QR codes that the end consumer can scan to get more detailed information. The solution is also future proof since it follows and adjust accordingly to changing regulations, standards, and reporting needs.

As perhaps the major hub for product data, PLM sits at the heart of design, development – making it more important than ever for PLM solutions to support automation, to streamline workflows, and to be able to provide intelligence and insights across those disciplines. What work has Infor done in this area?

With the Infor OS technology platform as part of our PLM offering, we are able to support the following:

- automation via workflow across solutions
- embedded insights, Artificial Intelligence (AI)/Machine Learning (ML) through Data Lake and analytics
- highly configurable user experience via role-based homepages
- tools for making extensions as needed, e.g. creating mobile App's

We offer a central repository of data in the cloud – for better insights.

How do you see PLM's role in the fashion technology ecosystem evolving in the near-future? How can it best support our industry's ongoing digital transformation?

We expect a wider adoption of digital product creation tools for 3D design and sampling. In addition, customer persona "made-to-fit" measurement tools could lead to better insights of product fit, resulting in less returns and waste. We also expect to see increased focus on sustainability and a focus on "design with disassembly in mind" (with detailed product composition data such as how to recycle or dispose the product). There is a trend towards greater use of AI/ML – to ensure the right type of collection is developed aligned to market needs. AI and ML could also be applied to avoid fabric waste during production, e.g., by identifying the best way to use up surplus fabric rolls and remnants sitting at suppliers. Finally, the increased focus on robotic process automation (RPA) intends to remove non-value adding activities to ensure skilled creative and technical designers can focus on value adding activities.

LECTRA

FINANCIAL YEAR 2022/23

+37 **New customers of RFA PLM including:**

Artsana, Bugatti GmbH, Diadora Spa, Doublej Srl, Essedi Spa, Façonnable, Fegi Manifatture Srl, Giada Spa, Hackett London, HIM Co Spa, iMedia, Janouras, Made Apparel, Maison Kistuné, Marine Serre, Miroglio Fashion Srl, Miss Elaine, Nyky Srl, Obispo S.A., Pepe Jeans Group S.L., PII Inc., Prada Spa, Rise Up Fashion GmbH, Scabal N.V., Seven Spa, Shiatzy International Co., Ltd, Spencer Bravia, Tecnica Group Spa, Tripel Due Srl, Tyndale, Zamasport Spa

574 **Overall number of active customers**

of PLM within the RFA industry, excluding customers cited as new.

N/A **Number of resources specifically engaged in R&D**

Resources focused on RFA, separated by region as follows:

North America:	EMEA:	Latin America:	APAC:
40	**185**	**25**	**60**

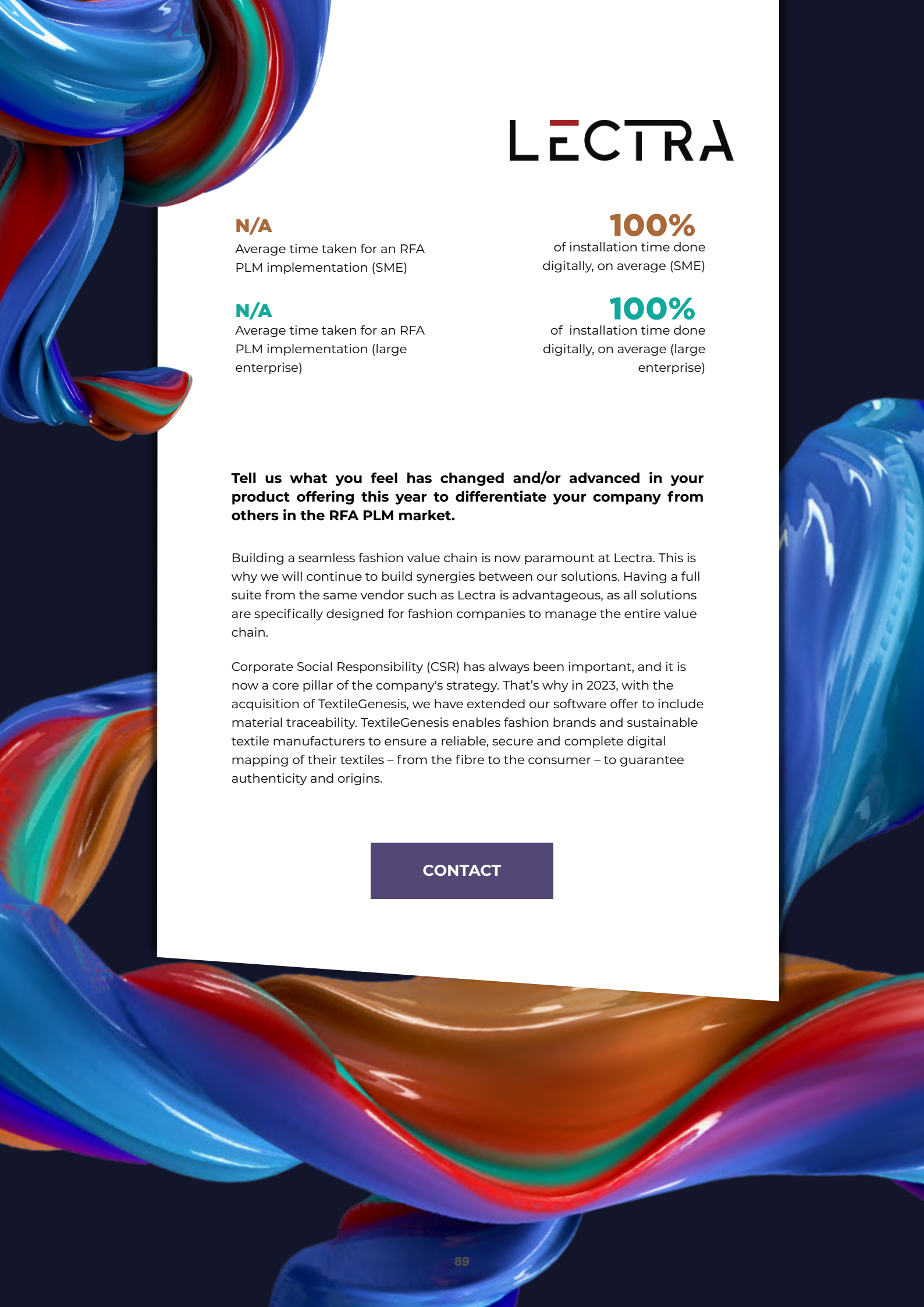
40,000 **Internal users worldwide**

50% North America

2% Latin America

45% EMEA

3% APAC



LECTRA

N/A
Average time taken for an RFA PLM implementation (SME)

100%
of installation time done digitally, on average (SME)

N/A
Average time taken for an RFA PLM implementation (large enterprise)

100%
of installation time done digitally, on average (large enterprise)

Tell us what you feel has changed and/or advanced in your product offering this year to differentiate your company from others in the RFA PLM market.

Building a seamless fashion value chain is now paramount at Lectra. This is why we will continue to build synergies between our solutions. Having a full suite from the same vendor such as Lectra is advantageous, as all solutions are specifically designed for fashion companies to manage the entire value chain.

Corporate Social Responsibility (CSR) has always been important, and it is now a core pillar of the company's strategy. That's why in 2023, with the acquisition of TextileGenesis, we have extended our software offer to include material traceability. TextileGenesis enables fashion brands and sustainable textile manufacturers to ensure a reliable, secure and complete digital mapping of their textiles – from the fibre to the consumer – to guarantee authenticity and origins.

CONTACT

IN CONVERSATION WITH

FRANCOIS GONNOT
PRODUCT MARKETING DIRECTOR

The places software begins and ends are constantly changing as market demands shift, new innovations emerge, and fresh capabilities and integrations are added. Can you tell us what PLM means to Lectra, and how you believe that definition has evolved over the last few years?

The traditional definition of PLM (Product Lifecycle Management) is no longer sufficient for the needs of fashion companies. These companies require advanced tools to manage the development of their collections, which have become increasingly complex due to factors such as fashion's retail transformation, the increase in sustainability regulations, and the rapid digitalization of economic and social activity. As a result, the workload and responsibilities of fashion product design and development teams have increased dramatically.

The fashion game is no longer about just getting data. It is about getting high quality, curated data. Kubix Link stands out because its IT capabilities extend beyond PLM. They also include PIM, DAM and other data management systems. Kubix Link is an open and highly configurable cloud platform, enables product-centric organizations to work from one official data source, which is always updated and easily accessible to every fashion industry stakeholder in their supply chain. It gives fashion companies the power to organize and deal with an increasingly large amount of heterogeneous data from different IT systems by centralizing and filtering information, giving it meaning and relevance in the context of collection development. Companies can deliver better products to market faster with a seamless and efficient product data management and product development process.

Now more than ever, PLM is a central part of a much broader technology ecosystem, with the need to integrate with a wide spectrum of other SaaS solutions. What is Lectra's approach to integration, and what value do you believe there is in having multiple components of that overall ecosystem under one umbrella?

In line with its strategy, Lectra continues to develop integrations between its SaaS solutions: From market analysis to online sales.

With Retviews, Lectra enables its customers to automate their benchmarking, to set the right prices, build winning product assortments, optimize discount strategies and enhance brand image with competitive intelligence data and product match.

With Kubix Board, our customers can digitalize concept and mood boards, take quick actions on collections, and create line lists before, during or after sales cycles.

Kubix Link PLM enables fashion companies to oversee their entire product lifecycle, allowing process stakeholders to share and communicate via a single source of product data.

Connected PIM brings together the product information organizing, enriching and publishing capabilities of PIM with native digital sales channel connectivity in a single solution.

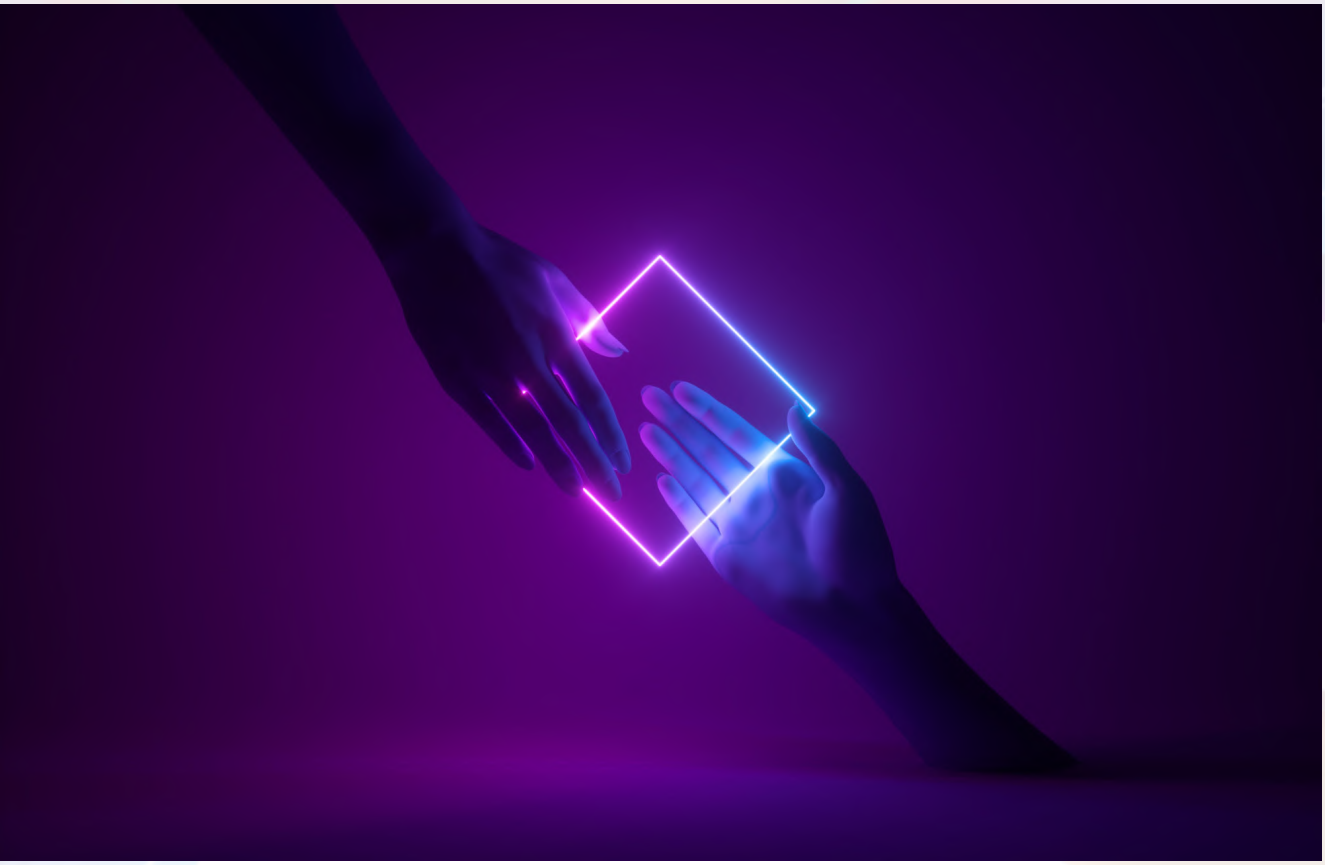
Neteven helps fashion companies organize their digital retail activities on the world's major marketplaces and accelerate direct-to-consumer activities to increase sales.

Lectra is continuously working towards maximizing the capacity of its users by combining the right solutions. Kubix Link users can indeed benefit from Retviews fashion analytics. Similarly, outside of the US, Neteven users can benefit from Kubix Link product data. With the same logic, relevant Lectra CAD solutions can connect to relevant digital management solutions. Lectra is continuously analyzing with its customers the correct integration.

Having a full suite from the same vendor such as Lectra is advantageous, as all solutions are specifically designed for fashion companies to manage the entire value chain. What makes this product offering so powerful and unique is that these solutions complement each other. When you integrate these solutions, you can go from sketch to sales with a single source of information. As it is powered by the cloud, you can scale as you need, and have the fastest go-live process ever. If you choose not to adopt the entire suite, the software can integrate with other external systems, such as ERP, CMS and WMS, as they are all open platforms.

Sustainability is at or near the top of every organisation's agenda, but there's a difference between hearing consumer demand and having the ability to act on it. As a result, a lot of companies are now looking to technology, especially PLM, to serve double duty - streamlining the product lifecycle at the same time as providing them with the data and the process structure they need to adopt more sustainable business practices and comply with tightening regulations. How do you see PLM and the solutions it integrates with delivering on that demand for combined efficiency and transparency?

At Lectra, Corporate Social Responsibility (CSR) has always been important, and it is now a core pillar of the company's strategy. In addition, eco-conscious consumers and environmental laws are driving fashion and apparel



companies to launch new sustainability initiatives, share more information and set new goals. These new regulations are putting greater pressure on fashion and apparel companies to gain visibility over their end-to-end product lifecycle processes. Digital technology is the cornerstone to helping fashion brands and manufacturers achieve supply chain transparency and measure their sustainability.

By integrating the data required to meet regulatory challenges, Kubix Link makes it possible to calculate the environmental impact of textile products. However, to serve certain markets, fashion companies will need solutions that go beyond the capabilities of PLM. That's why in 2023, with the acquisition of TextileGenesis, Lectra extended its software offer to include material traceability.

TextileGenesis enables fashion brands and sustainable textile manufacturers to ensure a reliable, secure and complete digital mapping of their textiles – from the fibre to the consumer – to guarantee authenticity and origins. The next step will be to integrate this platform into Lectra's other SaaS solutions.

