PLM BUYER'S GUIDE

2020

whichPLM

WELCOME TO THE
PLM BUYER'S GUIDE 2020

It's ten years since we produced our very first annual report – a series that was renamed to the Buyer's Guide back in 2018. If this is the first time you have come to WhichPLM, then you're hopefully going to find the contents of this Buyer's Guide of great interest and value to you and your business. The team at WhichPLM have been involved in fashion technology since the late 1970s, and we have been recognised as the independent fashion and retail PLM specialists for more than a decade. Today we spend our time researching, evaluating, testing, writing about, and analysing PLM technology across the entire end-to-end fashion and apparel value-chain.

Unlike the vast majority of fashion magazines that monetise the majority of their editorial content, WhichPLM continues to stand by its founding mission to provide educational articles, technology news, vendor press releases, exclusive data-rich reports and supplier listings totally free of charge to readers. It's humbling when I hear from students to senior boardroom executives all over the world just how much they value WhichPLM, and how we help to tell the stories of how new technologies can be used within the apparel industry - often supported by in-depth detailed use-cases and potential ROI (return on investment) opportunities.

It's exciting for me and the team to continue to see our reports and Buyer's Guides, which date as far back as 2010, still being downloaded, read, and shared by thousands of people. In that time, our publications have reached senior executives and stakeholders from the vast majority of the world's leading retailers, brands, educational establishments, global consultancies, business analysts as well as every major technology vendor in our industry.

Due to this continued success and the increasing growth of new technologies coming into the apparel industry, I have decided that in 2020, the WhichPLM Group will add its latest brand; The Interline - www.theinterline.com - that will focus on everything but PLM – covering the full spectrum of fashion and retail technology.

WhichPLM will revert back to its core focus of PLM, and our plan is to go deeper into every module - to help new and existing prospects to not only make sense of PLM, but at the same time to help you make the right scientific choices when making your vendor shortlist or even selection. To this end WhichPLM has recently added a new tool that allows prospects and current users of PLM to compare those PLM vendors that have been recently evaluated by WhichPLM's expert analysts.

This 2020 Buyer's Guide, then, is the start of our renewed, deeper, more focused analysis of PLM as it continues to expand its reach by adding new modules,, features and functions. Beginning here, WhichPLM will go right to the heart of PLM in 2020 and beyond. We will examine and list the type of questions that we suggest you should be asking vendors when making a PLM selection or upgrade. We will report on the changing architectures and new technology trends that can be integrated as part of a broader PLM solution. This will include new module upgrades, market segmentation, TCO (Total Cost Ownership) and much more – all of which are changing as modern PLM platforms continue

their journey to cater to the widest possible range of brands, retailers, and value added supply chain partners.

To better understand where the analysis in this publication comes from, I want to talk about just how much has changed since I entered the fashion technology industry some 46 years ago. Now, anyone who knows me knows how proud I am to have spent most of that time helping to bring new, digital technologies to the brands, retailers, and manufacturers who I believed needed them, even if they couldn't see it themselves - and in almost every case those technologies have gone on to change the fashion sector for the better.

It's been an amazing journey. From introducing the first personal computers onto the factory floor in the late 1970s, to the CAD/CAM revolution of the mid '80s, to PDM (and later PLM) kick-starting the industry-wide digital transformation journey in the late '80s. Along the way we have helped thousands of businesses around the world to take back control of their core product design and development processes, and to improve the way that they do business. When we introduced the world's first PLM solution in San Francisco in 1999, we opened up a new level of data consolidation and control across the entire value chain, and also used the newly-commercialised Internet to create new connections between brands and retailers and their suppliers.

In my introduction to our 2019 Buyer's Guide, I also made the point that technology has been something of a dual-edged sword for the fashion industry: it has delivered clear benefits, but also played its part in creating many of the world's problems when linked to CSR (Corporate Social Responsibility) and sustainability. But the good news is that we are now at a turning point and I believe that we are starting to see how new technologies, working in partnership with PLM, can help to reverse the negative situation low-cost fast-fashion has created. The introduction of virtual product design and development, namely CGI (Computer Generated Images) & 3D (Virtual Design & Development), is having a massive impact on the reduction of product samples that only a few years ago would have averaged six per approved style and now - using CGI & 3D - the number could be as low as one or two samples. More recently, we now have digital printing and dyeing of threads that can print on pretty much every material type, resulting in not only increased speed, but a massively reduced carbon footprint, delivering an environmentally friendly process.

Like I said back in 2019, it's not just fast fashion that caused environmental problems, but also CPG (consumer product goods) that shared the same trend of using new technology and offshoring to reduce cost and at the same time turning their products into commodities to a greater or lesser degree.

At the same time, these new technologies are helping to create new fashion market models for the sale of personalised products or small quantity production runs - including new micro factories – all of which is helping to create a real shift towards a more sustainable business model.

Interestingly, and perhaps linked to this subject, we are starting to see a large increase in companies using PLM to bridge the communication gaps and to make their processes much more transparent - something that COVID-19 is sure to accelerate.

As part of a broader trend towards supply chain collaboration, traditional vendor portals (technical specifications shared via PDF) are already quickly becoming a thing of the past and today most leading PLM vendors are able to bring all partners from across the value-chain onto a single unified platform, using secure licenses. I would go further and suggest that we can expect to see vendors delivering speciality PLM solutions that will not only serve retail, brand and manufacturing segmentations, but will also create tailored solutions that will go deeper into the design and development value-chain - the likes of PLM for materials, trims, and packaging development. We will also start to see new modules coming to market

linked to Track & Trace of products in real-time which, going forward, may be linked to a demand-driven chain.

I stand by what I said last year in that I believe more than ever before that the technologies we've created and helped to bring to market over the years actually have the potential to solve the problem of sustainability caused by lower cost production that came about by the deployment of new technologies (the likes of CAD, CAM, PDM, PLM etc.). Because it's only with a thorough understanding of the practicalities and costs – monetary, environmental, and ethical – of their complete product lifecycles that brands and retailers can start to take meaningful steps towards making this urgent change.

I hope that you find this year's Buyer's Guide of great interest and value and I encourage you to read our latest vendor research, PLM trends to expect in 2020 and beyond, and our exclusive market analysis and predictions. My hope is that PLM will commit to making our industry not just more efficient but more transparent, and will help all those involved in our supply chains to share in the success of a business that has given so much back to me.

CONTENTS.

WHAT'S NEXT FOR PLM: 2020 & BEYOND

Mark Harrop
CEO & Founder
WhichPLM Group

Last year (2019) was full of steps – and sometimes leaps – forward for PLM. We saw an acquisition, a series of core product announcements, several PLM evaluations (some public, some not), and various partnerships coming to fruition. Before we look to the future, let me first share our research, analysis and approach.

Our methodology

We use a robust model for identifying trends in PLM (and other related fashion technology solutions that can add value to PLM). Every year we start by looking at what's happening in the wider world, examining technology and other applicable trends in industries like automotive, furniture, engineering, aerospace, food & beverage etc. Then we turn our attention toward the fashion, textiles, footwear, apparel, upholstery, luggage and jewellery sectors to see where parallels can be drawn and what other unique variables are influencing our industry.

We assess those unique factors as part of a constantly-refreshed 1-3 year trend review. Or, to put it more simply, we look at what's happening in the world of fashion and retail right now, and what's likely to happen in the intermediate-term future. Obviously we look at technology trends, but we also link our findings to geo-politics, government legislation, developments in the global business sector, social sentiments, risk (the likes of COVID-19) and shifting fashion business models both **upstream** and **downstream** – all of which are likely to alter the dynamics of the apparel fashion world. We

mix each of these drivers with our own fashion-technology knowledge, thought leadership, and process expertise to identify the trends and innovations that are either slowly altering or completely disrupting the world as we know it.

This process is ongoing (daily) with no start or end dates attached, apart from certain landmark deliverables like the yearly WhichPLM Buyer's Guide, our Editorial calendar, our speaking engagements and our advisory services. Our research continues (from interviews with both established vendors and new startups) even as I write this article, revealing new developments from every corner of the world!

[PLM and partner technology vendors who would like to contribute their recent progress to our ongoing market research should contact WhichPLM's Editor, Lydia Mageean, who will arrange a conversation with our research and analysis team to explore your new ideas, latest developments and announcements.]

Once we have a clearer picture of what we can expect from the broader world and from the fashion industry in the coming 1-3 year period, we then interview the vendors of fashion and retail PLM technologies to understand how they are responding to these trends, as well as working with retailers, brands and manufacturers to develop specific use-cases for those new technologies. Once we have a good understanding of the value proposition that these new technologies can bring to the RFA industry – with opinions from both sides - we will then independently share our findings across WhichPLM and our social media channels, helping to educate the industry on the art of possible and value brought by PLM. At the same time we will share our findings with our registered members – many of whom also go on to help prove our research in the real world, and who are ultimately the ones that will help to develop the ROI (Return On Investment) models.