PLM is often looked at as a tool for brands, but Lectra in particular has a very strong presence in the supply chain through its heritage in manufacturing technology, and now seems like the right time to spotlight that and extend that footprint with software. How important do you see modern PLM being as a tool for manufacturers who need to work digitally with a growing customer base who are providing data in different formats, but who all need the same levels of service and transparency?

Indeed, we know well the challenges of the manufacturers we have been accompanying for 50 years. We invest to remain at the forefront of innovation, as exemplified by our digital cutting room offer. Our aim is to guarantee the operational excellence of our customers by facilitating their digital transformation and integration of Industry 4.0 technologies.

Our fashion-specific solutions draw on a rich history of digital innovation, helping over 21,000 retailers, manufacturers and brands worldwide provide the quality, fit and speed their customers demand. Lectra data management systems, like Kubix Link unify data and teams onto a single, centralized platform, making it easy to syndicate data and provide a consistent data set that gives transparency to the supply-chain to track the development and production cycle at any time.

Using our solutions, manufacturing companies can now manage Tech-packs from multiple customers with a heterogeneous data set. This enables them to simplify the management of its prototyping requests, RFQs, order processing, quality review, and delivery.

Implicit in those last two questions is a vital role for PLM as the engine for supply chain connectivity and visibility. What does that look like, practically speaking, in 2023, and how can readers who haven't yet extended their PLM implementation into their extended value chain take action to work more collaboratively with their vendors, minimise risk, improve time to market, and all the other benefits it can bring?

Traditional PLM must constantly push its limits to integrate and facilitate collaboration with a growing number of supply chain actors. Not all traditional solutions allow such flexibility.

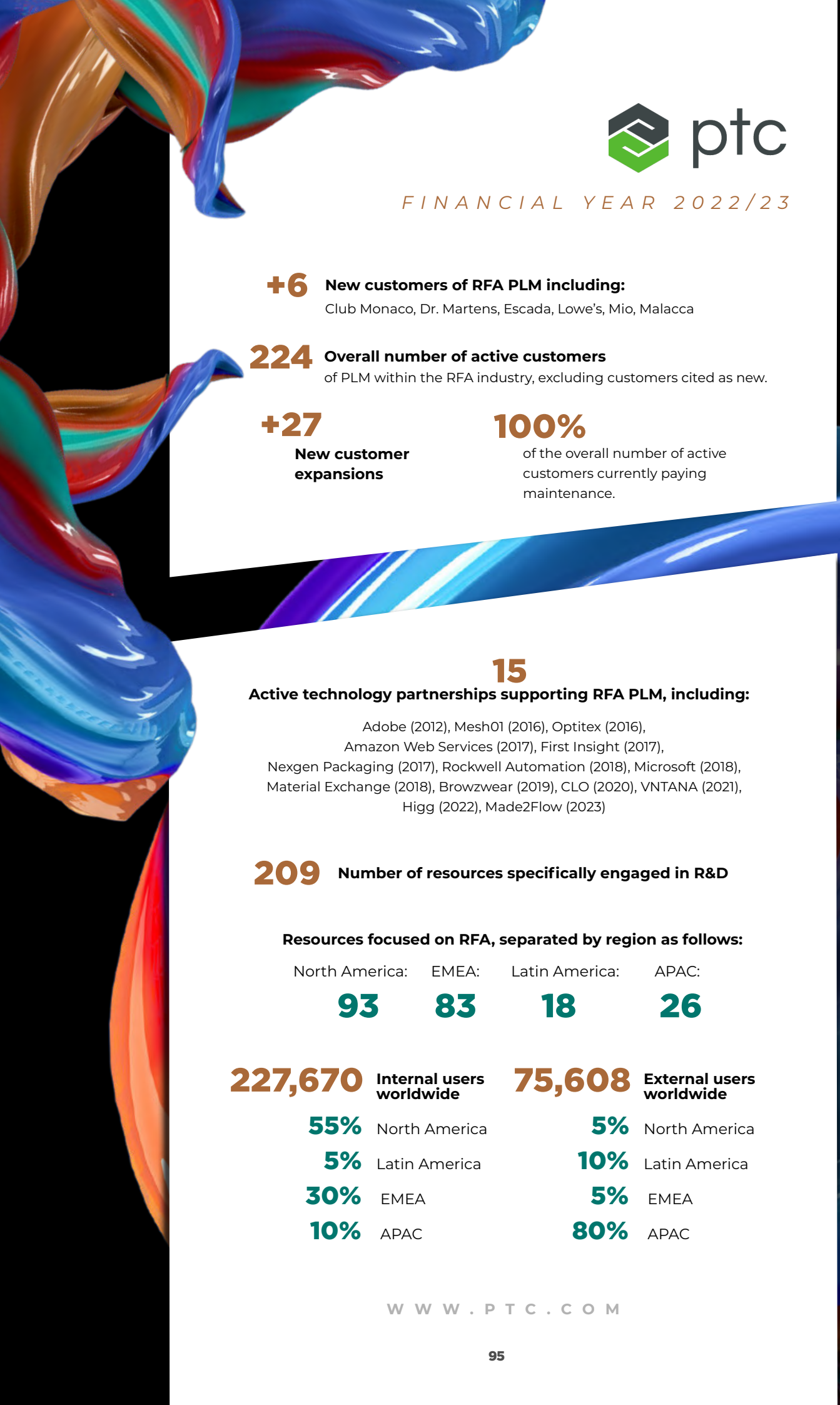
Lectra's ecosystem of SaaS solutions is adaptable to customers' constraints and challenges. The design of Kubix Link includes scalable technology. It adapts completely to the needs of customers. In fact, Kubix Link's is an all-in-one solution with embedded fashion PIM, PLM, DAM and more.

How do you see PLM's role in the fashion technology ecosystem evolving in the near future? How can it best support fashion's ongoing digital transformation?

While traditional PLMs have historically only satisfied the product development process, today's fashion landscape calls for more. Companies need technology that covers the entire design-to-sales process to meet complex consumer demands and environmental regulations.

Building a seamless fashion value chain is now paramount at Lectra. This is why we will continue to build synergies between our solutions.

For 2023-2025, the Group's aim is to develop further its current SaaS offers by providing a more consistent customer value proposition, bringing together existing products to create a unified system that helps our customer meet their business needs, serve their sustainability journey and have a positive impact on the society.



ptc

FINANCIAL YEAR 2022/23

+6 **New customers of RFA PLM including:**
Club Monaco, Dr. Martens, Escada, Lowe's, Mio, Malacca

224 **Overall number of active customers**
of PLM within the RFA industry, excluding customers cited as new.

+27
New customer expansions

100%
of the overall number of active customers currently paying maintenance.

15
Active technology partnerships supporting RFA PLM, including:

Adobe (2012), Mesh01 (2016), Optitex (2016),
Amazon Web Services (2017), First Insight (2017),
Nexgen Packaging (2017), Rockwell Automation (2018), Microsoft (2018),
Material Exchange (2018), Browzwear (2019), CLO (2020), VNTANA (2021),
Higg (2022), Made2Flow (2023)

209 **Number of resources specifically engaged in R&D**

Resources focused on RFA, separated by region as follows:

North America:	EMEA:	Latin America:	APAC:
93	**83**	**18**	**26**

227,670 **Internal users worldwide**

55%	North America
5%	Latin America
30%	EMEA
10%	APAC

75,608 **External users worldwide**

5%	North America
10%	Latin America
5%	EMEA
80%	APAC

3-4 Months
Average time taken for an RFA PLM implementation (SME)

85%
of installation time done digitally, on average (SME)

6-8 Months
Average time taken for an RFA PLM implementation (large enterprise)

85%
of installation time done digitally, on average (large enterprise)

Tell us what you feel has changed and/or advanced in your product offering this year to differentiate your company from others in the RFA PLM market.

Built for digital product creation, multi-category management and just-in-time development, FlexPLM introduces several new features:

- **An easy to use, modern**, and intuitive eComm-inspired user experience that puts critical processes, data, imagery, and actionable insights at user's fingertips.
- **Personalization features** that improve efficiency, while faster navigation and responsive layouts automatically adapt to almost any device and screen size, keeping users connected wherever they are.
- **An Excel-like experience** provides users with role-based or personalized views of their data that is easy to understand, modify and adjust. In addition, google-like search capabilities provide quicker access to critical product development data to improve speed, accuracy, and efficiency.
- **Leading DPC/3D collaboration**, visualization, and optimization capabilities as well as markup features, enable companies to effortlessly scale their use of 3D assets across the value chain.
- **Bi-directional integrations** with leading 2D and 3D design tools provide a seamless end-to-end digital product creation workflow, allowing designers to tap into full PLM functionality directly from their 3D workspace.
- **Industry-first functionality** to support the development of licensee and partner developed products that manages the briefing and approval process in one efficient and collaborative solution at scale.
- **Best-in-class integrations** with Worldly and Made2Flow enables brands and retailers to measure, manage and track value chain sustainability in greater detail than ever before.
- **Visual Line Planning** capabilities enable brand and retail businesses to digitize their line review processes, as well as empowering them to make smarter forecasting and merchandizing decisions, cutting line review preparation from weeks to hours.

CONTACT

ptc

Power To Create

From Planning to Market

- #1 Ranked Retail PLM
- Digital Product Creation
- Sustainability Management

ptc® flexplm®

#PowerToCreate / ptc.com

IN CONVERSATION WITH

BILL BREWSTER
SVP/GM RETAIL BUSINESS UNIT

The places software begins and ends are constantly changing as market demands shift, new innovations emerge, and fresh capabilities and integrations are added. Can you tell us what PLM means to PTC, and how you believe that definition has evolved over the last few years?

The disruptions of the last few years have changed the way retail organizations and their partners think about technology in general, but I think these global market shifts have also reaffirmed the fact that PLM is so vital to providing a foundational platform for end-to-end product development, as well as innovation, and the stability that fashion and retail companies need in a digital era.

We saw that being demonstrated during the pandemic, when many companies implemented FlexPLM to get ahead of what they saw as a permanent alteration in the nature of the way they design, develop, and ultimately bring products to market. They used the platform to build resilience and agility, unlock remote collaboration, and to futureproof their ways of working.

And last year was an outstanding year for PTC Retail. We've seen our customers, the world's most successful and well-known brands and retailers, from high fashion to sporting goods, outdoor, footwear, home décor and DIY leverage FlexPLM to reach new heights and accelerate their business growth, making even deeper commitments to their PLM strategies, such as bringing on board hundreds, in some cases thousands, of new users, or

taking advantage of our new advancements in UX, digital product creation, visual planning, and sustainability management, which have been accepted and hugely appreciated by our customers.

It's no secret that fashion and retail companies are very conscious of how trends are changing across several markets and geos, but if you look to the market leaders you can see that what they want from PLM is innovation, sure, but also certainty and stability. It's more important than ever for organizations to have a trusted source of truth, a reliable system for collaboration, and a proven secure platform that can help connect all the different tools they use across their design, development, and production processes to ensure that their new products align well to the latest trends and styles each season. It's what we call giving companies the "Power to Create".

So PLM, to us, means being a true enterprise partner. We've done that for the biggest brands in the world for close to 20 years, making sure that FlexPLM is ready to scale to meet any challenge or any opportunity. And we're doing it today for an even wider variety of companies, extending the same benefits to everyone through new deployments, new capabilities such as Flex Insights, and even smoother onramps to the core capabilities that are so essential right now.

Possibly the most prominent area of digital transformation at the moment is in 3D and digital product creation, or DPC. We've already talked about the disruption that gave rise to a lot of brands looking to digitize their design and development processes quickly, but this also coincided with a new level of maturity, fidelity, and value potential in digital workflows and assets. How do you believe PLM factors into that?

We're also seeing a huge leap in DPC capabilities and interest at the moment. I believe you identified in your DPC Report last year that this was one of the fastest-growing enterprise software segments, and that's reflected in the massive scaling-up of DPC strategies that has taken place in the last 12-18 months.

But we have to remember that 3D workflows are not new, and that scaling them effectively requires organizations to have the right foundational system in place (e.g. PLM) to let them extract value from digital assets everywhere, from in-house development processes to downstream eCommerce.

Those core capabilities we've been investing in building ourselves, and we've established the right partnerships to unlock. We pioneered the market's first native integration between PLM and leading 3D design and simulation tools to provide a seamless end-to-end digital product creation workflow, allowing designers to tap into full PLM functionality directly from their 3D workspace. And our leading DPC collaboration, visualization, and optimization capabilities enable companies to effortlessly scale their use of 3D assets across the value chain.

We realize there is a lot also happening in the pure digital space, but we see the biggest benefits of DPC - and retailers' biggest demand - being in these established workflows, where digital tools, assets, and processes help to drive smarter business decisions, and more agile, and more profitable routes to market for physical products.

If we extend out the idea that PLM should be the central hub for critical product data, it stands to reason that a PLM platform is also where users will want to go for product-level intelligence, as well as much broader insights, so tell us how that manifests itself when we think about business intelligence.

Think back to the climate retail is operating in today, and it's obvious how important it's going to be for organizations to have the capability to surface and act on new real-time and near-time insights.

Fashion and retail are complex industries, with lots of moving parts and competing priorities. Right now, though, the world is also moving around those industries, which is having a profound effect on retailers' ability to forecast, to accurately cost and plan, to achieve margin targets, to align well with the latest trends, and much more.

Success in retail today is increasingly being defined by how well an organization can predict or identify market demand, and then react to it, marrying very short product development cycles with flexible and nimble supply chains. Most fashion businesses, though, are not set up to act that way. Go-to-market timelines are long, data is siloed, and design, development, and product calendars are static.

FlexPLM is designed to be the most effective way to close that gap, to digitize the product development process, making it very easy to collaborate with existing suppliers or to onboard new ones, to get products to market just in time. As well as our visual line planning tool, which provides an intuitive, visual way for teams to work together and make smarter decisions, FlexPLM is also the first PLM platform with embedded AI. And just a few weeks ago, at LiveWorx, we launched Flex Insights to empower every user to extract data, deliver insights, and act on them in their own unique way.

The biggest challenge facing every industry today is sustainability, but it's an especially big-ticket issue in fashion and retail because the industry's footprint is so large. With tightening regulations and changing consumer expectations, how can PLM help brands and retailers to not just comply with the legislation but differentiate themselves based on their sustainability commitments?

FlexPLM has the largest global supply chain userbase of any PLM platform, and that gives us an unmatched ability to help our customers to gather, analyze, and start to disclose the kind of sustainability data that consumers and governments are demanding.

From a pure value chain transparency perspective, that level of visibility is massively valuable; if your suppliers already use FlexPLM, the odds of you being able to track the provenance of your products, their materials, and the processes that go into making them are increased in a major way.

In addition to our collaboration with Worldly, we also just launched a brand-new collaboration and integration between FlexPLM and Made2Flow, which will help our customers to move away from generalized averages and guesswork and towards scientific measurement of the environmental impact of their manufacturing processes - helping to close even more data gaps in the supply chain.

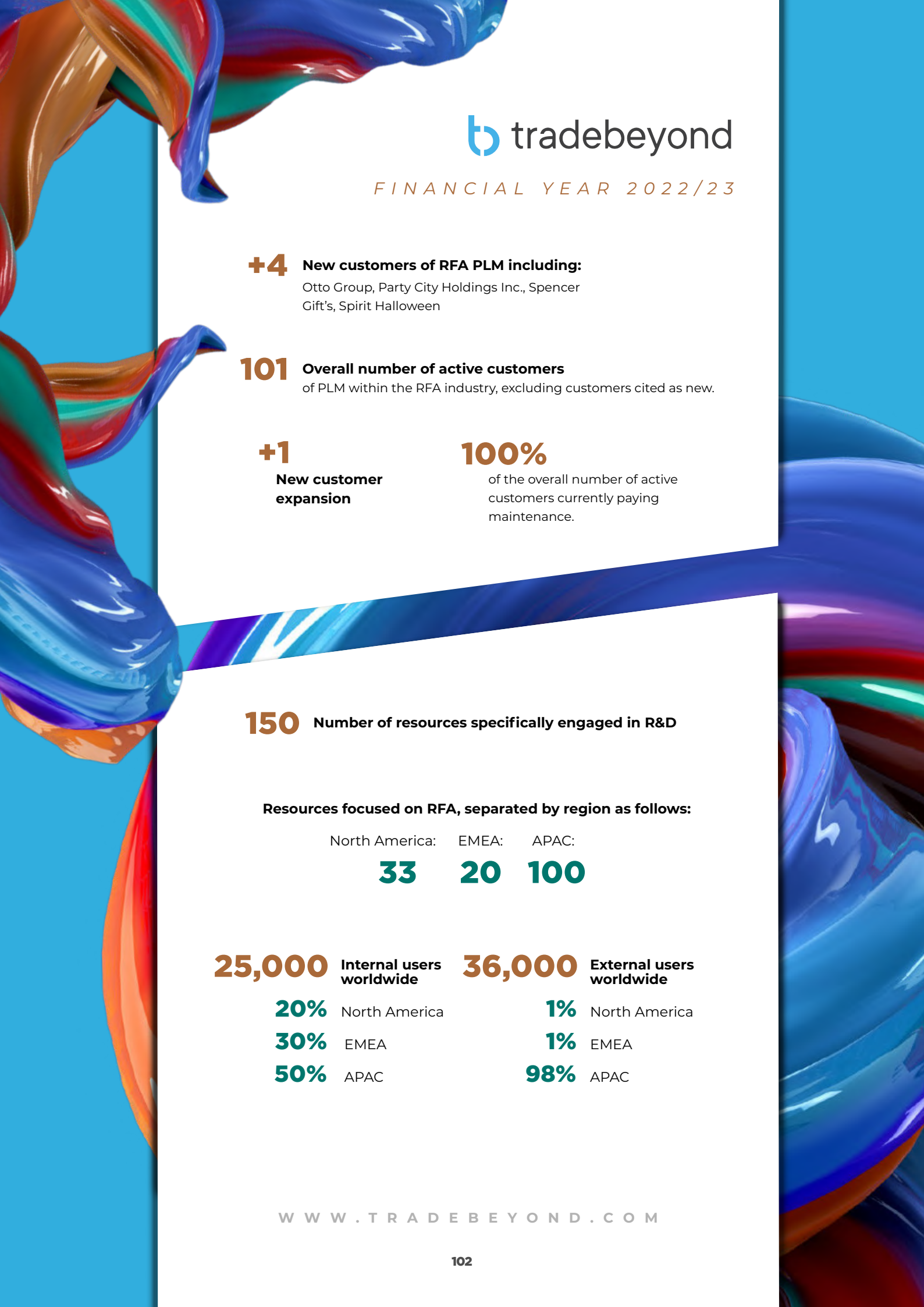
How do you see PLM's role in the fashion technology ecosystem evolving in the near future? How can it best support fashion's ongoing digital transformation?

We see PLM as both the stable bedrock for fashion and retail's future to be built on, and as an engine for the next levels of enterprise growth, DPC, integration and intelligence. The disruption that has shaped the last few years is not likely to end any time soon, so the future of digital transformation is being constantly written and rewritten.

When nobody knows what's around the corner, the most important roles PLM can fill are the ones that enable our customers to prepare themselves for any risk and any opportunity, and to build a competitive advantage.

FlexPLM is full featured, with a full suite of core capabilities that the most successful brands and retailers trust. From scalability, performance, and enterprise security to multi-category management and an easy to use, modern and intuitive user experience, our PLM platform is truly ready for the future.

Finally, I believe the additional value that the right PLM solution can deliver will come from how easily and effectively it can integrate with other enterprise solutions and cutting-edge technologies like AI, DPC, and impact measurement. And because we are committed to keeping as many FlexPLM customers as possible on a seamless upgrade path and the latest version of the software, that core reliability and those milestone innovations are now available to more users than ever before.



tradebeyond

FINANCIAL YEAR 2022/23

+4 **New customers of RFA PLM including:**
Otto Group, Party City Holdings Inc., Spencer Gift's, Spirit Halloween

101 **Overall number of active customers**
of PLM within the RFA industry, excluding customers cited as new.

+1
New customer expansion

100%
of the overall number of active customers currently paying maintenance.

150 **Number of resources specifically engaged in R&D**

Resources focused on RFA, separated by region as follows:

North America:	EMEA:	APAC:
33	**20**	**100**

25,000 **Internal users worldwide**

20%	North America
30%	EMEA
50%	APAC

36,000 **External users worldwide**

1%	North America
1%	EMEA
98%	APAC

tradebeyond

3-4 Months
Average time taken for an RFA PLM implementation (SME)

80%
of installation time done digitally, on average (SME)

6-12 Months
Average time taken for an RFA PLM implementation (large enterprise)

80%
of installation time done digitally, on average (large enterprise)

13+
Active technology partnerships supporting RFA PLM, including:

ERP: Oracle, SAP, Dynamics 365 and NetSuite (2015-2023)

3D: Adobe Illustrator (2017), Browzwear (2021), CloVise (2022)

ESG: Amfori (2021), Wrap (2022), Worldly / Higg (2022), RESET Carbon (2023)

Testing / Inspection / Compliance: SGS (2019), Bureau Veritas (2021), QIMA (2022)

Tell us what you feel has changed and/or advanced in your product offering this year to differentiate your company from others in the RFA PLM market.

- Supply Chain mapping – Transparency, vendor hierarchy and scorecard, to nth tier, from raw materials to finished goods. More ethical and responsible sourcing
- PO Chain of Custody documentation
- Wrap integration
- Higg integration
- Real time container load track and trace
- Line planning
- PTC FlexPLM integration

CONTACT

tradebeyond

The Platform That Goes Beyond PLM

Collaboration

Build line boards, finalize designs, and approve samples with unparalleled efficiency.

Speed

Cost products in real time and bring merchandise to market faster.

Sustainability

Compare and mitigate the environmental impact of designs and materials.

Demand More From Your PLM!

Streamline your entire supply chain.

Unlike traditional PLMs that only cover product development, TradeBeyond's platform optimizes design, sourcing, supplier management, quality, order management, and logistics, eliminating costly errors and redundancies at all stages. **Now that's power.**

tradebeyond.com

tradebeyond

IN CONVERSATION WITH

ERIC LINXWILER
SR. VICE PRESIDENT, RETAIL SOLUTIONS

The places software begins and ends are constantly changing as market demands shift, new innovations emerge, and fresh capabilities and integrations are added. Can you tell us what PLM means to TradeBeyond, and how you believe that definition has evolved over the last few years?

Product Lifecycle Management (PLM) means different things to different people. In the world of fashion, PLM installations have been (and still are) used by retailers and brands predominantly for management of product development – e.g., capturing product specifications (techpack), collaborating, reviewing and tracking product assortments/lines, reviewing and approving samples, etc. At TradeBeyond (as our name implies) we feel product development is crucial but still only part of the extended supply chain that retailers and brands must get better at in order to compete in delivering products to market faster, at the right price and quality, and more than ever delivering products that are sustainable and socially responsible.

Today, the visionary leaders in the space are expecting more from their PLM systems and this creates opportunity for innovation to support growth. The CBX PLM is part of an extended supply chain management platform designed exclusively for Retailers, Brands and Trading Companies that are seeking a composable, multi-enterprise collaboration network that extends well beyond traditional product development, materials management and supplier collaboration. The CBX footprint covers the full breadth of requirements needed to realize true extended supply chain optimization and automation from Product Concept to Delivery. More importantly, we see the CBX PLM as an enabler for the enterprise to open visibility to the further points upstream and downstream. We believe the PLM system should be the control tower that uses data from within as well as from an interconnected community to drive real-time decision execution to increase speed while adhering to corporate and globally responsible outcomes.

What are the big changes you've seen in efforts for supply chain digitalization over the last twelve months? What's driving that desire for greater knowledge, control, and collaboration? And how are brands and their partners approaching it?

Supply chains are extremely complex and realizing supply chain digitalization end to end is a daunting journey. This said, the leading organizations recognize that the only path to more agility, resiliency, and transparency within their supply chain is to move beyond what the enterprise-centric Supply Chain Management (SCM) system can deliver and instead embrace a multi-enterprise collaboration network approach to gaining broader visibility. Supply chain operations include so much more than simply off loading, cross docking and delivering. Best in class supply chain leaders understand they need to see much further upstream, midstream and downstream in order to make better decisions. To do this there must be connections to partners, networks and applications that sit outside the four walls of their organizations. The CBX PLM is constructed to be open to receiving and exporting data among any number of systems and transaction networks, connecting the people, processes and systems that make up a comprehensive connected cloud community.

Both existing and upcoming ESG regulations are going to have profound implications for how retailers, brands and manufacturers operate. What assistance can customers expect from PLM? How can having product data centralised and integrated help users to comply with the letter and the spirit of the law?

To adhere to the global legislation and import constraints put on retailers and brands today, it is no longer enough to rely on the PLM only as the central repository for product data. Today, Customs and Border Protection agencies around the world can withhold the release of merchandise until digital documentation can be presented which clearly illustrates all the supply chain entities that are connected to a specific purchase order. This is only possible if your PLM is capable of being the system of record for all actors

in your supply chain as well as being your purchase order follow up tool and your central product data repository. Assuming these capabilities exist on a single end to end platform such as CBX PLM, only then can you produce a digital Chain of Custody on demand when challenged.

Deloitte conducted a survey last summer that gave rise to the inescapable conclusion that sustainability is a "business imperative" rather than just a compliance exercise. Thinking beyond regulations, how can PLM - and specifically your platform - enable users to start differentiating themselves through their environmental and humanitarian actions, and to make sustainability a cornerstone of their business?

Yes, the market narrative is no longer "when" but rather "we need to act now." Our existing Customers and new brand partner opportunities are coming to us now on a daily basis and asking what more in the CBX PLM can be mobilized to assist in addressing imperative sustainability initiatives. For example, using the Supplier Engagement Management cross modular messaging tool – CBX users go far beyond old hack score cards and dashboards. The CBX PLM is used as a campaign and collaboration platform on which the brand and supply chain partners are in dynamic communication working to joint improvement plans for ensuring transparency and adherence to human rights standards. CBX PLM serves as the conduit to align the Brand's comparative values and behaviours directly with the supply chain partner's commitments.

Beyond the benefits of core product data, PLM platforms are now evolving rapidly to support other processes and unlock new ways of working. How is TradeBeyond approaching its own innovation roadmap to respond to what the market wants today, and what it might need tomorrow?

Just as our name now implies, TradeBeyond is in constant motion when it comes to evolving our core platform to respond to the demands of the market. We also believe that we do not have all the best answers nor solutions native to the CBX PLM application. As such, we have been hyper aggressive this past year in establishing key strategic partnerships with industry players such as Worldly and leading testing and inspection companies that push data into the CBX PLM application that is related to supply chain partner performance, capacity and governance; all of which ties back directly to the core product data already developed and housed in CBX.

How do you see PLM's role in the fashion technology ecosystem evolving in the near future? How can it best support fashion's ongoing digital transformation?

Sourcing more sustainable, independently labelled raw materials has become a strategic choice for leading brands, retailers, and manufacturers seeking to reduce the environmental footprint of their products and reduce exposure to environmental and social risks within the supply chain. At TradeBeyond we are taking on more projects that require deep dives into raw material management strategies and execution; brands are expecting now that a tier one PLM can help to support their needs in this area or otherwise be able to integrate with and work closely with niche partners in this space enabling a single view of actionable data.

PLM CONSULTANT PROFILES

The purpose of this PLM Report is to provide you with the information you need to make informed decisions when investing in PLM and extended PLM technologies tailored specifically for the retail, footwear, and apparel industry. And that means more than just choosing software.

Truly modern PLM and digital transformation projects extend beyond the software level. The entire business undergoes significant change, requiring experienced, independent advisors to ensure successful PLM project outcomes that acknowledge just how all-encompassing a multi-stakeholder PLM initiative can be.

To support that broader horizon of digital transformation, we have invited a select few apparel PLM consultancy practices and advisors to provide insight into their method, and to share their current perspective on fashion ongoing digital transformation. The profiles that follow are intended to help you make informed decisions about which advisory practice to work with at the different stages of your PLM project.

If you are looking beyond these listings, it's also important to remember that not all consultants are equal. A new apparel practice from a business that has traditionally focused on different sectors should not be compared to a proven advisor with extensive direct domain experience in the retail, footwear, and apparel industry. Although larger consultancy practices may provide more comprehensive management services, you should distinguish between broad strategic services and the detailed knowledge possessed by long-serving apparel industry specialists.

A further consideration is the role that you would like an advisor to fill. If the task you need support with is solution shortlisting and selection, then bear in mind that some consultancy practices obtain the bulk of their work from a single vendor in a partnership arrangement, increasing the likelihood of that advisor preferring to work with a particular solution. This is obviously less of a factor if you're looking to work with an advisor on cultural change and other elements of a PLM project that occur after the software has been chosen, but the impartiality of any advisor is something that should be subject to scrutiny.

As fashion technology decision-makers, you are not the only ones interested in the experience, expertise, and international reach of consultancy practices and advisors - as the partnerships we alluded to above suggest. Vendors and advisors often forge long-lasting partnerships that allow software companies to bolster their services offerings without having to massively scale their in-house capabilities. In practice, though, this means that vendor and advisor become closely aligned from a branding perspective, and successful delivery of the PLM project (or otherwise) ends up reflecting on both parties.

Finally, please remember that this PLM Report does not contain any analysis or evaluation of the consultancy practices listed in this section. Instead, we encourage you to undertake your own due diligence when working with any third party, whether selected directly or nominated by a vendor partner.

Which PLM solutions / suppliers do you work with? If your services are vendor-agnostic, please say so.

PTC'S FlexPLM for the RFA domain.

List your implementations of PLM within retail, footwear and apparel to date.

Below is a selection of our most advanced & strategic implementations over the past 20+ years:

Apparel:

- One of the world's leading retailer that owns some of the iconic outdoor, active and workwear brands
- One of the world's leading sporting goods retailers based in Europe
- Major US designer and retailer of kids apparel

Footwear:

- World's leading sports goods brand based in Oregon.
- A retailer that designs and sells superior running shoes and apparel based out of Seattle.
- A global leader that designs and offers innovative footwear, apparel, and accessories.

Retail, CPG & Others:

- Manufacturer and marketer of consumer products based out of Atlanta
- World's largest retailer
- World's leading retailer that markets and sells merchandise through its U.S. Televised shopping programs, mobile apps, websites and OTT platforms.
- One of the world's largest wholesaler to leading retail brands in the RFA space.

What do you consider your practice's strategic, tactical and implementation strengths to be in the region of retail, footwear and apparel lifecycle?

With more than 2 decades of strategic partnership with PTC, DxP Services is the largest SI in the PTC RFA eco-system, including those based on FlexPLM. DxP Services has an on-going close business relationship with PTC's Product Management and Customer Success.

Based on its diverse experience, DxP Services has accumulated vast knowledge to create differentiated offerings that provide 360° coverage on client needs for Advisory Services, Implementation, Migration, Integration, Managed Services. This experience is Captured in the form of Differentiated Solutions consisting of various Accelerators and Industry Templates. DxP Services has a Global presence across Americas, Europe and APAC.