Why do we go into so much detail for what might seem like fairly simple predictions? Unlike traditional fashion magazine journalists, WhichPLM (founded by one of the originators of PLM) not only understand the technical, process, research, consultation, implementations and analysis - including solution scoping, design, coding and development - but has also the blend of experience that allows us to make informed predictions for the way we believe PLM and the other closely related technologies that support it will develop this year and beyond.

So, what can we expect for PLM in 2020 and beyond?

3D INTEGRATIONS

WhichPLM conducted a survey of each of the leading 3D & PLM vendors in late-2019, attempting to gauge their progress on integrating the two technologies. The results proved beyond any doubt that the industry has only scratched the surface when it comes to the integration of 3D to PLM and vice versa. It's fairly clear that present integrations between PLM and 3D are, in the main, very low-level – covering the ability to preview 3D assets. Beyond this we have not seen any credible evidence of deeper integrations, e.g. what we call bespoke bi-directional sharing of ultra-high-resolution scanned materials coming from a PLM (DAM/PIM) to help drive the workflow. We heard many claims from both 3D and PLM vendors alike that they had multiple projects underway, but, in reality nothing of any serious value – beyond the aforementioned object viewers - has been completed thus far. Hopefully, now that we have spoken to each of the vendors, we will see some positive actions and results coming in the next twelve months. We expect further developments driven by COVID-19 and the need to design and develop virtually.

We are happy to hear from any PLM or 3D vendor that would like to discuss our comments and would welcome you to share any advancements that would help to educate the WhichPLM community on whether deeper 3D-to-PLM integration has actually been realised and how customers may value from them.

MULTI-TENANT

Today there are three approaches to deploying PLM: on-premise, private cloud single-tenant, and public cloud multi-tenant. On-premise is what we might refer to as the traditional way of deploying PLM: buying perpetual licenses with large up-front capital expenditure, and investing in the infrastructure to host it at the client's site or a data centre of their choosing. Today, that model still has merit for large, multinational corporations who have legitimate reasons to wish to control their own IT infrastructure, but smaller or medium-sized businesses are increasingly moving over to one of the two alternatives.

So what's the difference between the two? Single-tenancy is, as the name suggests, a single instance of PLM, often running on a vendor's private cloud, that needs to be updated, maintained, configured and administered on an individual basis. Multi-tenancy, on the other hand, is a single instance of PLM running on public cloud infrastructure (i.e. AWS or Azure) that serves multiple customers – each with their own isolated database, but each sharing the same – or at least a

very similar – version of the software, which has been non-destructively configured for their needs. For mid-market and smaller businesses, multi-tenancy has a lot of potential benefits. The first that comes to mind is lower costs of ownership through economies of scale: with multi-tenancy, scaling has far fewer infrastructure implications than with a single-tenancy-hosted PLM solution because new users get access to the same PLM software, with no need for individual deployment or any kind of customisation.

Shared infrastructure also leads to lower costs: SaaS allows companies of all sizes to share the same infrastructure and data centre operational costs. There is no need to add applications and more hardware to the PLM environment when your business grows – this cost is borne by the vendor, although some will impose bandwidth / throughput limitations. And the obvious benefit is, of course, ongoing maintenance and updates: customers will no longer need to pay costly maintenance fees to keep their software up to date.

True multi-tenant PLM vendors will roll out new features and updates every few weeks and that are included with your subscription. And finally, truly non-destructive, low-code configuration(s) can be done to PLM while leaving the underlying codebase unchanged; single-tenant-hosted solutions, on the other hand, are often configured and customised, requiring changes to the core PLM code. This customisation is often costly and can make upgrades time-consuming and expensive! Expect to see a wider variety of multi-tenant options in the very near future.

AI & ML

Today, the terms artificial intelligence (AI) and machine learning (ML) are often used interchangeably. Indeed, we have recently seen them being used this way in PLM-related marketing. The real question facing the industry, though, is when we can expect machine learning (which is just one class of technologies that sit under the AI umbrella) to be capable of automatically detecting and learning from the kinds of datasets many brands and retailers have stored deep within their PLM and ERP libraries. With the right training, there is no reason that machine learning could not operate intelligently alongside existing domain experts as a kind of virtual assistant, leveraging insights from that past data to help suggest and create basic style template options. The rise of AI & ML is already setting new standards of efficiency, quality, and functionality in other industries – supplementing rather than replacing human capabilities. Intelligent automation in our industry could offer real support to designers and developers, allowing them to quickly make sense of vast amounts of information, and guiding all those involved in the value chain

to work smarter. We look forward to hearing more from the PLM vendors that are starting to use AI & ML, and encourage you to come forward and share your news.

SUSTAINABILITY

One of the most-requested features from new PLM project teams and seasoned end users alike is better support for Corporate Social Responsibility (CSR), supplier management, and sustainability. These are all areas where, at present, most PLM solutions lack any real depth. Some may have reasonable vendor score card functionality, for example, but in reality they offer very little more in terms of design, material sustainability, product development and supplier knowledge bases – or in other words no real way for brands or retailers to properly manage their exposure to risk, or to nurture closer relationships with key suppliers. Brands themselves are already taking the lead here, but governments and NGOs are also pushing to reverse the inequality that remains pervasive across the world, enforcing both environmental and ethical standards in areas such as forced labour and wages that fall below the ILO (International Labour Authority) guidelines.

Broadly speaking, though, the industry as a whole needs to come together to assess the risks associated with the supply chains and the steps necessary to prevent issues – following in the footsteps of forward-thinking sustainability-led brands before it's too late. This will mean implementing best practices and teaching the new generation of designers & developers to make the right choices – and PLM should prove itself to be the perfect platform for sharing that knowledge and enabling that kind of informed decision-making. And at the same time, PLM provides a framework that will allow retailers, brands and manufacturers to define a set of characteristics and collaborate with their suppliers to help deliver on sustainability goals with mutual benefits. And of course PLM remains the place to audit and manage those supply chain partners on an ongoing basis to ensure that they are part of the solution and not the problem.

We also call on retailers, brands and manufacturers to support the PLM vendors with robust sustainability use-cases, linked to design, materials, product development, sourcing, costing, fair labour rates, manufacturing and logistics. Without your clear commitment linked to priorities and drivers, it's almost impossible to create effective sustainability modules.

These are just a few of the new technology developments that we see making the biggest impact in the RFA space in 2020 and beyond. Be sure to visit WhichPLM on a regular basis to keep up with the newest developments in fashion and retail PLM.

CHOOSING A PLM
THAT BEST MEETS YOUR COMPANY NEEDS & BUDGET

Mark Harrop
CEO & Founder
WhichPLM Group

Choosing the right PLM solution is the most important of all the decisions you're going to make on your PLM journey. The wrong choice could cost your business a large amount of money by the time you've managed to untangle yourself from a poorly-fitting PLM partnership. But just as importantly: a failed PLM project will also put your employees off any future PLM initiatives – damaging not only their faith in PLM itself, but also in management's ability to make the right decisions for the future direction of the business.

If you have found yourself in this situation – choosing the wrong vendor, and only realising that fact too late – then you may be tempted to try again straight away. But my advice would be to wait. Rather than rush back into things, instead focus on gaining back the confidence of users that have suffered via a poor decision to implement an ill-fitting PLM solution. Instead, we encourage any company in this situation to instead look at making process improvements that should be carefully documented, clearly understood by everyone

they touch, and practiced by all those involved. Only after this should you consider approaching the market again.

On the positive side, you won't be alone. While we would like every PLM project to have a happy ending, you definitely will not be the first out there to have made the wrong choice when selecting a PLM vendor. Sadly, brands and retailers are regularly caught up in a rush to decide on a PLM solution, and get tempted by the silver bullet of PLM sales and marketing spin - only to find several months later that the solution they were sold fell short of expectations!

But whether you are approaching the market for the first time, or coming back after a previous project failed to take flight, there are many, many more positive PLM stories than negative ones. For the most part, when it is properly selected, implemented, and used, PLM can easily become the beating heart of a multi-year digital transformation. And when they recognise the scale of that impact, customers realise that it

pays dividends to be cautious and to come to a careful, reasoned decision as to which PLM vendor to partner with.

To help make that decision, we have set out a simple guide to the kinds of questions you might want to ask – not just of your shortlisted vendors, but of your own business as you embark on your PLM project.

QUESTION: HOW DO I START COMPARING PLM SOLUTIONS?

You can start by comparing each PLM vendor that has been open and transparent enough to have their solution evaluated by WhichPLM's expert team. Based on up-to-the-minute selection criteria and also informed by our decades of experience in designing and delivering successful PLM projects, these evaluations are the best first-stage tool for anyone interested in knowing how key PLM solutions stack up against one another. Also, beyond those vendors that have been evaluated, you will be able to find details of PLM vendors that are listed in previous publications and Buyer's Guides. (And don't just take our word for it - you can read our Reference Pack here.)