In the RFA space, DxP Services has a core team of 250+ Consultants and Analysts, with Domain & Technology expertise delivering services to our clients.

DxP Services uses a Business Process oriented approach with a mix of Category Specific Accelerators and has a portfolio of Role based Apps, that helps achieve Quick Value Realization for its clients. Using this approach, DxP Services has successfully engaged with 100+ RFA clients, including some of the top brands in US and Europe.

DxP Services
an ITC Infotech Brand
Business Performance. Delivered

Please provide the number of qualified domain experts you have specifically focused on implementations in the RFA sector, separated by region as follows:

North America:	EMEA:	Latin America:	APAC:
50	**25**	**5**	**170**

Tell us what you see as the two most important emerging trends for retailers and brands (particularly fashion, footwear and accessories) in the coming year?

Retailers must offer Styles that are in sync with Fluid Fashion Trends, Sustainable and Competitively Priced.

Two of the Emerging Trends in Technology that can help Retailers offer such Styles are:

- 3D Expansion across the entire PLM process, by enabling the Digital Thread using Interconnected 3D Platforms that support a seamless process from Design to Techpack to End-Customer.

Interconnected 3D Platforms will ensure that Pre-Production Assets are seamlessly consumed into the Production Phase and End-Customer Facing Tools like E-Commerce Sites and Virtual Fitting Rooms within stores, thereby enabling Faster Turnaround of Styles.

- AI Driven Analytics around Fast Changing Fashion Trends and Customer Expectations.

Retailers will gather Actionable Insights using Data on Social Platforms and across Competitor Sites to understand the Pulse of the Market. Equipped with this 6th Sense, they will be able to optimize their offerings, in Variety and Depth apart from addressing Cost & Quality Expectations.

Tell us what you see as the two most important emerging trends for supply chain manufacturing (particularly fashion, footwear and accessories) in the coming year?

Clients in the RFA segment need to Address Challenges arising from:

1. Environmental Social Governance
2. Supply Chain Disruptions

1. Retailers will be adopting a model that enables them to Establish Credible Sustainability and Transparency Benchmarks, that can be used to back their claims and help counter “Greenwashing” allegations.
Some of the key initiatives will be:

- Integrating their PLM Process with Sustainability Platforms like HIGG
- Adopting Standard Material Classification through Material Exchange or similar
- Using digital tools for Optimum Packaging Design

2. They will also Focus on adopting practices that ensure Better Visibility and Control over their Supply Chain and Ability to Make Quick Adjustments against disruptions.

Some of the key initiatives will be to:

- Adopt Control Tower for end-end visibility across the supply chain.
- Manage information across Tier 1-4 supplier base.
- Optimizing their Inventory mix through better Prescriptive and Predictive analytics.

CONTACT

DxP Services
an ITC Infotech Brand

ITC INFOTECH
Business-friendly Solutions

LEADING RFA'S
DIGITAL TRANSFORMATION GLOBALLY

BUSINESS PROCESS ORIENTED

DIGITALLY OPTIMIZED

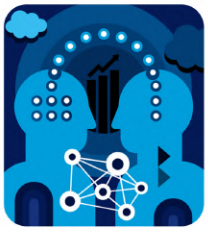
ACCELERATOR ENABLED

360° PLM SERVICES

Consulting

Implementation

Deployment



Adoption

Migration

Managed Services

DxP Services is ITC Infotech's specialized business unit focused on helping Customers achieve their end-to-end PLM Digital Transformation Goals by realizing the Digital Thread through its strategic partnerships in the RFA space. DxP Services offers an optimum mix of **Domain Expertise, Category Specific Accelerators** and **Apps** to deliver quick value to its customers.

Scan QR Code to Know More

DxP Services
an ITC Infotech Brand
Business Performance. Delivered

IN CONVERSATION WITH

PATRICK BIONDUCCI
HEAD OF DxP SERVICES

The places software begins and ends are constantly changing as market demands shift, new innovations emerge, and fresh capabilities and integrations are added. Can you tell us what PLM means to DxP Services, and how you believe that definition has evolved over the last few years?

At DxP Services, we define PLM as a platform for product innovation that provides a "single source of truth" for product data throughout the whole life cycle of the "product" and accelerates development. It facilitates strategic collaboration across Geographically dispersed, multi-disciplinary teams, thereby reducing development time, minimizing costs and improving quality of products.

In the RFA context, the above translates to all the processes and activities from Style Ideation – Adoption (for Purchase). Thus, it covers the steps related to gathering inspiration and design trends, planning, creative design, generating the techpack, sampling, costing and style/line adoption.

Owing to the growing complexity of business, there is an increased focus on going digital. However, no one platform can support the digital push. As a result, over the last few years, PLM has evolved from just being a software tool to a business strategy - supported by multiple specialized tools and technology stacks – to continuously improve existing products and foster innovation in new products.

To manage ideation, the PLM gathers information through "voice of customer" platforms. This provides designers with the required insights to align their styles with the latest trends/consumer expectations.

The styles (designs) and the other elements (e.g., Materials) of product creation are managed within the core PLM system, however, the style artifacts (avatars, renderings) are created/updated in the 3D tool. This 3D digital twin matures not only across the stages of product development but is also shared across the entire retail value chain.

Further, PLM is constantly receiving inputs across omni-channel platforms. Such inputs in the form

of sales data, customer feedback etc., are used to drive planning and new product development and refine existing ones.

Finally, PLM is playing a key role to support CSR/ESG initiatives. Although these are primarily related to the supply chain, but the data points that help achieve the targets and ensure accurate reporting reside in PLM.

One of the biggest promises of PLM has always been that it offers a "single source of truth," and that's something that's become even more important as the technology landscape has widened. From 3D / DPC to AI and supply chain management, there's a stronger argument than ever for brands to have access to a single centralised location of critical product data that also hooks into their ever-evolving technology ecosystem. Do you believe PLM is still the right source of truth, and how do you help brands and retailers to integrate it with new and existing solutions?

The answer to whether PLM is the "single source of truth" for critical product data lies in how we define PLM. This is because the definition decides what data PLM owns and by extension its ownership of critical data. What we have observed across organizations is that the respective PLM definition is driven by multiple factors including – business process and data ownership. Some identify PLM with the set of activities from Ideation – Techpack, while others define PLM as the end-end process from Ideation – Sale (or even End of Life).

At DxP Services, we believe that PLM covers the set of activities from Style Ideation – Adoption (for Purchase). Accordingly, for us, PLM is the "single source of truth" for the data managed across all the processes within this bracket. Such data is product development data, and PLM owns it. However, product development data alone is not critical product data. This is because there is significant product data generated post-style adoption. Owing to the ever-evolving technology ecosystem, such data resides across multiple systems.

We believe “one version of truth” is driven by data owned by the respective system. Thus, instead of one system, the truth now resides across multiple systems (based on the established data ownership criteria). Accordingly, PLM is “one version of truth” for product development data.

Now how to meet the data needs across the ever-evolving technology ecosystem? We believe that the best way to manage is to take the data lake and data warehouse approach. The former being unstructured data and the latter a master (central) repository of structured data owned by respective systems within the organization. This arrangement ensures three things – clear data ownership across systems, easy access to clean data “one version of truth”, and democratization of data by removing any system-specific data structure.

Once established, inbound integrations can be built between the respective data-owning systems to the data lake (e.g., based on our discussions above, product development data will come from the PLM system). Similarly, outbound integrations can be built with any existing or new system to consume the data from the data warehouse. Any legacy or new system can hook up to the data warehouse to consume the data to address respective process needs.

While developing integrations with PLM, the need is to ensure that core PLM data related to style elements (product details, BOM, colourways, cost, etc.) seamlessly flow to downstream systems. At the same time PLM is able to receive data for supplier, sales, inventory, etc. We are helping our customers build such integrations based on their individual data needs in terms of – data volume, exchange frequency, # of systems, etc. In doing so, we use APIs that are readily available across most systems. While we are comfortable with all integration approaches, we do see a preference for the hub and spoke model. It ensures integrations are scalable and able to accommodate the need for changes over time. Further, from our experience across implementations, we have developed integration frameworks. These readymade frameworks ensure - faster implementation and adoption of universal best practices.

To conclude, PLM owns “one version of truth” for product development data and is the right source of truth for this data.

There’s been a fairly rapid move away from on-premise, customised software implementations and towards cloud-native SaaS deployments - especially, but not exclusively for small-to-medium sized brands. Is that trend now reaching the larger enterprises? And if so, how are you helping them to approach that transition?

We are all privy to the latest debacle in the Retail Industry - Year 2023 is riddled with the news of major retailers facing a steep business downturn and sharp decline in revenues leading to bankruptcies, layoffs and store closures. This begs the question – “What’s the root cause”?

Those brick-and-mortar retailers who continued to rely on traditional physical store footprint are simply being obliterated by the competition that have a well-established online e-commerce presence, that can reach out and connect with the changing buying preferences of the more tech-

savvy consumers and adapt to this change quickly, in the post-covid era. This, in addition to being blindsided by the supply chain disruption with little to no plan B. This leads to the question - "What needs to change"?

Is it going to be reduction in capital expenditure & time to market, increased focus on product & process innovation and quality, improve operational efficiency, information traceability and transparency, product compliance & sustainable? The answer is – all of the above. The daunting question is - "How"?

While the complexity and variety of the product offerings of a large versus a medium-sized enterprise are quite different, both want the benefits of a Cloud-based PLM solution– Cost-effective, Instant availability, Secure, Scalable, Interoperable, Configurable and OOTB.

As System Integrators, we recognize the need of the large enterprise, i.e., while staying as close to capability-rich OOTB features, they want to provide a "Right-For-Me" tailored end-user experience. We, at DxP Services, have developed packaged solutions to enable the persona-based desktop apps, that provide just that.

This enabled the PLM solutions hosted in cloud to be OOTB without the customer acquiring any technical debt of customization and PLM can be upgraded independently without needing to update the app.

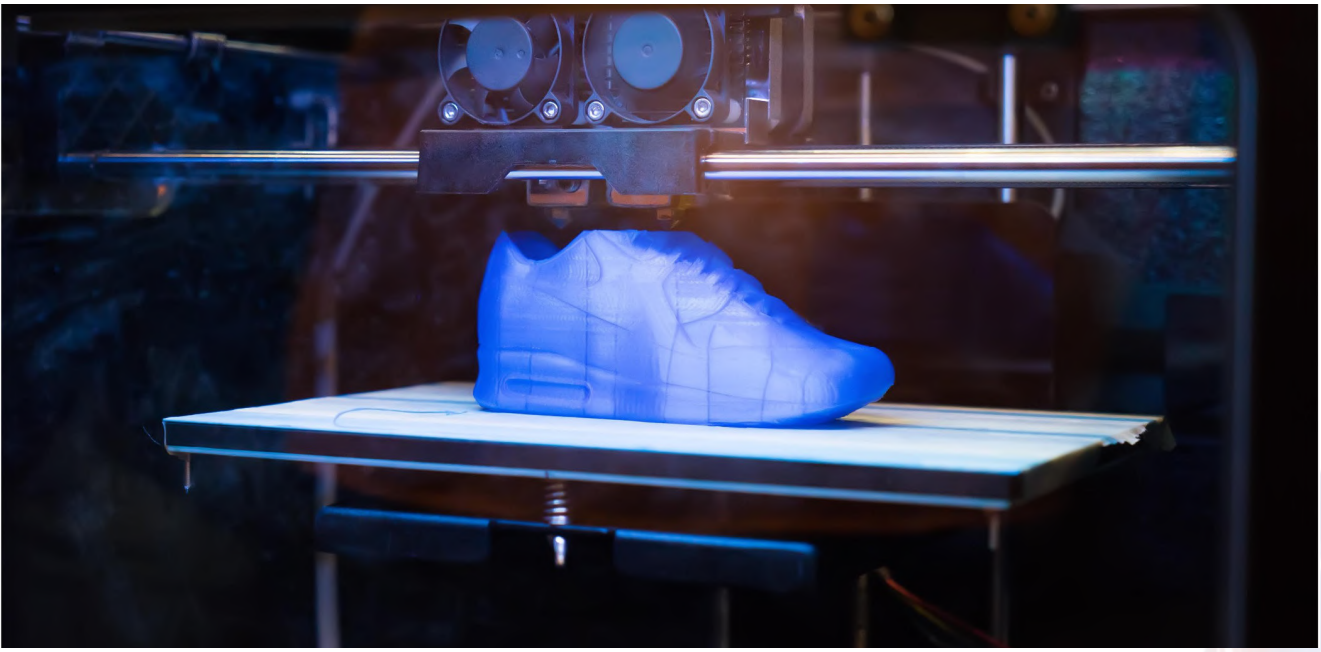
Other popular packaged offerings include Line Board App that helps Virtual Innovation, Automated Product attribution using AI (Artificial Intelligence), AI Image Recognition, etc.

Additionally, we have invested in DevOps, which streamlines software building, testing and release, thereby enabling CI/CD automated deployment and testing tools.

To summarize, post-COVID has revealed several vulnerabilities in the industry and the need to change fast and adapt to customer's digital preferences has been a priority for survival. SAAS / Cloud is the fastest enabler for time to value, allowing an organization to achieve a faster, effective digital transformation regardless of size. SAAS is now mainstream and a more viable and accepted delivery mechanism. The time to start is now!

Every sector of the fashion value chain has seen huge disruption in the last few years, and continuing uncertainty is placing a big burden on core business systems like PLM, which are being asked to help brands, retailers, and manufacturers to reduce costs, become more resilient, and build greater agility into their routes to market. How do you see PLM enabling those things? And how does DxP Services approach PLM projects as engines for thriving in difficult times?

The key to enabling brands, retailers, and manufacturers to reduce costs, become more resilient, and build greater agility into their routes to market is – a predominantly digital process, end-end visibility, data-driven decisions and elimination of process redundancy. PLM will help achieve all the above by enabling the digital thread, data governance, traceability, and one version of the truth. In doing so, PLM will use technologies like - 3D, Analytics, AI and Automation.



3D is the core enabler of the PLM digital thread. We are already seeing how using 3D is significantly reducing time and cost of developments. Going forward, we expect the 3D digital thread to facilitate a seamless flow of digital artifacts across the end-end process. Apart from enforcing "one version of truth" it will also ensure the reduction of physical assets across the entire cycle.

Similarly, the use of Analytics (especially AI-driven analytics) will help in getting actionable insights from data across the entire value chain (especially end-customers and competitors). This will drive quick and informed decision-making within the PLM process. Use of Generative AI in design is another area that is expected to significantly improve agility by speeding up the PLM design and packaging process multi-fold.

Lastly, automation will help to make the PLM processes faster and free up creative minds from routine day-day activities, thereby increasing overall productivity.

Our approach to PLM projects has 3 elements – business process, digital optimization and quick value realization. We ensure that the PLM-driven business process is seamless with minimum redundant and non-value-add activities. In addition, we try to ensure that all processes are geared towards enforcing the digital thread (as against being executed outside of any system).

Further, we work towards optimizing the number of digital tools/platforms that drive the PLM processes. We also work to achieve minimum functionality overlap across the systems driving end-end business activities (of which PLM is a part). This is to ensure maximum utilization of capabilities and minimum cost of ownership.

Finally, using category-specific accelerators, we ensure that the customers have an early start to their PLM journey and can reap the benefits of their investment. As part of the ongoing PLM journey, we establish core KPIs for PLM that help our customers gauge the success of the initiatives and identify the areas that need corrective action.

Sustainability and transparency strategies have now shifted gears, from being marketing-driven to being essential keys to CSR / ESG compliance and overall operations. How is PLM working to help brands, retailers, and their partners to make that move? And what does supply

chain visibility and transparency actually look like from a practical perspective?