QUESTION: IS THIS A GOOD TIME TO BUY PLM?

Given the speed at which the PLM industry for retail, footwear, and apparel has advanced in the last few years, there has never been a better time to buy a new PLM solution. Most modern PLM platforms have core functionality covered to a good degree, and there are several extremely strong solutions available on the market – all of which demonstrate broad, mature feature sets, as well as specialising in different areas. Whether your priority is a simple, easy to use OOTB (Out Of The Box) Technical Specification, or you have more complex requirements, there are no shortage of options and cost models for your business to choose from.

QUESTION: WHAT IS IT WE ARE TRYING TO FIX WITH PLM?

Before approaching the market and receiving demos from PLM vendors, carefully consider why you want a PLM solution in the first place. What is it that you want to improve? Do you have clear use cases in mind for PLM in core design and development and beyond? When it comes to answering this question, we would suggest that you should focus on the critical functional must-haves, rather than a long

list of nice-to-have features that may eventually add value, but that are unlikely to deliver a return on investment in the vital early stages of the project. We would also suggest that you give extra weighting to the modules and processes that offer the greatest value to your business and your extended partners.

QUESTION: IS THERE AN ALTERNATIVE TO PLM?

If you are a fast-fashion business that primarily buys most of its merchandise from suppliers who are in turn responsible for the development of the product (block development, fitting, sampling, bill of materials, costings etc.) then perhaps you might want to consider a very light PLM. After all, detailed Bill of Material functionality is unlikely to be of much use to you. You may even find that a 2D or 3D Design solution that would allow you to share basic specifications would support your needs, although this is rare (at least, at the moment). If you do go beyond pure design, into development, and source more than finished product then the answer is simple: you need PLM to be efficient and to stay competitive.

QUESTION: IS EVERY PLM SOLUTION SUITABLE FOR ANY BUSINESS?

The answer is no, there is no such thing as one size fits all. PLM solutions can be complex, and they come with a multitude of different options - each with its own list of modules, main processes, sub-processes, features and functions. On average there are more than 50 different processes included in a typical PLM solution, each of which is likely to be of a different standard when compared to the industry average - hence why WhichPLM evaluates and measure those that are open to transparency.

QUESTION: WHERE DO WE START WITH PLM?

Based upon our long-term experience we would recommend that you first ask the following question: what type of business are we? Because the answer to this question will determine what you are likely to need from PLM. This in turn will help you to build a shortlist.

As an online, fast-fashion e-tailer, you are likely to only require a very simple Tech-Pack designed to help you create new styles quickly, supported by tight integration with Adobe Illustrator - and with sample sizing rather than using the full depth of the sizing module. In addition, you are likely to benefit from supplier collaboration capabilities and perhaps ready-made integration to one or more 3D solutions.

As a retailer that sells its own private label merchandise, you might want to look for a PLM solution provider that is heavily focused on the retail sector and is more interested in planning, creative design, Adobe integration, storyboards, material development, high-level costing, P.O. management, packaging, labels and sourcing.
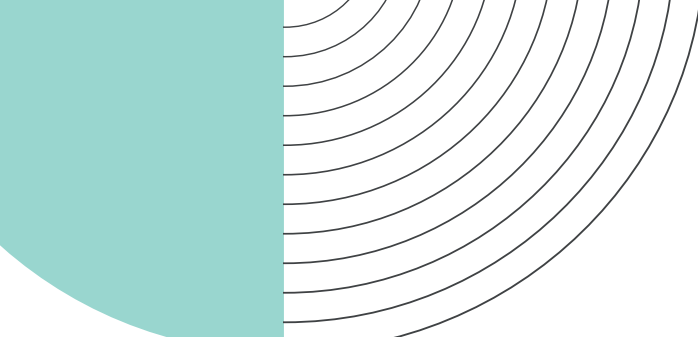
As a brand that offers both fashion and technical products, it's likely that you will want to find a vendor that is closely linked to brand customers. This would mean offering deeper design and development functionality, including merchandise planning, creative design, storyboards, 2D pattern engineering, sizing, 3D virtual design & development, material development, bill of materials, bill of labour & extended costing, components, packaging, labels, sourcing, full partner collaboration and tracking.

As a manufacturer, you may be looking to PLM to make improvements to the efficiency of your business and offering closer collaboration services to your customers. If so, perhaps your business may be interested in co-design creative solutions including 2D pattern engineering, 2D creative & technical design, 3D design to engineer/make, sizing management, BOM, BOL, extended costing, material development and colour management, CSR, Sustainability, real-time shop floor tracking, and capacity management.

QUESTION: CAN WE EXTEND PLM INTO OUR SUPPLY CHAIN?

Until recently, technical specifications were typically shared between customer and supplier as PDFs, via email. This process was replaced by dedicated vendor portals, introduced

by PLM vendors as a way of bridging the gap between live PLM data and static email. Vendor portals essentially offered the same process but placed the Tech-Pack PDF into a central location to be downloaded and uploaded by the supplier, with some level of accountability. More recently we are seeing customers and suppliers sharing the same PLM platform with the ability to work on a single style in real-time, with no "dead" data, along with full access and restricted security. We would strongly recommend the latter as the best-practice approach – and while it may not always be feasible to make PLM accessible to your suppliers early in the project, this extension should be considered a priority for the next phase once your PLM solution is being used to its full potential in-house.

QUESTION: WHO ARE THE PLM SUPPLIERS AND CAN THEY MATCH OUR EXPECTATIONS?

The good news is that each of the PLM solutions listed in this year's Buyer's Guide has achieved a very good to better level of maturity and can be trusted to deliver good quality implementations. This should not, though, be translated to mean that you won't need to do your homework when making a selection - far from it. While basic functionality is more than likely to be covered by every major PLM vendor, to find the best fit for your business you should take your time to ensure that the solution and the vendor selling it are both suited to the way you really work.

QUESTION: DO WE HAVE THE MEANS AND INTERNAL EXPERIENCE TO MEASURE THE SUPPLIERS?

Unless you have an experienced PLM project team in-house – i.e. people who have worked with PLM to a deep level in a previous role – then you may want to consider bringing in external experts with a track record of successful fashion and retail PLM projects under their belts. Today's PLM solutions are indeed extremely complex and can include 50+ processes, each with its own level of sub-complexities. Without the right knowledge and experience, added to this the technical architecture knowledge that goes with on-premise PLM implementations, then we would suggest involving proven, independent experts in your solution selection process to help reduce the risk involved.

QUESTION: DO WE HAVE A CLEAR AND SOLID BUSINESS CASE FOR PLM?

If you haven't already developed a business case that is supported by an in-depth ROI (Return On Investment) analysis, then we suggest that you should avoid moving forward until you have completed one. Put as simply as possible: investing significant amounts of time and money – even with low-cost subscription PLM being a viable option in 2020 – with an uncertain return is not advisable.

QUESTION: DO WE HAVE THE REQUIRED EXPERTISE TO INTEGRATE PLM TO OTHER INTERNAL SOFTWARE SOLUTIONS?

In the vast majority of cases, a PLM implementation will include integrations to other business systems. In most cases this will mean linking PLM with ERP (Enterprise Resource Planning), but other common integrations include Merchandise Planning platforms, 2D CAD, 3D design tools and others. If we look at ERP only, then we would estimate for a SME (small to medium) business that around 20-40 days would be required to, document, configure and to customise a bi-directional integration between ERP & PLM. If the PLM solution you have chosen is part of a portfolio that also includes ERP and other elements then you may be able to reduce the cost of integrations via the vendor's own middleware integration engine.

QUESTION: DO WE POSSESS THE INTERNAL SKILLS TO DELIVER A PLM PROJECT?

Your business will need to appoint a PLM project manager and user team with good project management skills – people who ideally are already experienced in selecting and implementing technology solutions. This team will then require the support of someone (a user-champion) with a great deal of experience across the business – covering both internal and supply chain processes. Together, this team should be able to deep-dive into all business processes and understand the impact that a PLM implementation will have on them. Beyond the business you should be extremely careful when choosing a vendor to ensure that they know your area of business and, like your own team, they should also have the expert resources to put onto your project from the very first day to the very last day. Often the PLM vendor A-Team is with you for the beginning of the project and then gets pulled off to other projects as new deals are signed, leaving less-experienced implementers or even third parties to deliver the later, even more critical, stages of the implementation. Both your in-house and your vendor's team should remain consistent throughout the project; if either is in doubt, your implementation could suffer.

QUESTION: HOW LONG WILL IT TAKE TO IMPLEMENT A PLM SOLUTION?