At the heart of any CSR/ESG compliance is the product development data. Such data resides in the PLM system. Therefore, PLM is expected to be at the forefront to enable retailers to meet their CSR/ESG goals.

PLM manages - product, material and supplier. All elements required to report on sustainability and traceability. As part of planning, it also captures the targets to compare the actuals (once development is complete). In doing so, it enables brands to get clear visibility on progress made from season to season. In addition, it ensures that retailers and partners can base their CSG/ESG claims on data that is accurate and available in their system.

For enabling sustainability, leading PLM solutions are building the capability to calculate the sustainability scores using global standards like HIGG. This ensures that the respective sustainability scores (across product, material, or supplier) are available in PLM. This information is used to identify CSG/ESG impact against the use of specific material or supplier or to run what-if scenarios across available alternatives. It can also be used by them to clearly define what according to them constitutes a sustainable material or style. Similarly, for transparency, PLM solutions are managing the repository of suppliers and their relationships. Presuming that the Tier 1-4 supplier data is available, it gives end-end visibility of the entire supplier ecosystem. When associated with the material or style within PLM, it enables visibility to the entire supply value chain corresponding to the material or style.

However, the ground reality is a bit more complicated. As the Fashion Transparency Index 2022 Report indicates, there is a tendency to disclose plans/targets publicly but not actuals achieved. We believe this is because of some practical challenges.

There are multiple sustainability standards in vogue. E.g., We have SAC, Global Organic Textile

Standards, and Better Cotton Initiative, to name a few. It is challenging to set up the data parameters required for each of them. In addition, there is a need to keep track of current vs future changes to these standards. Further, sustainability reporting needs vary by country where the style is eventually offered in. So, it will be fair to say, PLM capability to enable the sustainability score is a good starting point, but there is a long way to go before the process is firmly established.

As regards transparency, the multi-layered supply chain is notoriously opaque. More so in the current geo-political situation, when companies are trying to balance near-shore with off-shore to off-set supply chain issues. It will take considerable time before all the layers and their interrelationships are clearly identified. E.g., As per GEODIS, only 6% of companies have visibility across their entire supply chain. Thus, the biggest challenge lies in getting accurate information and mapping across the Tier 1-4 suppliers that can be managed in PLM. Till the entire set is mapped, PLM is helping brands and retailers to accurately report the tiers for which information is available.

How do you see PLM's role in the fashion technology ecosystem evolving in the near future? How can it best support fashion's ongoing digital transformation?

We see PLM at the core of all fashion technology initiatives. It will continue to be an indispensable

element for DPC (digital product creation) and play an increasingly important role in enforcing the digital thread across the entire fashion value chain (Ideation – Adoption and beyond).

On one side, PLM will continue to be the "one source of truth" for all product development-related information; on the other, it will facilitate the re-use of digital artifacts generated during the development stage in production and for building customer-facing experiences. In addition, PLM will be integrated across multiple platforms (e.g., POS, social media, etc.) to incorporate and utilize the data insights available from them to make the end-end process faster, smarter and agile.

In the post-COVID world, fashion's digital transformation has been driven by – increasing customer expectations, geo-political events and awareness towards ESG. Thus, the need is to address fashion that is "Fluid" and expected to be "Eco-friendly."

For the first (Fluid), it will be important to have the ability to identify the trends and adjust accordingly to support "Fast Fashion." For the latter (Eco-friendly), the ability to manage the information and have visibility across Tier 1-4 stakeholders within the supply chain will be critical. We believe modern PLM systems will be able to support both, using functionalities and features driven by AI, Data Analytics and 3D.

Adjusting to fashion trends will be facilitated using advanced PLM dashboards that provide insights based on analysis of data related to "voice of customer" and "ongoing sales" to drive planning, development, and assortment offerings. This analysis is expected to be granular to the "attribution" level. A key aspect of this will be the use of "predictive" and "prescriptive" recommendations from AI engines to help stakeholders adjust quickly. This will add efficiency to the process and agility toward response to changing expectations.

Another aspect will be the integration with 3D platforms. The use of 3D will not be limited to product development alone. Instead, PLM will extend the use of Digital Twins across the entire fashion value chain, thereby making the process seamless and efficient. The use of 3D artifacts will also facilitate reduction in waste at the Sampling (fewer physical samples) and Production (less wastage during cutting of fabric) stage, thereby helping fashion to meet sustainability targets.

Last, but not least, PLM will help store the information related to the entire vendor ecosystem by mapping the relevant Agent-Vendor-Factory relationships. In addition, it can be used to capture the corresponding social governance and sustainability scores. This information can then be used to accurately report the overall Product scores based on the Style assignment to such Vendors. Apart from ensuring better decision-making during the development stage (e.g., which Supplier to assign the Product), it will also help accurate comparison and reporting on ESG initiatives.

To summarize – PLM will help increase efficiency and agility within the activities from Ideation – Adoption and enrich the value chain by enforcing the digital thread.

Which PLM solutions / suppliers do you work with? If your services are vendor-agnostic, please say so.

Ptex Solutions, an Infor Alliance Partner, specializes in implementing PLM for companies in the retail, footwear and accessories industries.

List your implementations of PLM within retail, footwear and apparel to date.

What began as a partnership with Freeborders PLM 19 yrs ago, evolved with Lawson Fashion PLM and strengthened with Infor PLM for Fashion. Till today, Ptex Solutions has been involved in more than 90 PLM implementations across the world.

Recent customers include:

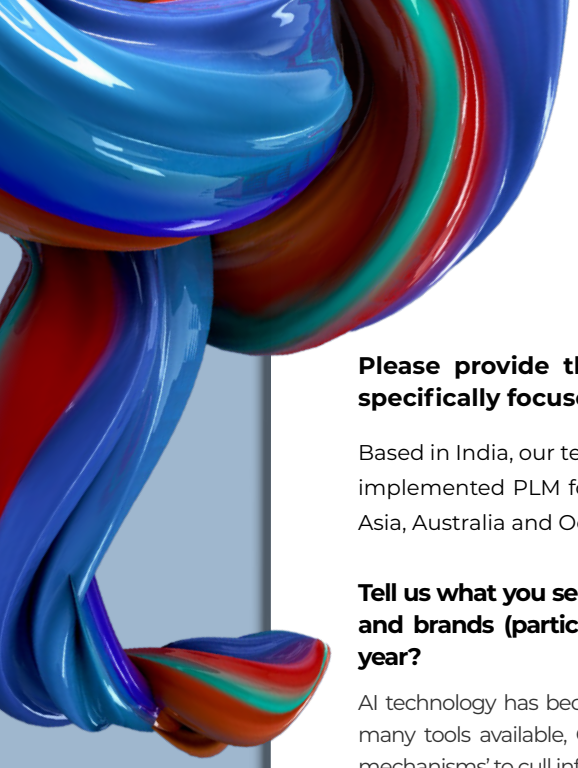
- American Exchange, USA
- By Malene Birger, Denmark
- Dynamic Designs, USA
- Eurosko, Norway
- FitFlop, UK
- Fred Perry, UK
- Fristads Kansas, Sweden
- Future Retail, India
- Graniti Fiandre, Italy
- Hejco, Sweden
- Horseware, Ireland
- Laces, Canada
- LC Waikiki, Turkey
- L Fashions, Finland
- LTP Limited, Lithuania
- Karl Lagerfeld, The Netherlands
- Outpac Designs, Hong Kong
- Rocky Brands, USA
- Salling Group, Denmark
- Spykar Lifestyle, India
- The Apparel Group, USA
- Tiger of Sweden, Sweden
- Vida International, USA
- Voice, Norway

What do you consider your practice's strategic, tactical and implementation strengths to be in the region of retail, footwear and apparel lifecycle?

Ptex's greatest strength is our team, which reflects a balance between industry and PLM expertise. Our Business Consultants have either graduated from fashion institutes or worked in the industry prior to joining the company.

Experienced, efficient, effective, engaging and thoroughly professional, our team embodies the customer-focused approach that differentiates our company.

Having been associated with PLM for almost 20 years, we believe in the power of PLM and continuously engage with our customers to drive PLM-enabled digital transformation.



Please provide the number of qualified domain experts you have specifically focused on implementations in the RFA sector:

Based in India, our team of 40 Business and Technical Consultants has successfully implemented PLM for the RFA sector across countries in North America, Europe, Asia, Australia and Oceania.

Tell us what you see as the two most important emerging trends for retailers and brands (particularly fashion, footwear and accessories) in the coming year?

AI technology has become increasingly prevalent in the fashion industry. While there are many tools available, ChatGPT has garnered the most attention and uses 'self-attention mechanisms' to cull information from sources such as the internet to produce text.

ChatGPT applications can help fashion brands and retailers drive digital transformation across multiple fronts. Examples include:

- Marketing & Sales: Based on style preferences, size, or budget, Intelligent Virtual Assistants (IVAs) can help customers make sustainable fashion choices.
- Customer Service: IVAs can provide customers data on environmental impact measurements with parameters like carbon footprint, water and power consumption as well as sustainability attributes of different fabrics, manufacturing processes, and supply chains.
- Business Operations: AI can help manage the supply chain by predicting demand, optimising inventory levels, and improving sustainability practices. It can also help manage the supply base by analysing historical data to recommend suppliers based on capability and track record.

Tell us what you see as the two most important emerging trends for supply chain manufacturing (particularly fashion, footwear and accessories) in the coming year?

AI is here to stay. It helps nearly all parties in the fashion ecosystem and is being used to drive enterprise-scale transformation.

For example, Digital factories are transforming apparel manufacturing. Manufacturing companies are transforming production and supply chains by digitising, standardising, optimizing and governing operational processes and work activities.

They can use data provided by AI-based Technologies to streamline manufacturing processes, improve production efficiency and provide real-time visibility into end-to-end processes. For instance, the system could be trained to analyse production line data to detect anomalies or process changes and warn personnel about potential defects .

3D Product Creation: Innovative technology solutions are making the design and development process increasingly digital and agile, 3D software has been around for a while, what was largely conceptual has now translated into reality and is now widely adopted. For example, manufacturers can now create a Digital Twin of their physical sample using 3D and VR technology. The Digital Twin can then be sent for review and approval, leading to faster, more sustainable and more accurate sample creation.

CONTACT

ptex
creative
technology
solutions

PLM: REIMAGINED PERFORMANCE: REDEFINED

Global. Knowledgeable. Experienced. Dedicated. Innovative.

Ptex Solutions' consulting services enable established and emerging companies to leverage technology to drive performance.

90 PROJECTS
19 COUNTRIES
19 YEARS

- RETAIL +
- APPAREL +
- FOOTWEAR +
- ACCESSORIES +

SMALL ENOUGH TO BE RESPONSIVE.
LARGE ENOUGH TO BE RESPONSIBLE.

www.ptexsolutions.com @ptexsolutions /ptex-solutions

IN CONVERSATION WITH

PRASHAM KAMDAR
FOUNDER & MANAGING PARTNER

The places software begins and ends are constantly changing as market demands shift, new innovations emerge, and fresh capabilities and integrations are added. Can you tell us what PLM means to Ptex, and how you believe that definition has evolved over the last few years?

With greater accessibility, enhanced performance, and stronger integration via multi-cloud technology solutions across organizations, PLM impact has expanded beyond its traditional scope of affecting design and development process improvement to potentially effecting large-scale digital transformation across the entire organization.

The expanding role of PLM is accompanied with an expanded definition for PLM success. PLM performance is no longer solely gauged by how streamlined a process is, but also by how agile and cost-effective the streamlined process enables a company to become.

As a system, PLM now captures more data than ever before – from sustainability parameters to component sourcing information. From Ptex's perspective, this translates to: how can we help our clients to do more with PLM? How can we continuously engage with our clients to ensure they continue to derive maximum benefit beyond go-live?

As PLM capabilities continue to increase, implementation partners must continue to broaden our perspective while focusing on the bigger picture: fueling long-term PLM-powered growth.

After the disruption of the last few years, it's become more important than ever for every actor in the fashion value chain to work more closely together - both to minimise risk and control their own costs, and to ensure that the go-to-market process is as streamlined as it can possibly be. Technology is guaranteed to be a big part of that new era of collaboration, but technology has to be supported by cultural change. Is the role of advisory services changing to bring in both elements, or have they always existed side by side?

Advisory services have always existed side-by-side. Traditionally, these services were used to inform decision-making at the PLM solution identification and selection level. However, changing business models, industry trends and PLM solution expectations necessitate changing advisory service roles and goals for the retail, footwear and apparel industries.

By virtue of focusing on getting organizations future-ready, such services have transitioned from being decision-making influencers to becoming digital transformation drivers. Savvy advisors provide a wider repertoire of services that leverage PLM data and reports to inform business decision-making not just at a product level, but also at a strategy level.

For brands and retailers especially, the choice to adopt PLM, and the decision to select a particular software vendor, is a complex one with long-lasting impacts. What do you believe it means to choose a PLM solution in 2023, and why do you think it's important to have experienced people, with deep domain knowledge, involved in both the decision-making and implementation cycles?

To stay ahead of the curve, companies need to adopt a forward-looking approach to PLM that addresses prevalent requirements, anticipates future trends and considers industry best practices. Consequently, to choose a PLM solution, companies need to take a long-term view and clearly define what they hope to achieve with it.

Experts that specialize only in one component – business or PLM – may either not know the extent to which PLM can be leveraged or not be able to envision future business needs from an industry perspective. On the other hand, implementation partners that provide PLM as well as industry expertise help bridge the knowledge gap between software and RFA companies. Consulting these domain experts early-on during the evaluation and decision-making stage helps to identify and select a PLM solution that is the right-fit for making their business future-ready.

To understand whether they are choosing the right partner, besides the usual questions for PLM, companies need to ask their potential solution providers for an implementation roadmap that extends beyond go-live, with the focus on maximizing PLM benefit. The right provider will be equally committed to partnering on a long-term basis and be able to specify the initiatives they intend to undertake to do so.

One of the two top items on most brands and retailers' agendas right now is enterprise-scale digital product creation and 3D working. PLM itself is an important part of making this possible, through integrations and as a central hub for product data, but this is also perhaps fashion's biggest cultural and mindset shift in a long time. How do you work to help fashion businesses to make the most of this side of digital transformation?

3D modelling, designing and sampling software such as Browzwear, Romans CAD and Clo have been around for a while. However, as digital 3D materials were unavailable, 3D samples were created based on 2D sketches that could not accurately capture fabric physical properties, so physical samples were required.

Now, innovative companies such as Frontier and DMIx are using machine learning and AI to build image exchanges for 3D materials, textiles, fabrics, trims and accessories. Suppliers (eg. fabric mills) use these platforms to build virtual fabric libraries, from which manufacturers can source digital fabrics. Integrating such systems via PLM will enable the entire design-to-sampling process to occur virtually as fabric, fit, silhouette and drape can be visualized accurately with little need to create physical samples.

PLM is a critical link in the chain for enabling virtual garment creation as it is the single platform that connects different digital transformation-enabling solutions. Think of it as an information superhighway, with exits for different design and development solutions. A key determinant of how successfully vehicles (aka styles) navigate in and out of the entire system is quality of exit ramp construction i.e., quality of PLM implementation. For example, fashion companies could source and add digital fabrics to the company's 3D material library in PLM. If sustainability enablement software such as Made2Flow is integrated with PLM, companies could see design impact, including traceability, and make any necessary material and design adjustments in real-time. With the touch of a button, PLM a Techpack is generated and used to render 3D samples. Any sample alterations and approval would be done virtually and finally, flow to manufacturing for product development.

Though we are seeing early-adopters shifting towards completely virtual sampling units, current process changes tend to be at a functional level. A vast majority of fashion companies are yet to achieve enterprise-scale 3D product creation or even understand the full capabilities of PLM. Ptex Solutions' role as an implementation partner is not just to understand business requirements, but to use our knowledge of the industry and PLM best practices to help companies reimagine the impact of PLM and drive PLM-led digital transformation.

The other item is, of course, sustainability and transparency. We've already talked about the importance of connecting brands and suppliers, but it's also hugely important for the industry to improve the way it plans, buys, and produces to avoid as much of the waste from overproduction as possible. How do you see this being put into practice? And what else can PLM, properly implemented, do to support fashion's sustainability objectives?

Snowballing swiftly from industry buzzword to powerful movement, demand for greater sustainability has completely altered the fashion landscape.

The sustainability repercussions of enterprise-scale 3D product creation alone are significant – reduced wastage is

accompanied by a minimal carbon footprint as physical items no longer need to be transported across the world for sample development. For instance, an India-based garment manufacturer recently made more than 200 samples, including fit, proto, salesman and pre-production samples, of 1 complex workwear style for a Japan-based customer. These samples were sent overseas over a period of 4 months until a final version was approved. Each garment used around 3.15 metres fabric, weighed around 1.2kgs, and cost USD 50 to courier (CMT cost not included).

Creation of real-time virtual garments also translates into a significant reduction in time-to-market, effort and cost. Had both the manufacturer and customer implemented 3D sample creation, besides the sustainability aspect, significant wastage could have been avoided.

As the product development process becomes faster than ever before, companies can determine and schedule production levels of select items based on demand instead of overproducing in advance to avoid shortage.

How do you see PLM's role in the fashion technology ecosystem evolving in the near future? How can it best support fashion's ongoing digital transformation?

Going forward, as the power of PLM increases, companies will need to replace a reactive approach to PLM with a more proactive approach. Companies will need to review existing PLM system capabilities relative to emerging or evolving trends and calibrate their PLM approach to ensure alignment with business goals.

The following considerations will form the cornerstone of a high-impact PLM-led Digital Transformation strategy:

- How companies perceive PLM initiatives. As PLM systems become more powerful, businesses must treat PLM implementations as strategic improvement initiatives geared to inform, drive and power organizational digital transformation. From a strategy execution standpoint, this means continuously engaging with implementation partners beyond go-live to maximise PLM adoption.

- How companies use PLM systems. The potential impact of PLM is vast. Instead of focusing purely on current needs, companies need to build for the future. As greater transparency becomes a competitive edge, expanding PLM usage by incorporating additional data such as regulatory compliance levels, sustainability scores based on materials, trims, packaging or vendor selections, wastage calculators, material certifications and standards, carbon footprint calculations etc.

- How companies leverage PLM initiatives. To increase PLM impact, companies must continuously fine-tune their initiatives whether by internally reviewing performance, externally partnering with industry experts or thought leaders or conducting comprehensive benchmarking exercises to impact-growth opportunities.

As fast fashion makes way for slow fashion, technology adoption and adaption must be faster. As fashion companies simultaneously scale up sustainability and digital transformation initiatives, their technology ecosystems need to be dynamic, flexible and agile enough to support them.

Which PLM solutions / suppliers do you work with? If your services are vendor-agnostic, please say so.

WhichPLM Advisory has a unique perspective related to business use-cases found within the majority of PLM solutions, as experts in the field, we help brands and retailers investigate the market, supported by an expert eye on the details, related to best practices, efficiency, connectivity and proof of value.

List your PLM services within retail, footwear and apparel to date.

Over the years,, we have worked with thousands of the world's leading companies, including:

- Adidas
- Burberry
- Columbia Sportswear
- MANGO
- Marks & Spencer
- Puma

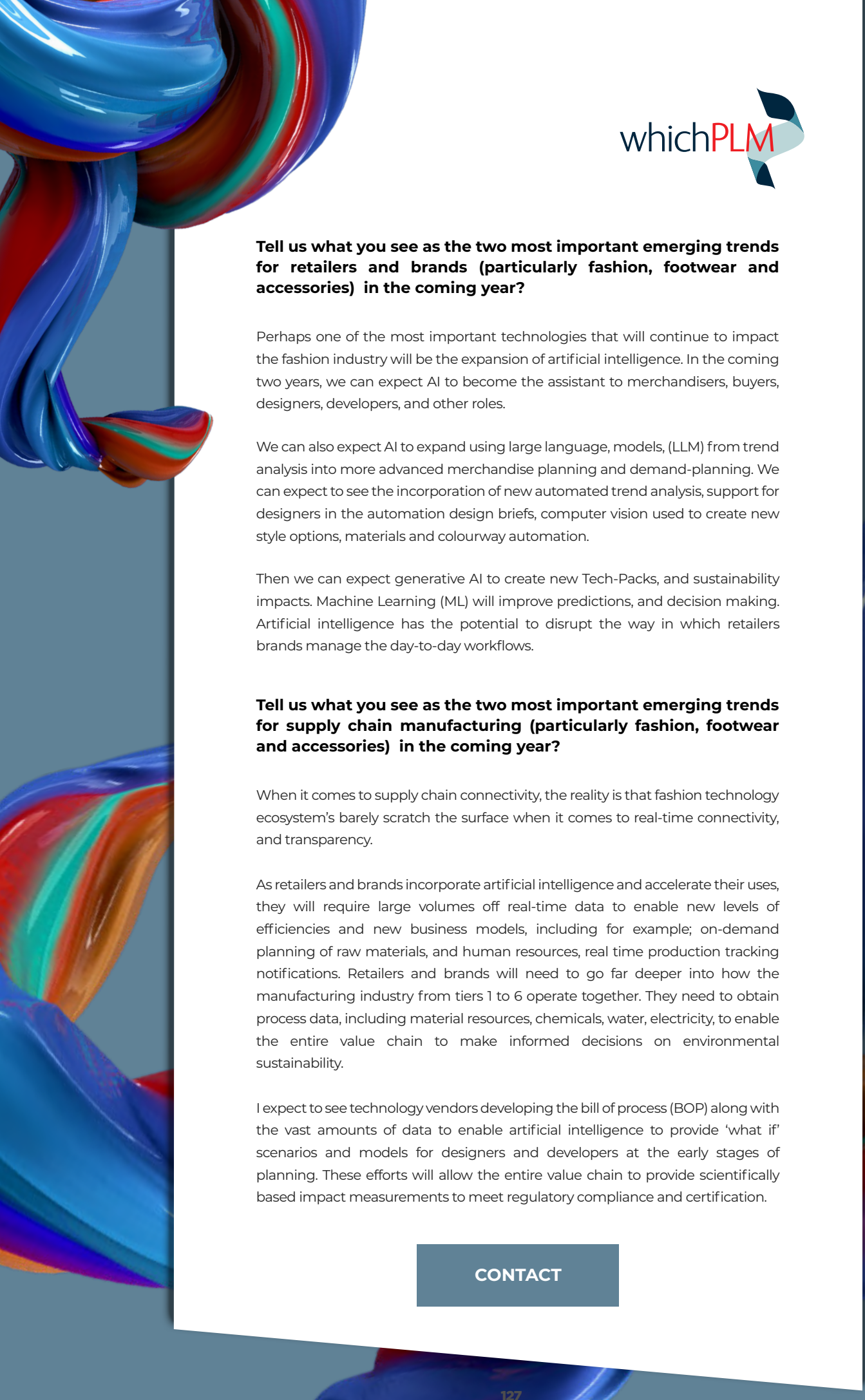
Please provide the number of qualified domain experts you have specifically focused on implementations in the RFA sector:

Based in the United Kingdom, our small team of digital transformation experts has helped with PLM projects across Europe, North America and Asia.

What do you consider your practice's strategic, tactical and implementation strengths to be in the region of retail, footwear and apparel lifecycle?

WhichPLM has a proven history of success in helping global fashion leaders in every sector to digitally transform their businesses, take advantage of emerging technologies, and transition from home-grown processes to best-practice workflows. Our services have helped our clients to stay ahead of their competitors, to remain in tune with the ever changing demands of their consumers, and to deal with historic disruption and uncertainty.

We have been spearheading fashion technology since the 1970s, and are trusted for our objective approach to innovation – making sure that the "art of the possible" gets grounded in reality. From designing open APIs and educating the next generation of talent, to running PLM customer surveys and building roadmaps to 3D working, we understand what brands, retailers, and manufacturers want from technology, and we have an unmatched breadth and depth of experience tailored to delivering digital transformation across the fashion value chain.



Tell us what you see as the two most important emerging trends for retailers and brands (particularly fashion, footwear and accessories) in the coming year?

Perhaps one of the most important technologies that will continue to impact the fashion industry will be the expansion of artificial intelligence. In the coming two years, we can expect AI to become the assistant to merchandisers, buyers, designers, developers, and other roles.

We can also expect AI to expand using large language, models, (LLM) from trend analysis into more advanced merchandise planning and demand-planning. We can expect to see the incorporation of new automated trend analysis, support for designers in the automation design briefs, computer vision used to create new style options, materials and colourway automation.

Then we can expect generative AI to create new Tech-Packs, and sustainability impacts. Machine Learning (ML) will improve predictions, and decision making. Artificial intelligence has the potential to disrupt the way in which retailers brands manage the day-to-day workflows.

Tell us what you see as the two most important emerging trends for supply chain manufacturing (particularly fashion, footwear and accessories) in the coming year?

When it comes to supply chain connectivity, the reality is that fashion technology ecosystem's barely scratch the surface when it comes to real-time connectivity, and transparency.

As retailers and brands incorporate artificial intelligence and accelerate their uses, they will require large volumes off real-time data to enable new levels of efficiencies and new business models, including for example; on-demand planning of raw materials, and human resources, real time production tracking notifications. Retailers and brands will need to go far deeper into how the manufacturing industry from tiers 1 to 6 operate together. They need to obtain process data, including material resources, chemicals, water, electricity, to enable the entire value chain to make informed decisions on environmental sustainability.

I expect to see technology vendors developing the bill of process (BOP) along with the vast amounts of data to enable artificial intelligence to provide 'what if' scenarios and models for designers and developers at the early stages of planning. These efforts will allow the entire value chain to provide scientifically based impact measurements to meet regulatory compliance and certification.

CONTACT

ADVISORY SERVICES

whichPLM

With close to 49 years of experience in fashion design, manufacturing & information technology, Mark Harrop of WhichPLM is a digital transformation expert advisor & process futurist supporting brands, technology businesses & fashion technology start-ups.

WORK WITH US

markharrop +44 7872 822648 www.whichplm.com

IN CONVERSATION WITH

MARK HARROP
CEO & FOUNDER

The places software begins and ends are constantly changing as market demands shift, new innovations emerge, and fresh capabilities and integrations are added. Can you tell us what PLM means to WhichPLM Advisory, and how you believe that definition has evolved over the last few years?

As I've stated many times over the last 24 years since we first brought PLM to the market: PLM is a methodology, first and foremost, therefore it encompasses a universe of software solutions, each operating within its own sub-ecosystem. Today, businesses should recognise and educate themselves on this fact, and should look at the entire circular workflow from consumer trend, to design and development, costing, sustainability, sourcing, manufacturing and eventually back to the consumer.

You wrote a piece for this report talking about the positive impacts of generative AI for PLM users. What do you believe is the timeline for this? And which areas will we see AI-driven transformation the soonest, versus the areas that are likely to take longer?

We've all experienced some form of artificial intelligence - the likes of GPT - but many more have recently come to the market offering solutions. Many of these software solutions have developed different levels of maturity in building generative AI using machine learning. Unlike the bigger companies, they

have limited data and language models, but this has not stopped them developing forms of automation. I would expect to see elements of machine learning coming into PLM within the next 1 to 2 years.

Where do you believe sustainability fits into the PLM picture? Should organisations be looking at it in a modular way - better materials as one step, more transparent supplier relationships and reduced physical sampling as the next - or working backwards from a more comprehensive target and encouraging (or mandating) everyone who uses PLM to make choices that contribute to that target?

The industry is now required to provide scientific evidence when making greenhouse gas emission claims, and to deliver on this, it's critical that we use data coming from a wide variety of technology solutions, business processes, learning models, and upstream (Tier 1-6) data providers. We need to move quickly, decisively across all tiers.

Staying on sustainability, a big piece of the puzzle is still missing in that few brands really know the makeup of their multi-tier supply chain. What role can PLM play in connecting those different stages and providing real visibility and transparency?

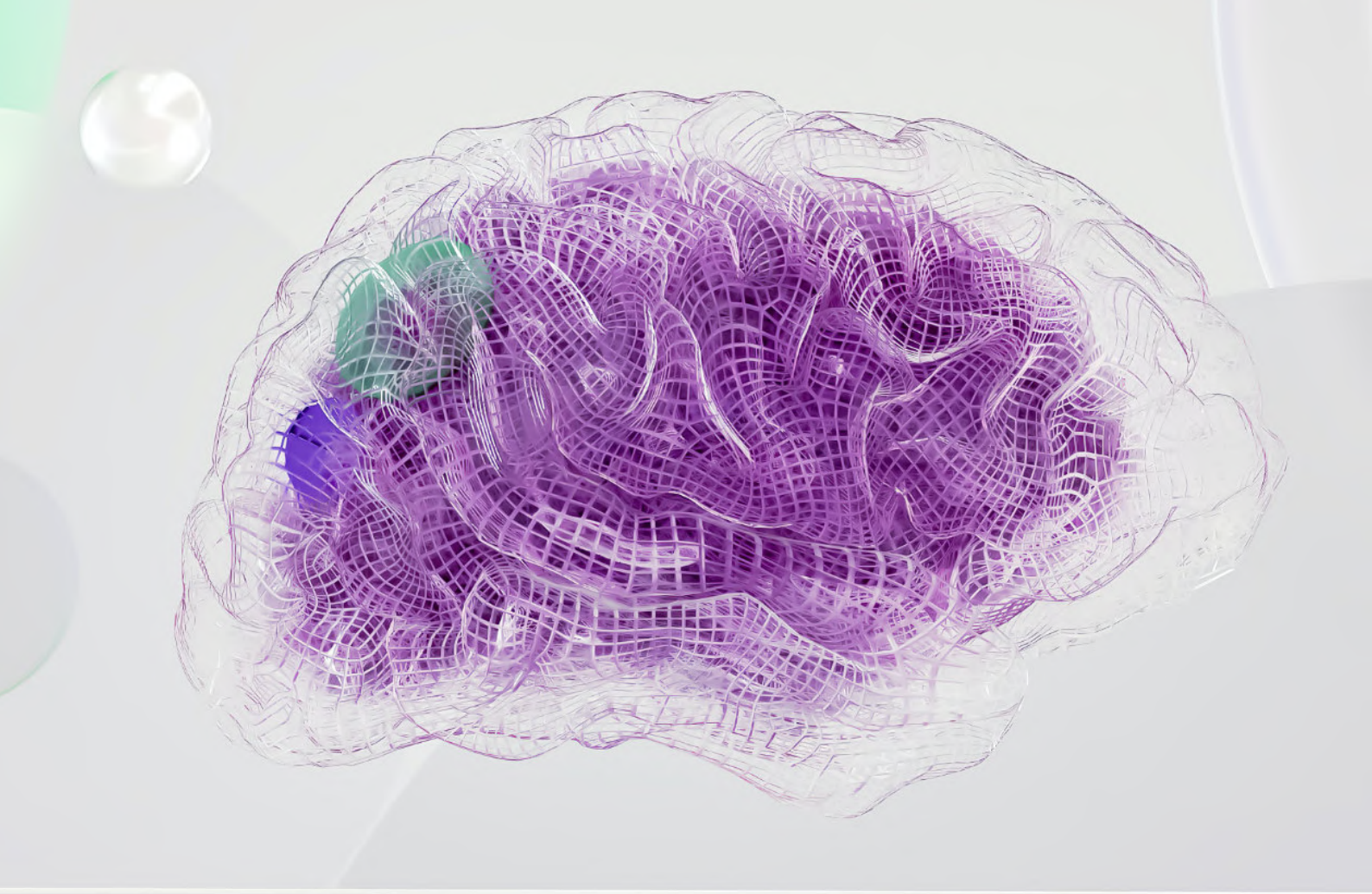
PLM providers should move quickly to build the bill of process (BOP); this will enable brands and retailers to understand what happens based on the choices of materials, finishes, colour options, and the end-to-end processing. The bill of process should work together with the bill of materials (BOM) and the bill of labour (BOM) to complete the full picture, which will then enable scientific impact calculations to be completed accurate.