This greatly depends on how complex your business is. Are you operating on an international level? Do you have multiple brands? Do you have a complex product range? The list of
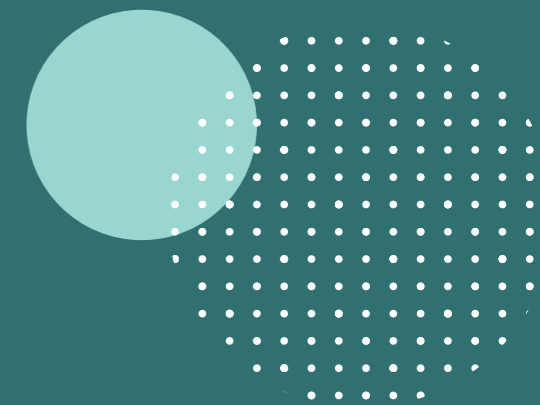
questions can go on and on. Assuming you're a medium-sized operation and you want to use a configurable, OOTB PLM solution, adhering to best practices, you will be looking at a duration of somewhere between four to six months. Note that this will be subject to the answers given to the above questions and could be reduced or go much higher - it's all relative to the complexity.

QUESTION: I'M A FOOTWEAR OR KNITWEAR BUSINESS - DOES THIS CHANGE ANYTHING?

It will be important that you look for a PLM vendor that specialises in your product sector. It's relatively easy for PLM vendors to develop a nice looking footwear or knitwear presentation, only for the prospective customer to dig a little deeper and find that they have no real product expertise or customer references. There are several specialised vendors that support footwear and knitwear products, so make sure that you look at every vendor carefully, and assess their credentials when it comes to supporting your unique business model.

These are just a short example of the many questions that you should be asking yourself and your team before starting out on your PLM journey. And while prospective PLM customers are becoming better-educated through services like WhichPLM, it remains common for selection teams to lack the experience and deep domain expertise to scientifically measure everything they need to take into account before making their choice.

This isn't to say that project teams do not understand their businesses - most of them certainly do and that's going to be critical as part of any modern PLM implementation going forward. Keeping in mind that the majority of the PLM vendors today offer OOTB solutions that can be easily configured compared to the previous generation of heavily customised PLM (Tool Sets). But even with that being the case, it's still not surprising even today for a company to select

an OOTB solution that comes complete with a long list of modules and best-practice processes, only to find that the vendor implementation team continues to follow the old method of the As-Is (your current methods) & To-Be (your future methods) process workshops that should no longer be required! When you buy a smart phone, do you start by configuring and customising the screens and apps to do what you need them to do, or do you simple charge it and learn to use it? PLM in 2020 should be no different.

New prospects should, therefore, be careful to ensure that they are not overpaying for long-winded and customisation-heavy implementations. Instead, PLM customers should be looking for solutions that come standard with fully-documented best practice processes. Obviously integrations to third party technologies will require some level of customisation, but even then you should ask the vendor to confirm that your customisations are able to be developed in a framework that enables your PLM solution to take advantage of all future software upgrades at no extra cost or delay to your business.

To help you further, WhichPLM has developed a new PLM comparison tool, to help prospects compare multiple vendors across fifteen different categories - each linked to a group of sub-processes. This tool pulls from the many detailed PLM evaluations our team has already undertaken – all of which are available free of charge from the WhichPLM website.

We hope that this information, along with its supporting publications, evaluations and tools, will give you a small sample of the type of questions you will need to ask of your business before moving ahead on your PLM journey.

PLM VENDOR PROFILES

Beginning with the very first Customer Survey in 2010, our publications have been considered essential reading for any brand, retailer or manufacturer preparing for a PLM project – at least in part because they contained the most comprehensive listings of key PLM vendors to be found anywhere.

We are thrilled to be able to publish these listings – often referred to as the "PLM bible" by project teams undergoing the difficult task of shortlisting and selecting a solution – to the widest possible audience, allowing everyone to make the most informed choice possible. Each profile contained in this section collects statistics, insights, and opinions exclusive to WhichPLM, and are designed to collectively serve as an introductory tool for any fashion organisation looking to better understand the regional and multinational players that make up the PLM market in the financial year 2019/20.

To make this shortlisting exercise simpler, we started in 2015 to apply more stringent inclusion criteria to ensure that the vendors who appear in these listings played a demonstrable regional or global role in the RFA PLM market. The same criteria have been carried through with each publication. So while smaller vendors may appear in the market itself (and may, indeed, be the right choice for a certain type of customer) these listings are purposefully confined only to those vendors who are making sufficient impact to actually steer the industry in a meaningful sense.

On the surface it may appear as though this kind of first-stage filtering of the global pool of vendors serves to artificially reduce choice, but it's important to remember that of the forty or more software vendors that claim to sell PLM for fashion, only a fraction actually offer what WhichPLM and other analysts consider to be a modern PLM product, and only these merit inclusion in a WhichPLM publication. Some

vendors, for example, continue to sell outdated PDM software with a PLM sales pitch, while others who advertise PLM functionality actually better qualify as providers of extended PLM – particularly those in the area of supply chain management and planning. Other vendors whose software does meet the criteria we set out instead fell short of our minimum RFA sector turnover requirements, voluntarily excused themselves from listing, or were revealed during WhichPLM advisory engagements to lack the apparel industry expertise or experience to merit inclusion on prospective customers' selection lists.

Although any PLM vendor is welcome to submit its product and services to a WhichPLM Supplier Evaluation, this section is restricted only to those vendors who we know to be making continued research, development and investment efforts, and who are invested in the apparel industry either entirely, or as a strong element of a broader industry portfolio.

By contrast, the Market Analysis contained later in this publication attempts to cover the industry in a holistic sense, and the sales made by smaller or more niche vendors have been factored into our analysis efforts this year. For a more complete look at the international PLM market as a whole, please turn to the Market Analysis portion of this publication, or visit the WhichPLM website to view more comprehensive vendor listings. For vendors that cater to two or more different industries (i.e. another vertical alongside their presence in fashion and retail), the figures that appear in the following pages are confined to the sale, development and support of core PLM for the retail, footwear and apparel industry only. Similarly, where a vendor markets a range of products to the apparel industry - as is the case with vendors of CAD/CAM, pattern making software, three-dimensional design, and other components of the extended product development environment - we have disregarded income,

resourcing and investment that falls outside the scope of this section's PLM focus.

In the following pages, we present overall customer figures, resource allocation by region, and the ratio of internal to external users as supplemental to the core customer data that has always been the backbone of our vendor listings. Where "N/A" appears, it denotes that the vendor in question was unable or unwilling to provide the relevant information. In the majority of cases, the division between public and private companies' disclosure policies was the cause, but in some instances information was withheld for other reasons. For this reason, "N/A" should be read as "not publically disclosed".

Elsewhere, our vendor profiles continue the tradition of asking each listed supplier to provide their own insight into what they feel has differentiated them from their core PLM competitors this year, and to explain what they see as the prominent emerging trends for the near future.

Where actual sales to new customers are concerned – our primary metric for the Market Analysis section of this publication - we remind readers that despite our best efforts towards verification and completeness, these lists cannot be exhaustive. Many of the suppliers listed here have made sales that have not been disclosed to the public, either through reasons of brand secrecy, or because those implementations have not yet reached agreed milestones at which they can be discussed in public forums. We have afforded suppliers the opportunity to number but not name these customers, provided their identities have been disclosed to the WhichPLM team under the terms of a non-disclosure agreement.

The final accuracy of these customer lists, too, remains the responsibility of each individual vendor. Just as we have in

previous years, the WhichPLM team rebuffed attempts by suppliers to pass off non-PLM customers, non-apparel or CPG crossover customers, and customers whose contracts were signed far outside the 2019/20 period as valid inclusions for these pages. We are happy to report, though, that this practice occurs less and less frequently with each passing year. Where vendors chose instead to stand by their initial submissions, WhichPLM holds written confirmation from each of these suppliers that the customer lists displayed in their vendor profile are accurate, despite our own misgivings.

Although we do thank the overwhelming majority of vendors for their honesty, nothing in the vendor profiles or advertisements that follow should be considered as an endorsement of any particular PLM vendor.

Even today, when low-cost, low-risk subscriptions are becoming the preferred way to buy PLM, all prospective customers should be seeking a viable and sustainable long-term partner. This means shortlisting and selecting on the basis of financial stability, expertise, experience, and demonstrable investment in their PLM product. A vendor who is able to share these details and be candid about their performance and roadmap is clear about their willingness to engage in the kind of frank, open partnership that a truly successful PLM project demands.

Readers are invited, after finishing this section, to turn to our consultancy listings to continue building their picture of the apparel technology landscape, or to visit the WhichPLM website to see whether their newly shortlisted supplier(s) has submitted their solution for an impartial WhichPLM Supplier Evaluation.

+ 64
NEW CUSTOMERS OF RFA PLM, INCLUDING:

12Storeez, Sevfun, Balabala, Björn Borg, Broteks, Classic Brands, Cobalt Fashion, Cobian, Damart, Ebebek, Erdos, Fila, Finn Flare, Foschini Group, Gomino, Grain de Malice, Gymshark, Hallhuber, Herno, Icicle, In Mocean Group, InterDesign, International Trading Fashion & Apparel Supply (Kiabi), Jules, K-Boxing, Kariban, Klattermusen, Lanvin, Life is Good, Lime, Liverpool, MAC, Made for Retail, MAS Holdings, Maxrieny, Metro Design, NAADAM, Neiwai, NEMO Equipment, Orsay, Petrol Industries, Pimkie, Riachuelo, RougeGorge, Saxx Underwear, Scott Sports, Simplicity Trade, Sunwin, Superior Group, Tamara Mellon, Tesco (F&F), The Gap, Inc., ThirdLove, Top Form, Welfull, Woody Group, XueGe (ZhiLi Group), Zeal Concept

360
OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2019/20

116
NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

## 72,000
TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

N/A
TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION:

Licensing revenue:	All maintenance revenue:
N/A	N/A

Implementation & services revenue:	R&D investment:
N/A	$11-20 million

TOTAL NUMBER OF RESOURCES FOCUSED ON THE RFA INDUSTRY BY REGION:

(Excluding those cited as R&D-specific resources aside.)

North America:	Latin America:
101	13

EMEA:	APAC:
145	114

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.

Centric Software® retains its position as the #1 PLM with the highest number of PLM replacements, new customers, migrations and user adoptions worldwide. Centric now has 370+ customers, representing 1,250+ brands. Recent developments emphasize efficiency, speed, collaboration and connectivity, including:

- Centric launched 3 Quick Start Collaboration packages to get brands, retailers and manufacturers working remotely in days to continue business-critical operations in response to marketplace disruptions.

- 3D material and sample reviews directly in Centric PLM™ and streamlined connectivity with 3D solutions like CLO, Browzwear and Optitex to reduce time to market, lower development costs, increase product innovation and reduce waste.

- Automate data flows with connectivity to best-of-breed solutions, including 40+ ERP solutions, First Insight decision-making software, Adobe® Illustrator, 3D design programs, Vizoo material scanning and more.

- Manufacturing PLM enables brands, retailers and manufacturers to harmonize tech pack data, even with multiple systems or PLM solutions in play.

- The Visual Line Planning Board drives both remote and in-person meetings to speed time to market and ensure collection success.

- Mass create/edit capabilities for vendor co-design and streamlined workflows for multi-sourced products.
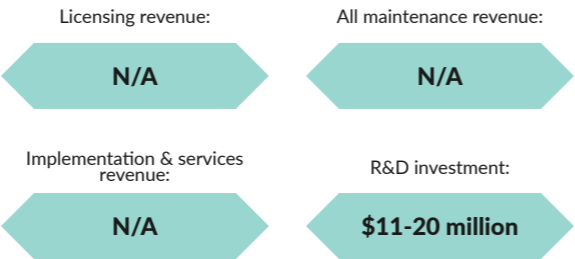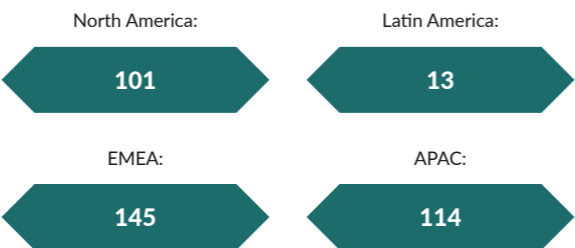
TELL US WHAT YOU BELIEVE ARE THE MOST IMPORTANT TRENDS SHAPING THE NEAR-TERM FUTURE OF THE INDUSTRY - EITHER IN TERMS OF TECHNOLOGY OR BROADER MARKET FORCES.

Market disruption has massively affected the industry, with challenges such as rolling lockdowns and a switch to remote working. We foresee greater demand for solutions such as our Quick Start Collaboration packages, which enable remote work for sample reviews, vendor collaboration and buying sessions in order to continue working and alter strategies quickly.

As market disruption occurs, many will keep their remote working practices and commit to implementing more extensive PLM solutions. Efficiency will be the name of the game.

We will continue to evolve our 3D strategy along with innovations such as our industry-first PLM mobility applications suite and artificial intelligence-driven technologies to enable users to work more efficiently, drive competitiveness, boost sales and promote business growth.

Cost reduction, efficiency and competitive differentiation will be major drivers as value for money, product innovation and product personalization will heavily influence consumer purchases.

As the industry shifts to accommodate new realities, we will remain at the forefront of PLM innovation, continue to partner with our customers and provide the ultimate best practices.

#1 PLM FROM CENTRIC SOFTWARE
DRIVING EFFICIENCY & REMOTE COLLABORATION

FASHION | RETAIL | CONSUMER GOODS

CLOUD-BASED SAAS SOLUTION	INDUSTRY-FIRST ENTERPRISE 15 MOBILE APPS	GROUNDBREAKING AI & 3D	FAMILY OF DIGITAL BOARDS SUITE

NEW! CENTRIC QUICK START: REMOTE COLLABORATION FAST!

370+
CUSTOMERS. 1250+ BRANDS.

35%
OF OUR CUSTOMERS SWITCHED FROM A PREVIOUS PLM.

70%
OF OUR CUSTOMERS GAVE A PUBLIC TESTIMONY!

Begin your digital transformation journey. Visit www.centricsoftware.com

+ 15
NEW CUSTOMERS OF RFA PLM, INCLUDING:
ISKO

185
OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2019/20

60
NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

9,100
TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

18,000
TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION:

Licensing revenue:	All maintenance revenue:
N/A	N/A

Implementation & services revenue:	R&D investment:
N/A	$3-5 million

TOTAL NUMBER OF RESOURCES FOCUSED ON THE RFA INDUSTRY BY REGION:

(Excluding those cited as R&D-specific resources aside.)

North America:	Latin America:
150	13

EMEA:	APAC:
10	110

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.

Last year, our PLM roadmap was focused on enhancing global multi-party collaboration across internal and external users.

Today, we introduced an updated security configuration in PLM. The enhanced security enriches third-party access in our collaborative PLM platform. Customers can be invited to approve and submit requests online, and they can be invited to view new product development designs that are specifically created for them.

We also introduced an enhanced sampling, fabric tracking and location management in our new release. Companies can now buy (PO), track (ASN) and locate inventory of finished goods and raw materials.

TELL US WHAT YOU BELIEVE ARE THE MOST IMPORTANT TRENDS SHAPING THE NEAR-TERM FUTURE OF THE INDUSTRY - EITHER IN TERMS OF TECHNOLOGY OR BROADER MARKET FORCES.

COVID-19 has reshaped the industry in a lightening way, disrupting the global supply chain.

To meet the modern day expectations of a global sourcing and product development team, we have made enhancements to our PLM to make it more accessible, device agnostic and responsive by improving bandwidth and response times.

Our effort to make our PLM an advanced collaborative platform has lined up with the market disruption. With less travel and growing requirements for remote team work, the rich collaborative features in our PLM enables internal users and global suppliers to work remotely on a single unified platform.

+ 2
NEW CUSTOMERS OF RFA PLM

49
OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2019/20

15
NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

3,288
TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

686
TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION:

Licensing revenue:	All maintenance revenue:
N/A	N/A

Implementation & services revenue:	R&D investment:
N/A	$0-2 million

TOTAL NUMBER OF RESOURCES FOCUSED ON THE RFA INDUSTRY BY REGION:

(Excluding those cited as R&D-specific resources aside.)

North America:	Latin America:
2	2

EMEA:	APAC:
36	42

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.

VisionPLM's functional footprint extends beyond conventional PLM and reflects Coats Digital's unparalleled supply chain reach and industry expertise.

Coats Digital empowers the fashion supply chain through a unique digital ecosystem of connected, intelligent applications which support agile, transparent, efficient and integrated supply chains. From product development and sourcing (VisionPLM), to time-cost benchmarking (GSDCost), optimisation of fabric buying and utilisation (IntelloCUT/ IntelloBUY), and market leading planning solutions for manufacturers (FastReactPLAN).

Examples of recent VisionPLM advancements include:

- **PLM Accelerator** - For rapid deployment, reduced business disruption and accelerated business benefits, take advantage of our new out-of-the-box PLM Accelerator. It is built on standard templates and industry best practice, with light configuration and is ready to grow and evolve with your business.
- **Colour Development** - Enhancements to our colour module to support prints, palettes and seasonal colours, leveraging leading colour standards and improving control of colour approvals.
- **Customer and Supplier Filtering** - Develop and seamlessly collaborate across departments and through the supply chain with enhanced control of customer and supplier views, permissions and navigation.
- **Workflow and UX** - New status workflow and enhanced controls have been added to improve user focus and speed through system, while PO management has been enhanced to support increasingly complex freight, warehouse and distribution scenarios.

TELL US WHAT YOU BELIEVE ARE THE MOST IMPORTANT TRENDS SHAPING THE NEAR-TERM FUTURE OF THE INDUSTRY - EITHER IN TERMS OF TECHNOLOGY OR BROADER MARKET FORCES.