In a market where PLM is an important part of a brand's technology stack, but definitely not the *only* part, how do you see the advisor's role changing? Because there's less of an emphasis today on solution selection and much more weight being placed on strategy, ecosystem integration, and vision.

When it comes to problem-solving, I don't look at PLM. Instead, I look at the processes and the unique software solutions that support each of those processes. I also consider the bigger picture and attempt to connect data elements between each of those data inputs and outputs. If you can only see PLM as the solution, you are missing the bigger picture. PLM is only a small piece of the picture!

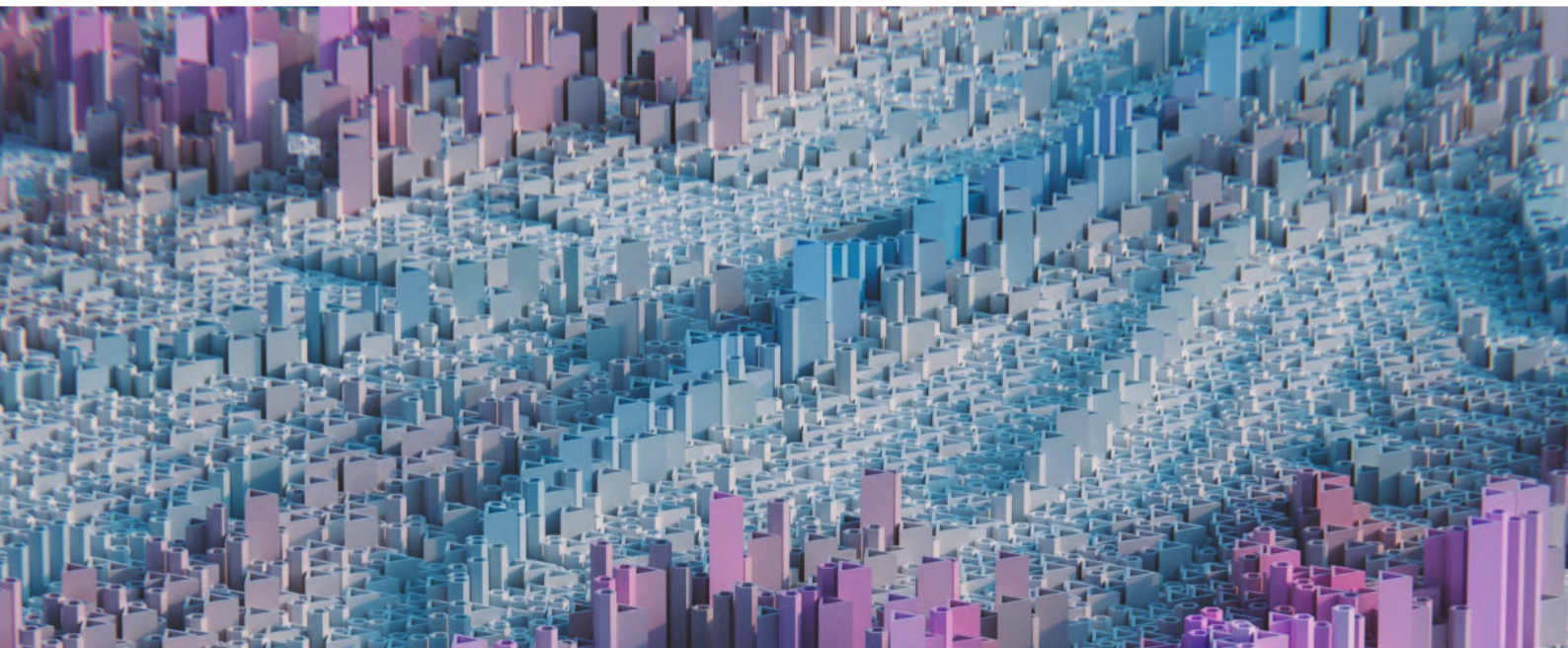
How do you see PLM's role in the fashion technology ecosystem evolving in the near future? How can it best support fashion's ongoing digital transformation?

PLM vendors need to work hard and accept that PLM is the data repository and is not the end-to-end solution. They need to make PLM easy for other technologies to connect to in the same way that we use apps on our mobile phones. We've arrived at the time when we need to look at which solution really owns that data, how it is used and how it's best shared with other solutions up and down the entire value chain.



THE PLM LANDSCAPE: 2023 MARKET ANALYSIS

NEED TO UNDERSTAND THE PLM SHAPE, SCOPE, AND SIZE OF THE PLM MARKET FOR RETAIL, FOOTWEAR, AND APPAREL AT A GLANCE? THIS DEFINITIVE MARKET ANALYSIS CAPTURES ALL THE ESSENTIAL FACTS AND FIGURES FROM THE 2022/23 FISCAL YEAR, ALONG WITH OUR EXPERT PERSPECTIVE ON THE EVOLUTION OF THE PLM MARKET OVER THE LAST TWELVE MONTHS - EQUIPPING YOU WITH EVERYTHING YOU NEED TO STAY INFORMED ABOUT THE DIRECTION OF YOUR PLM STRATEGY.



METHOD

For more than thirteen years, these reports have done two things: capturing and modelling the movements of the PLM market for fashion each financial year, and using those movements to continually update the world's most accurate archive of historic fashion and footwear PLM sales.

Both of these objectives are underpinned by new customer information, userbase figures, and other data from the most recent financial period - all provided by a global pool of PLM vendors, and all supplemented by our own market knowledge and industry insights. That data is then vetted for accuracy, and fed into a proprietary model that we have fine-tuned to provide an accurate assessment of the evolution and direction of the PLM market.

Over the next few pages, we break down where PLM was sold in the fiscal year 2022/23 (April 1st 2022 to March 31st 2023), to what size of business, what areas those businesses specialise in, and what implications these broad and narrow indicators have for both the fashion PLM market - and for fashion technology as a whole.

To allow us to conduct this breakdown, each verified PLM customer who purchased a new PLM solution in 2022/23 is assigned a market Tier based on their annual turnover, from Tier 0 to Tier 5 - massive multinational to small business. Our modelling then calculates the expected revenue derived from software sales and professional services for each different Tier - to build a picture of the overall monetary size of the PLM market based on new name sales and their deployments.

(The value of expansions and extensions is now accounted and analysed here as a separate dataset, since it represents a significant but separate portion of the overall PLM market, as well as being an indicator of some of the trends in integration and evolution that are identified in the previous sections of this report.)

FINDINGS

In pure quantity terms, the PLM market for fashion and retail is on a consistent and predictable track. Compared to the previous financial year – 2021/22 – we have tracked a slight decline in overall PLM sales for fashion companies of just 5%, which is in line with similar variances we've seen in previous reports, and which also represents the expected fluctuations of a major, mature software and services market.

Despite this relatively small reduction in total new name sales figures, however, we have also tracked a decline in the annual market value for PLM in fashion – again, pertaining to new name sales only – of around 35% from 2021/22 to 2022/23.

This is directly attributable to the fact that the previously-mentioned 5% shortfall in sales numbers was concentrated at the upper echelons of the market, where the monetary value of each individual sale and implementation is drastically higher than at the lower end of the spectrum.

To put that into context, while the PLM market has trended towards price parity at the software seat / subscription level (i.e. a massive multinational company is largely paying a similar license cost per user to a small, single-territory brand, and is likely actually benefitting from volume discounts) the revenue generated from the ecosystem of first and third party implementation and support services that has grown around those upper-Tier sales is significantly higher.

As a result, while we have seen a very modest decline in overall sales quantity, the much more pronounced decline in both Tier 0 and Tier 1 sales (around 45%) has a marked effect on the monetary size of the market, which stands at $107.25 million for the fiscal year 2022/23 – down from $171.60 million in 2021/22.

The overall monetary size of the market now falls between pre-pandemic norms (where the waterline stood at around $135 million, averaged between 2017/18 and 2018/19) and the depth of the COVID-era slump in spending (when the PLM market for retail, footwear, and apparel fell below $100 million).

Tier	Percentage of new PLM sales in 2022/23	Definition
Tier 0	**4%**	Also known as the "super tier", customers who fall into this category demonstrate annual revenues in excess of $10 billion, and are typically multinational organisations.
Tier 1	**5%**	With revenues of between $1 billion and $9.99 billion, Tier 1 customers may share equal domestic renown to their larger counterparts, but lack the sheer sales volume and international impact that would elevate them to the super tier.
Tier 2	**5%**	Encompasses a wide variety of retailers and brands in what is commonly referred to as the "mid-market". These companies demonstrate revenue of between $500 million to $999 million.
Tier 3	**9%**	Takes in those smaller organisations that fall below the revenue threshold of Tier 2 – typically single-territory or boutique retailers and brands with revenue from $100 million up to $499 million.
Tier 4	**7%**	This Tier encompasses businesses – typically emerging designers, extremely small brands, or retail startups – that fall below the Tier 3 bracket, turning over between $50 and $99 million per year.
Tier 5	**70%**	Introduced in our 2018 Buyer's Guide as a way to provide more granular insights into PLM adoption among small businesses, Tier 5 captures any company whose turnover is $49 million or less per year.

It is also worth noting that the fiscal years 2020/21 and 2021/22 now, in retrospect, appear to have benefitted in a major way from what the wider fashion and consumer products industries referred to as “revenge” or “rebound” spending. From a low ebb in 2022, the industry roared back to life in those two years – adding more than $100 million in value in a single year, and exceeding its pre-COVID baseline by $50 million in the same period. This would have been a difficult run for any industry to sustain.

For several further reasons, too, this finding is not unexpected.

The most obvious of these is the prevailing economic climate. Other, cross-industry, analysts have already significantly revised their predictions for overall IT spending this year downwards, in light of the observable data from late 2022 and the first quarter of 2023. While technology remains an investment priority for many businesses, big enterprise PLM was seemingly not immune to a wider plunge in the tech sector that saw between 30% and 60% falls in the value of some of the world’s largest technology companies.

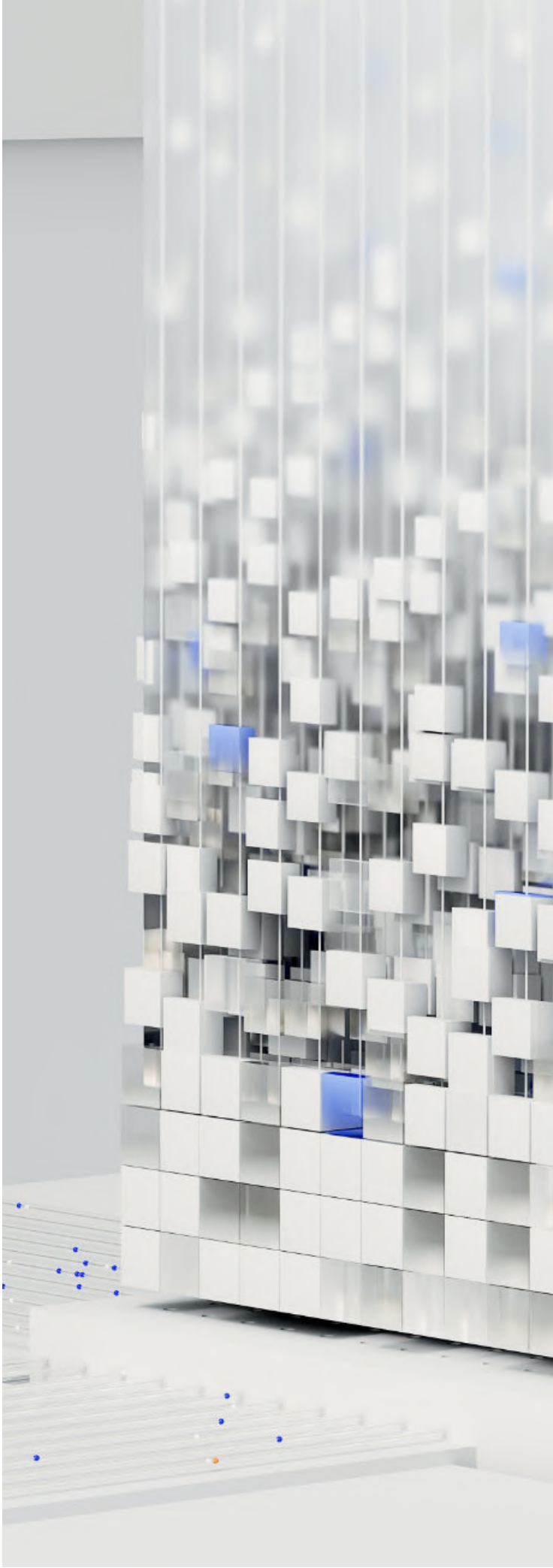
Unlike smaller businesses, where the decision to implement new software is sometimes driven by pure survival instinct – especially in climates such as this one – larger organisations have tended to take a more pragmatic “wait and see” approach, and held off purchasing new software until they have greater confidence that stability has been restored.

Interestingly, though, this view only holds true when we take a selective lens and confine our data to new-name sales only.

For example, when taken together, the two highest market Tiers we track (Tiers 0 and 1) shed 23 new name sales this year, seemingly wiping $36.3 million off the total value of the PLM market for fashion when judged solely on new sales. (We should note that sales are up in other Tiers.)

This would appear to be a gloomy picture for the upper end of the market, albeit one that mirrors the wider tech industry’s difficult recent history. But when we broaden our perspective to take in overall spending on PLM by large enterprises, we find that more large enterprises have invested in PLM expansions and extensions this year than the number by which new name sales fell.

Of those enterprise expansions we can verify at the basic level – 30, spread across Tiers 0 and 1 – the majority have markedly deepened their investment in PLM, with additional five or six-figure projects either culminating or being completely contained in the 2022/23 fiscal year.



Country	Percentage of new PLM sales in 2022/23
Argentina	0.5%
Australia	1.5%
Bangladesh	2%
Canada	1.5%
China	0.5%
Denmark	4%
Finland	0.5%
France	6%
Germany	7%
Greece	0.5%
India	5%
Indonesia	0.5%
Italy	7.5%
Japan	0.5%
Mongolia	0.5%
New Zealand	0.5%
Norway	1%
Russia	0.5%
Saudi Arabia	0.5%

Country	Percentage of new PLM sales in 2022/23
Singapore	0.5%
South Korea	0.5%
Spain	1.5%
Sweden	1.5%
Switzerland	0.5%
Taiwan	0.5%
The Netherlands	1.5%
Trinidad & Tobago	0.5%
Turkey	1.5%
UK	7%
USA	39%
Vietnam	0.5%

And we should note that there are many, many further expansions claimed by PLM vendors this year – representing either the purchase of new licenses, new modules, or new features by existing PLM customers in other market Tiers – that we cannot independently verify, and are opting to exclude from this analysis. Were these to be included, though, we do not believe this market analysis would be overly affected, since mid-sized and smaller organisations do not tend to purchase additional seats or commission additional services on anything near the same scale as the largest businesses.

On that basis, while it is accurate to say that new PLM agreements in the upper Tiers of the fashion PLM market have contracted in a measurable way over the last twelve months, it is not accurate to point to this as evidence that overall PLM spending by larger organisations was down in 2022/23. Instead, these datapoints suggest that big enterprises are extending the capabilities they already have to a wider audience of in-house users, as well as expanding on those capabilities with new features and functionality.

This, too, is representative of a global, cross-industry trend to "do more with less," and does not, we believe, indicate that the PLM market for the largest brand and retail businesses is depleted. Instead, we expect to see new-name sales to this market segment ebb and flow over the next few years (as they have in the past) as they are influenced by much larger economic forces and trends.

That being said, the next force that has shaped the PLM market this year has been the continuation of an extremely long-running trend towards affordability and accessibility, which has shifted the balance of PLM sales heavily towards smaller businesses.

This is a force we can chart the progress of in an extremely visible way over a three-year period, to demonstrate just how quickly and comprehensively PLM became a technology category for every shape and size of business – not just major enterprises:

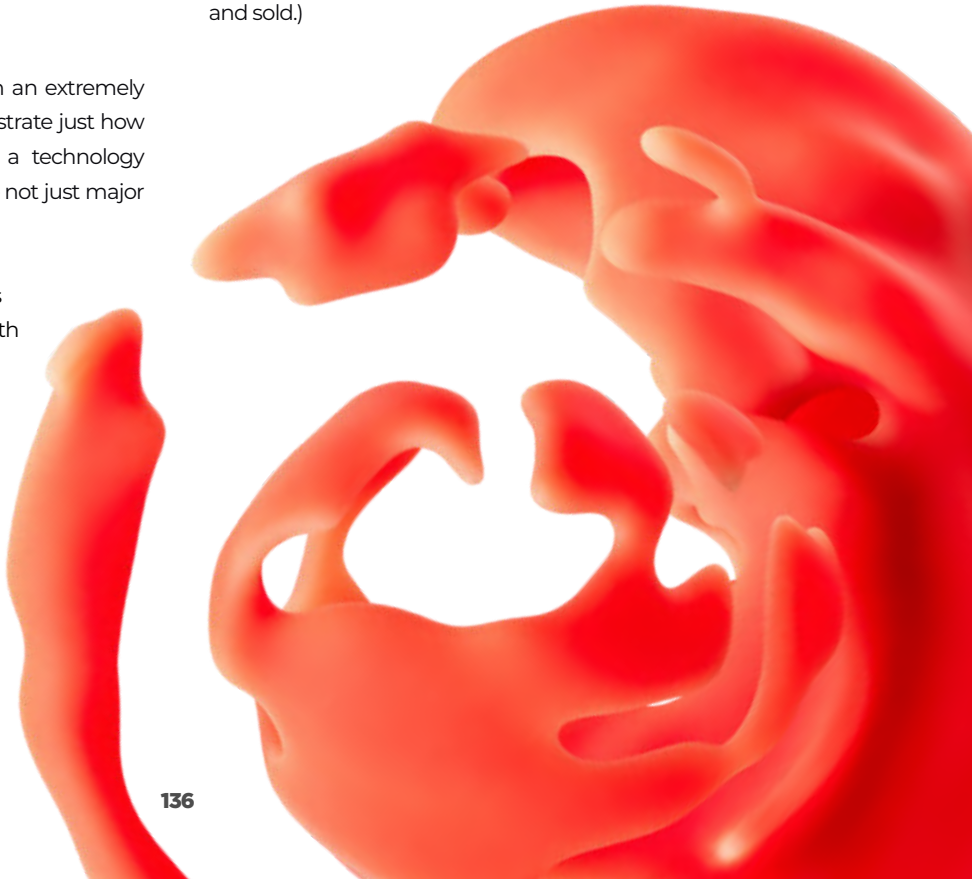
- In the year 2020/21, only 38.5% of PLM sales were made to Tier 5 companies – those with annual turnovers of less than $49 million.
- In the following year, 2021/22, that share rose to 60%, and we began to see an entirely new kind of customer – single designers and small studios – being added to the PLM userbase.
- This year, that share has risen again to 70% - the highest it has been at any point in the six-year period since we introduced Tier 5 as a way of adding greater granularity to an overwhelming concentration of PLM sales to smaller and smaller businesses.

This trend represents the clear arc that digital transformation in fashion has taken – from starting as the preserve of large enterprises to become a key strategic objective for even the smallest organisations.

Not coincidentally, this has all occurred simultaneously with two other forces.

With most PLM vendors shifting away from on-premise deployments and towards a cloud-first, subscription-first model, the opportunity to "buy into" PLM has broadened dramatically. Today, it is easier than ever to at least get started with a self-serve PLM platform. And although most brands then opt to employ the professional services of their chosen vendor or an independent third party to shape their strategy around that platform, it is now unambiguously clear that PLM is available on-tap, to everyone, as a fully-feature, multi-tenant solution.

(We should note that several PLM vendors do continue to offer managed cloud, hybrid, and private deployments on a per-company basis, but these are not positioned as the primary way these solutions are marketed and sold.)



Region	Percentage of new PLM sales in 2022/23
Americas	48%
APAC	11%
EMEA	41%

The period in question (2020 to today) has also, of course, seen the biggest upheaval in most people's lifetimes to the nature of work. Prior to this, the majority of PLM usage took place in centralised locations: big headquarters in key cities, sourcing offices, and so on. This made a strong case for inertia in terms of how PLM was licensed, implemented, and used; if most people came into an office and sat at an assigned desk to use a PLM platform, then there was little urgency to the move away from secure, ringfenced, privately hosted deployments.

As we all know, this changed in a dramatic way in 2020. And while different companies have approached the return to work in their own ways, the world has seen a long-lasting move towards hybrid working and fully-remote setups. These make a much stronger case for cloud-native, SaaS PLM, and while the industry's move to offering this as the primary method of deployment has been a catalyst for new sales to Tier 5 companies, it is also notable that some (perhaps most) of the biggest brands in the world have already migrated towards the cloud as well.

This has represented an opportunity (or challenge, depending on your perspective) for PLM vendors. While it's true that larger enterprises will use more modules and capabilities – or at least different sets of these – to smaller brands, companies at both extremes are now largely being sold the same software foundations. And with the idea of "enterprise solutions" falling out of favour, the question for vendors has instead become what it means to be an enterprise or small business partner – differentiating your offer based on strategic services and support, rather than core capabilities.

Interestingly, since this has all coincided with a deep phase of vendor consolidation, differentiation has taken on a different aspect. With a smaller pool of vendors needing to cater to an extremely diverse market, we have seen PLM companies set themselves apart from one another based instead on extended capabilities built out either through development, partnerships (analysed in more detail shortly) and acquisitions.

We do, though, have good reason to believe that the stage is now set for another cycle of disruption. As the PLM vendor listings in this report have demonstrated, power in the PLM market is now extremely concentrated, and while the market might retain this shape for a while, we expect to see a new generation of disrupters – who will challenge the idea of what PLM should be – emerging in the near future to both cater to the existing PLM market and a potentially new frontier of global companies who have argued that PLM was unnecessary for them in the past.

Thinking globally, then, what does the current PLM market for retail, footwear, and apparel look like, geographically speaking?

As we noted in our 2022 PLM Report, while the data set out in these pages shows thatPLM sales are still concentrated to some extent in regional hotspots – especially the USA (which retains its 40% market share), UK, China, France, India, Italy, and Germany this year – there are still very few areas of the world where PLM is not sold. And as we pointed out in last year's report, the forces identified above mean that there is little regional variation in functionality; a PLM user in one market generally has access to the same capabilities as their counterparts elsewhere, with the variance instead being in localised support and services.

In effect, PLM is now so universally distributed that the shape of the global market is dictated as much by broad geopolitical and economic forces as it is by anything intrinsic to the PLM industry itself. As the saying goes, tides raise all boats, and from a geographical perspective at least, those boats all have equal access to the same tools.

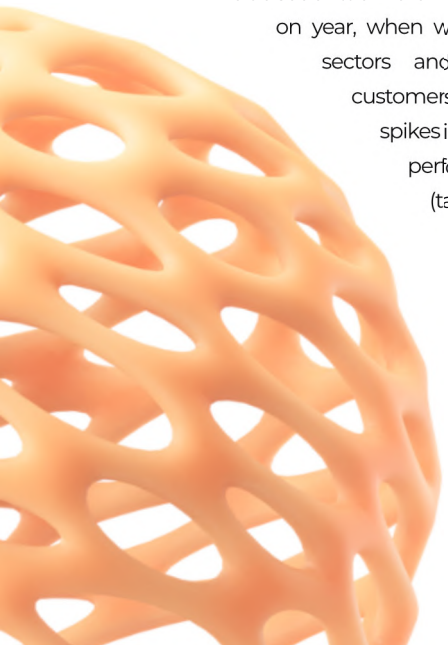
We do see a little more in the way of market changes, year on year, when we slice the data based on the sectors and specialisms of new PLM customers. Our 2022/23 findings show spikes in sales to footwear and outdoor / performance wear companies (taking a combined 15% of the overall market) as well as a noteworthy increase in the share of sales to womenswear brands (from 5% to nearly 9%).

It will come as little surprise to anyone monitoring the fashion industry sentiment towards digital fashion, the metaverse, and NFTs to see that the blip in sales to agencies and creators working in the digital-only space we identified in 2021/22 has not continued this year; there were no sales of PLM this year to these kinds of businesses.

More concerning, however, is the slump in sales of PLM to sustainable apparel and footwear brands. Last year we saw that category rising to take up 4% of all PLM sales, but this year that figure has declined to just 1%. There is some correlation between this and the shortfall in sales to Tier 0 and Tier 1 companies, but this does not completely account for the apparent decline in interest in PLM among sustainable-first companies.

Could these brands and retailers perhaps be concentrating their IT spend elsewhere? And will the changing shape of PLM start to influence this segment of the market if, as we expect, more PLM platforms begin to expand their footprint further into the supply chain? This is a question that the PLM industry will need to answer sooner rather than later, but it is also one that should be driven just as much by brand demand for extended capabilities as it is by vendor innovation.

That innovation, though, is on display this year in the data we captured around partnerships between PLM vendors and other technology providers. Last year we said that we expected to see new relationships being forged that would "drive further improvement of PLM's capabilities, [and make] PLM platforms even more attractive and capable out-of-the-box to brands who already put sustainability first". This year we have observed that of four new partnerships being inked in 2022/23, three were directly related to supply chain and sustainability – adding key features and integrations for brands that now need to capture and use an overwhelming amount of supply chain data (especially at the process level) to meet regulatory requirements.



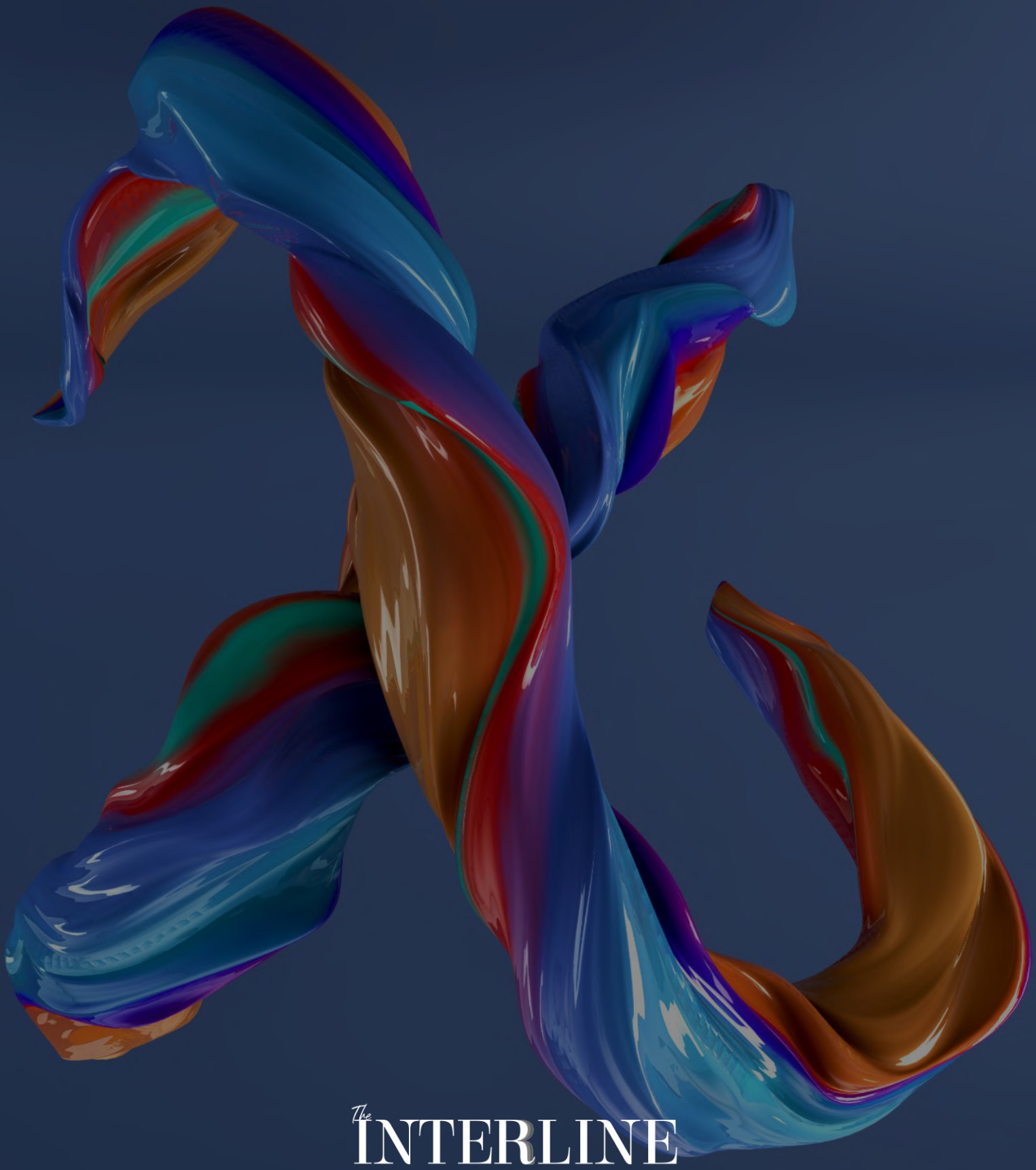
NEXT STEPS

Like the market itself, the conclusion to this analysis remains very similar to previous years: there has never been a better time to buy PLM. There may be a smaller choice of solutions available today, but each of them is likely more capable and easier to access than ever before, as well as being more straightforward to plug into the broader fashion technology ecosystem.

In the past year, PLM has become a more tightly-integrated part of The Interline's coverage and analysis of the full technology landscape for fashion, and this reflects just how foundational PLM platforms have become to many brands', retailers', and manufacturers' visions for sustainability, digital production creation, and much more.

But while the market itself might not be changing much year-on-year, the world around PLM is evolving rapidly, and we expect to see a redefinition of the technology itself – and a recontextualisation of its importance to the future of fashion – in the very near future.

Taking account of that, we will be evolving beyond this market analysis in 2023/24 to look at the horizon towards which fashion is moving, and how PLM is enabling, supporting, and unlocking a much wider range of possibilities.



The INTERLINE