The tragic human cost and huge economic impact of Covid-19, has also highlighted the critical importance of digitization and the low levels of process and digital maturity in the fashion supply chain. While an increasing number of progressive retailers/brands are driving digital transformation as a strategic priority, progress further upstream with manufacturers is patchy at best. The result is that our industry has been disproportionately affected by recent events and continues to grapple with manual, disconnected processes, siloed data and a lack of international standards, all of which undermines speed, efficiency, visibility and compliance.

As we navigate towards the 'new normal', the multiple challenges of increased speed, complexity, demand volatility and margin pressure will be more acute than ever. There will be significant shakeout and as brands/retailers make sourcing decisions, the winners will increasingly be those businesses that embrace digital transformation to deliver the triple bottom line of people, planet and profit. PLM is an important part of this journey, but increasingly winning where is matters means a digital ecosystem of connected, intelligent applications embedded with deep industry expertise, to drive transformative change and the seamless sharing of data in a collaborative, agile, transparent and sustainable supply chain #coatsdigital #connectedfashion

VISIONPLM

Beyond conventional PLM …
win where it matters

Empowering the fashion supply chain of tomorrow with a unique digital ecosystem embedded with deep industry expertise

#connectedfashion

www.coatsdigital.com

COATS DIGITAL

+ 19
NEW CUSTOMERS OF RFA PLM, INCLUDING:
Elevenate, French Connection, Houdini Sportswear, Lilanz, OnPoint Manufacturing, Vilebrequin

279
OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2019/20

65
NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

28,271
TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

16,406
TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION:

Licensing revenue:
N/A

All maintenance revenue:
N/A

Implementation & services revenue:
N/A

R&D investment:
$6-10 million

TOTAL NUMBER OF RESOURCES FOCUSED ON THE RFA INDUSTRY BY REGION:
(Excluding those cited as R&D-specific resources aside.)

North America:
69

Latin America:
3

EMEA:
41

APAC:
32

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.

Gerber continues to focus on delivering a cloud-based, multi-tenant solution, providing world-class industry functionality to all clients, regardless of size. A true multi-tenant solution such as YuniquePLM® will help drive digitalization and reduce customer costs, both of which are paramount to businesses in order to survive the current economic uncertainty.

YuniquePLM releases occur every 6 to 8 weeks and include many new and improved features in each release. Customer feedback influences product improvements which in turn helps satisfy the needs of the wider business community.

Features to simplify the use of YuniquePLM ensures that customers quickly gain the benefits of a PLM solution. The new ultra-modern UI continues to improve the customers' experience across the entire Gerber solution portfolio. Continued investment and development of an evergrowing number of API's ensure customers can seamlessly share data across their enterprise.

YuniquePLM continues to support the business case for 3D and virtual sampling. Even tighter integration with Gerber's AccuMark® and AccuMark 3D software, as well as other third-party pattern systems allows users to manage virtual or physical sample requests directly in YuniquePLM.
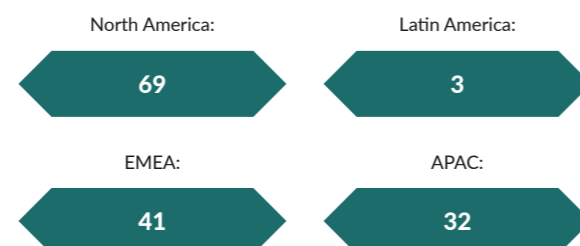
YuniquePLM allows users to view and make annotations to a 3D sample directly within a browser, without the need for additional software add-ons.
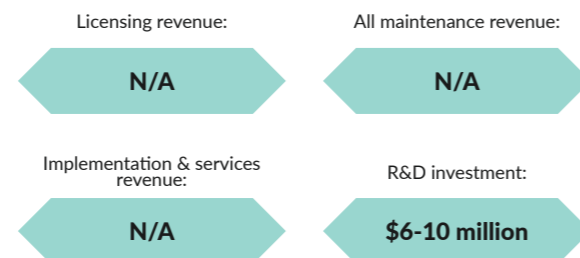
TELL US WHAT YOU BELIEVE ARE THE MOST IMPORTANT TRENDS SHAPING THE NEAR-TERM FUTURE OF THE INDUSTRY - EITHER IN TERMS OF TECHNOLOGY OR BROADER MARKET FORCES.

COVID-19 is re-shaping the world like never before and companies everywhere are being impacted. The biggest trends that are going to shape the industry both short-term and long-term are digitalization and sustainability.

With many people working remotely, companies are beginning to realize how important it is to have a fully-connected process. They're going to be looking for solutions that will allow them to share data with their teams and partners throughout the supply chain regardless of whether they're in the office or working remotely.

In addition, an end-to-end solution will keep a majority of the design, development and production processes in-house. With the pandemic, supply chains are disrupted, many companies are struggling to get raw materials and, as a consequence, are unable to deliver products on time. If manufacturers bring a majority of their supply chain in-house, they'll be able to have more control of their product timeline.

Sustainability will become a key priority for most companies with scarce raw materials and challenges with costs, requiring many to rethink their supply chain.

At Gerber, our end-to-end solution not only features the latest in PLM and 2D/3D CAD but also integrates with other software solutions, such as TrueFit, to make for a truly seamless process.

THE NEXT GENERATION OF
NOW

End-to-End Is Just The Beginning. Regardless of industry, today's companies face a level of uncertainty and supply chain disruption, requiring them to adapt quickly in order to survive. Those who leverage the latest technology, such as using YuniquePLM® to seamlessly connect data, will always be able to deliver products efficiently, effectively and sustainably. They will always be now trending – in the moment but ahead of everybody else.

GERBER TECHNOLOGY

gerbersoftware.com/solutions/on-demand-production/

infor™

+ 3
NEW CUSTOMERS OF RFA PLM, INCLUDING:

52
OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2019/20

N/A
NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

6,106
TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

797
TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION:

Licensing revenue:	All maintenance revenue:
N/A	N/A

Implementation & services revenue:	R&D investment:
N/A	N/A

TOTAL NUMBER OF RESOURCES FOCUSED ON THE RFA INDUSTRY BY REGION:

(Excluding those cited as R&D-specific resources aside.)

North America:	Latin America:
N/A	N/A

EMEA:	APAC:
N/A	N/A

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 CloudSuite PLM for Fashion became available in May 2019. A multi-tenant cloud service which offers new innovations monthly and customers can adopt these at their own pace. New features support processes from design to production. In the design area we extended capabilities for integration with CLO™ 3D design and matured the Adobe® Illustrator® plugin for 2D. A new visualization of style colour lines helps designers to see a complete total picture of their lines. We embedded new annotation capabilities and an enriched document library, which is integrated with Infor's Document Management. Mass creation capabilities and templates speed up style creation. In the area of sampling, we have enabled suppliers to work in more detail on requests and styles.

Companies using CloudSuite PLM for Fashion now have choices in the configuration of business rules, which are embedded in the solution. Role based ways of working are part of the core solution with different views for normal and partner users. The solution is intuitive and very easy to learn, which saves cost on implementation. CloudSuite PLM for Fashion scored 4.5 out of 5 stars for user interface, the highest score to date, in a recent WhichPLM evaluation.

TELL US WHAT YOU BELIEVE ARE THE MOST IMPORTANT TRENDS SHAPING THE NEAR-TERM FUTURE OF THE INDUSTRY - EITHER IN TERMS OF TECHNOLOGY OR BROADER MARKET FORCES.

We see an even higher focus on sustainability and social responsibility, especially in the area of circular fashion (style and fabric development characteristics for long-life use as well as customisation). In addition, consumers are asking for more details around supplier production supply chain and how it impacts the environment.

For the design/PLM process we see interest in 3D design and ability to get consumer feedback early in the collection development process to ensure alignment to consumer demand. Lastly, ensuring consistency of product definition attributes and traits to aide assortment optimisation.

infor™

Connecting the fashion value chain

Infor CloudSuite™ PLM for Fashion is a game-changing solution delivered as a cloud subscription service:

- Support for digital initiatives whether connecting into other applications, AI, or IoT

- An industry-leading, consistent UX with role-based homepages, social collaboration, and support for Mac, PC, tablets, and smartphones

- Powerful enterprise-level PLM capabilities, from creative design to sourcing and reporting

- Built with decades of experience delivering innovative solutions to the fashion industry

infor.com/cloudsuite-fashion

+ 27
NEW CUSTOMERS OF RFA PLM, INCLUDING:

7 For All Mankind, Alexander McQueen, Courrèges, Leo France Srl, MIRTO, Mitsui Bussan, MMW Srl (Slam Jam), Monnalisa, MooRER SpA, Robertson (Drumohr), Rossignol, TIVOLI/Smythson

245
OVERALL NUMBER OF ACTIVE CUSTOMERS

of PLM within the RFA industry, excluding customers cited as new in 2019/20

180
NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

11,000
TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

N/A
TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION:

Licensing revenue:	All maintenance revenue:
$3-4 million	$3-4 million

Implementation & services revenue:	R&D investment:
$3-4 million	$11-20 million

TOTAL NUMBER OF RESOURCES FOCUSED ON THE RFA INDUSTRY BY REGION:

(Excluding those cited as R&D-specific resources aside.)

North America:	Latin America:
20	20

| EMEA:	APAC:
165	50

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.

As discussed last year, Kubix Link is a cloud-based platform that incorporates PLM, DAM and PIM functionalities that can be easily integrated with other legacy systems such as ERP, CMS, PCM, and WMS. Our solution has since evolved, to meet current market needs, especially in terms of e-commerce.

We have notably strengthened our PIM capabilities, to help our customers communicate accurate product information faster on their store websites and marketplaces. At the click of a mouse, customers can now find and enter product data presented in the form of a Wikipedia-inspired page, in terms of materials, costs and technical specifications and publish it online. This gives companies an edge over their competitors as they can now inform their consumers while (or even before) their new products hit the market.

Although PIM works well on its own, the entire idea behind Lectra's offer is to integrate all systems into one smart platform. By having the powers of PIM, DAM and PLM and other legacy systems combined, companies can collaborate, manage store collections, gather and analyze store data and relay new product information to the public. It is a fuss-free; one-click operation that enables companies to be faster, more agile and profitable.
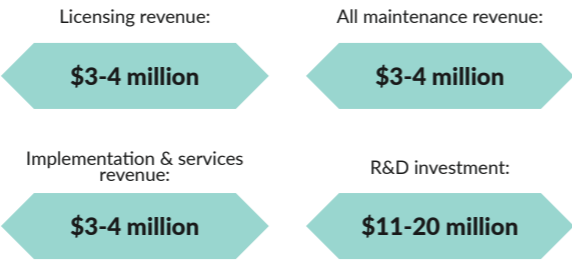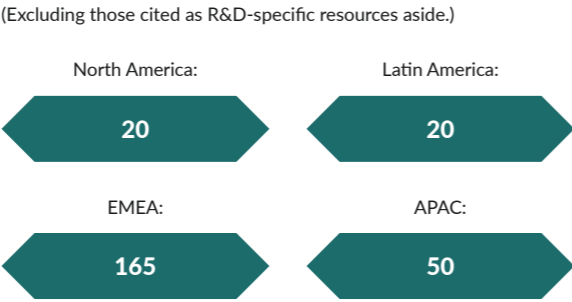
TELL US WHAT YOU BELIEVE ARE THE MOST IMPORTANT TRENDS SHAPING THE NEAR-TERM FUTURE OF THE INDUSTRY - EITHER IN TERMS OF TECHNOLOGY OR BROADER MARKET FORCES.

This year's unprecedented Covid-19 crisis has affected the fashion industry on every level, from CEOs to garment workers in Bangladesh. With the risk of unemployment, new childcare and financial responsibilities, the fashion consumer mentality has shifted. Shoppers will be more wary and conscious in their buying decisions - economically, socially and environmentally speaking. Trend cycles will be less seasonal and more need-based. Production will be paced by the consumers' needs, making it more irregular. Fashion companies will need to adjust to this pace by being more agile, ready to switch gears when needed. The consumer will demand more transparency and in return, companies need to be ready to share their product information more openly.

In order to adapt, companies need to rethink the way they produce, with accurate consumer data and more sensitivity towards their consumers' changed economic environment. They will need to be able to forecast demand, material cost and trends more quickly in order to reduce inventory and cushion themselves against market instability.

KUBIX LINK

Deliver the ultimate consumer experience
via an ever-evolving ecosystem of PLM, PIM, DAM and more. Join the empowered fashion collective at **Lectra.com**

+ 7
NEW CUSTOMERS OF RFA PLM, INCLUDING:
Destination XL, Foot Locker, Obermeyer, Topson Downs

160
OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2019/20

270
NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

40,125
TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

67,850
TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION:

Licensing revenue:
$21-40 million

All maintenance revenue:
$11-20 million

Implementation & services revenue:
$21-40 million

R&D investment:
$11-20 million

TOTAL NUMBER OF RESOURCES FOCUSED ON THE RFA INDUSTRY BY REGION:

(Excluding those cited as R&D-specific resources aside.)

North America:
100

Latin America:
**50**

EMEA:
50

APAC:
70

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.

NGC continues to add new capabilities to our Andromeda Cloud Platform®. NGC solutions now cover the entire concept to customer lifecycle, including our core PLM and supply chain management, quality and compliance solutions, plus demand, inventory, supply and retail planning.

With our Andromeda platform, users have access to all supply chain information from all the various systems in product development, sourcing, manufacturing, quality control and distribution. Most fashion companies must access multiple systems in order to get all the data they needed, then enter it into spreadsheets or share the data through static reports. Retailers and fashion brands should have a single platform to access all actionable information from all their disparate systems and quickly make decisions that accelerate lead times and respond quickly to consumer demand. That's exactly what Andromeda provides. Customers have the choice of using native Andromeda components as well as data from other legacy solutions, all of which can be aggregated within the Andromeda platform.

Andromeda helps retailers and brands maximize revenue and profit.
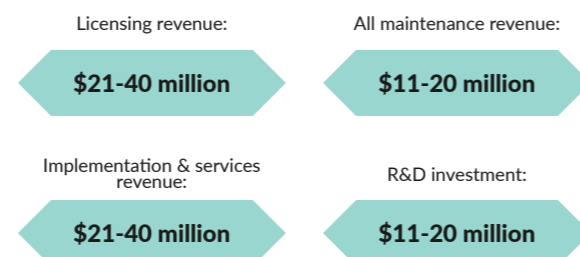
TELL US WHAT YOU BELIEVE ARE THE MOST IMPORTANT TRENDS SHAPING THE NEAR-TERM FUTURE OF THE INDUSTRY - EITHER IN TERMS OF TECHNOLOGY OR BROADER MARKET FORCES.

The future of retail depends on predicting consumer purchase patterns and responding to rapid shifts in demand. Artificial Intelligence is the critical element that enables a cognitive supply chain. AI relies on big data, so as consumer purchasing trends become more granular and comprehensive, AI will allow retailers to become hyper-accurate when designing, producing and distributing products to consumers. The retailers that can quickly design and deliver the products that consumers *really* want will thrive. The ones that don't will cease to exist.

NGC is uniquely positioned to help our customers succeed in today's hyper-competitive retail landscape. Our Andromeda Cloud Platform brings together all the disciplines that are involved in the concept to customer lifecycle, from product development to planning and execution, all in a single platform that's very flexible. No two retailers are exactly alike, so Andromeda can easily be adapted to their requirements. Andromeda provides a real opportunity for each brand to craft and configure differentiated solutions that meet the unique value proposition they offer to their customers.

NGC®

Andromeda®
Fashion's Digital
Cloud Platform

Execute Faster from Concept to Customer with a Single Connected Platform

NGC's Andromeda Cloud Platform puts you back in control whether you already own a PLM solution or not. Andromeda enables faster decision–making and execution by integrating planning, design, sourcing, production, logistics and replenishment into a single platform connecting internal and external partners across the supply chain to get the right products to customers faster.

+ 39
NEW CUSTOMERS OF RFA PLM, INCLUDING:
AMG, Brandart, Centric Brands, Cetih, Darice, Goody, Himatsingka, Marmot, Michaels Stores, Vivienne Westwood

143
OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2019/20

180
NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

161,212
TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

50,254
TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION:

Licensing revenue:
N/A

All maintenance revenue:
N/A

Implementation & services revenue:
N/A

R&D investment:
$11-20 million

TOTAL NUMBER OF RESOURCES FOCUSED ON THE RFA INDUSTRY BY REGION:
(Excluding those cited as R&D-specific resources aside.)

North America:
77

Latin America:
8

EMEA:
65

APAC:
20

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.

Recently, PTC released v11.2 of FlexPLM, which is a milestone release for several reasons.

First: it offers exclusive functionality and premieres user experience enhancements, built with the input of more than 50 real end users. From a fluid, responsive, Excel-like grid interface to friendly search and filtering functionality, this release captures the essence of FlexPLM, and PTC's commitment to helping customers drive digital transformation and speed to market.

Second, v11.2 solves one of retail's biggest challenges by introducing the Samples Console – a brand-new module designed to save retailers a significant amount of time and money by providing total visibility into their sample tracking processes. Every attribute from season to colorway, specification to source and sample, can now be monitored, updated, and edited from a single, central hub. The global visibility this creates will have an immediate, positive effect on retailers' go-to-market calendars. Sample tracking alone consumes more than 140 hours per year for development and design partners, and the Samples Console can reduce that time dramatically.

Both of these innovations were designed in close collaboration with our users, which we believe reveals why FlexPLM remains retail's most widely-used PLM platform.
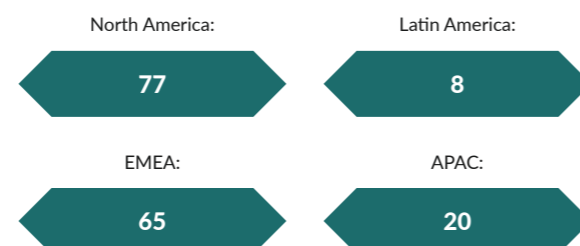
Additionally, PTC released the industry's first ever native integration with 3D tools, enabling brands to amplify the benefits of 3D design by providing a bi-directional integration with FlexPLM - giving designers access to digital assets in FlexPLM and the ability to upload digital designs from 3D to FlexPLM.
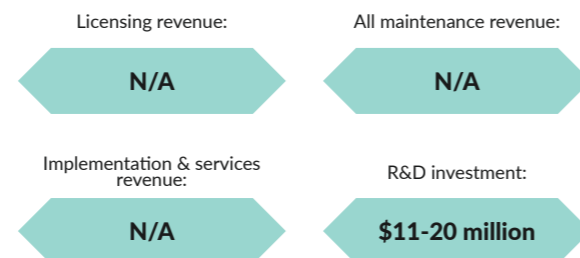
TELL US WHAT YOU BELIEVE ARE THE MOST IMPORTANT TRENDS SHAPING THE NEAR-TERM FUTURE OF THE INDUSTRY - EITHER IN TERMS OF TECHNOLOGY OR BROADER MARKET FORCES.

Clearly the COVID-19 pandemic is having a huge impact on the fashion and retail industry. Everything is being affected: from product design and development, to supply chain continuity, to the uncertain future of stores. Our retail experts are committed to helping our customers navigate this crisis, maintain business continuity, and obtain maximum value from our technologies.

From translating our marquee event, LiveWorx, into an all-digital experience, to offering our augmented reality remote collaboration platform Vuforia Chalk free of charge during the outbreak, PTC is committed to seeing the fashion and retail industry survive and thrive.

FlexPLM is also the only fashion and retail PLM solution to offer true AI and machine learning built-in. Thanks to our world-class IoT platform, PTC customers can make data-driven decisions rather than relying on intuition or guesswork.

When retail does return to normal, the need to move at speed will be more important than ever. Retailers will need to find a new competitive edge under heightened pressure to reach market quicker, produce more on-trend products, and cut costs.

Whatever the future has in store, PTC has the stability, the scale and performance, and the cutting-edge technology to offer certainty at even the most uncertain times.

PLM
CONSULTANT PROFILES

The goal of this Buyer's Guide is to provide vendors and customers alike with the information they need to make informed investments in PLM and extended PLM technologies specifically designed for the retail, footwear and apparel industry.

Although selecting the right solution represents a significant part of this decision-making process, truly modern PLM and digital transformation projects extend far beyond the software level. And the extent of the whole business change that an effective PLM project entails means that the services of experienced, independent advisors are now as sought-after and scrutinised as PLM platforms themselves.

Despite the rise of self-serve and user-configurable, cloud-based PLM, data reveals that customers of all shapes and sizes still solicit the help of third party advisors or consultants – with an especially strong correlation to business size. To put it bluntly, the work of preparing for a successful PLM project remains significant whether the solution itself is being installed onsite or off, and whether or not training and on-boarding represent the same barriers to adoption as they once did. As a result, advisors and selection and implementation partners remain key components of many brands' and retailers' PLM project strategies – whether it's conducting a thorough review of legacy technologies, planning ecosystem integrations, or conducting a detailed, scientific ROI analysis.

As a result, we have invited a select few of the world's leading apparel PLM consultancy practices and advisors to provide readers with some insight into their methods, the work they have undertaken to date, and their up-to-the-minute perspective on the industry's ongoing digital transformation. This information is intended to help readers make an informed decision about which advisory practice (if any) to work with at the different stages of their PLM project.

Depending on their history, available resources, and industry experience, an advisor or consultancy practice may offer a host of different services. Some will help clients to select a solution from a thorough knowledge of the market; some will assist their clients in implementing that solution and ensuring buy-in from the executive to the user level. Some will conduct a complete evaluation of the client's apparel-specific processes and technical environment; some will work within a scientific framework to consolidate the client's product development master data ahead of implementation. Some will do all of these things and more, while others will attempt instead to bend cross-industry boilerplate methods to fit the difficult and idiosyncratic world of apparel.

It is vital for prospective PLM customers to remember, then, that not all consultants are equal. A new apparel practice from a business that has typically focused on entirely different verticals, for example, should not be compared to a proven advisor who has catered to the retail, footwear and apparel industry for a number of years.

Those renowned international consultancy firms who have entered our sector in recent years may now be better established, but work still remains for them to build the kinds of methodologies, tools, and process frameworks that more experienced, apparel-specific consultants should boast as standard.

Conversely, larger consultancy practices can – and more than likely will – leverage international reach and a comparatively large pool of strategic resources to provide more comprehensive management services than their smaller, more specialised counterparts. This may prove to be less vital in the cloud-first market of the near future, but today it remains important for customers to make the distinction between broad strategic services and the kind of detailed knowledge that only a long-serving apparel industry specialist will have of the extended product development landscape.

Whether they are seeking remote support to make the most of a subscription solution or beginning a lengthy period of introspection and on-site implementation, customers should exercise caution when it comes to locating a truly independent and impartial advisor. Many consultancy practices obtain the bulk of their work from a single vendor in a partnership arrangement.

And although this does not necessarily imply that the business is tied exclusively to that vendor (indeed, many practices have established partnerships with more than one PLM vendor) it does increase the likelihood of that advisor preferring to work with a particular solution - particularly when unexpected growth has forced a vendor to effectively promote that partner to the status of preferred or primary implementer.

Customers, therefore, should continue to ensure that any third party they opt to work with is experienced with their chosen vendor, solution, and method of deployment – to the same degree they are with any other vendor on their roster.

Although many of the fundamental principles remain the same – customers are seeking the same industry experience, financial stability and long-term partnership potential – between selecting a PLM vendor and choosing the right advisor, there are a number of ways in which the two are distinct.

To that end, each of the consultancy practices that appears in this section was asked to provide a selection of key information: their status as vendor partners, multi-vendor services providers with a small pool of expertise, or truly vendor agnostic; and insight into their tactical and strategic strengths. We also asked each practice to enumerate the RFA PLM experts they employ on a global basis, and to name the marquee retailers and brands they have worked with to date – where that information is publicly available.

Prospective and existing customers of PLM are not, however, the only parties interested in the experience, expertise and international reach of consultancy practices and advisors. Although automated onboarding, remote training, and user configuration are now essential in the Tier 5 market segment, vendors' internal resources – for pre-sales, sales, technical demonstration, implementation and change management – continue to be stretched by potential projects, implementations, and upgrades in the upper tiers.

Needless to say, these third parties also have limitations of their own, and vendors should be as cautious as customers when it comes to satisfying themselves of the competence and availability of subject matter experts within any advisory practice - no matter how large or experienced they may seem on the surface.

Owing to the relatively small sample size and the difficulties inherent in comparing drastically different services on a like-by-like basis, this Buyer's Guide does not contain any analysis or evaluation of the consultancy practices listed in this section. Instead, we encourage prospective clients to undertake their own due diligence when working with any third party – whether they were selected directly, or nominated (either openly or covertly) by a vendor partner.

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

enVista is vendor-agnostic, enabling our seasoned team to partner with clients and align their vision and business needs with the appropriate technology solutions to solve problems throughout the supply chain – including 'product to market.'

Focusing on the client's needs first enables us to better understand which solutions fit best with their culture, budget and functionality requirements, providing us with insight into how best to deploy new or updated solutions, including PLM.

The technology is only one part of the solution: the most effective PLM solutions incorporate a combination of people, process and technology. Our experts guide clients through each step in their PLM journey – from process evaluation and remediation through technology selection to comprehensive solution deployment, including program and change management – regardless of the software solution.

List your implementations of PLM within retail, footwear and apparel to date (including the year of implementation), accompanied by the name of the solution they chose where this is public information.

enVista does not disclose client names.

Our consultants have worked on numerous PLM implementations as standalone projects or part of broader supply chain 'product to market' initiatives. Some of our recent implementations include:

Client: Billion-dollar travel-oriented global hard and soft lines retailer
Effort: PLM and B2B Assortment and Planning solution

Client: Multi-billion-dollar apparel and lingerie retailer
Effort: PLM Process Definition, Software Selection and Implementation

Client: Billion-dollar omni-channel hard and soft lines retailer
Effort: PLM Process Definition, Selection, Implementation and Upgrade (part of 7-year transformation effort)

Client: Multi-billion-dollar multi-channel apparel retailer
Effort: PLM and ERP Implementation

Client: Multi-million-dollar global luxury hard- and soft-lines retailer
Effort: PLM Process Definition, Selection, Implementation

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

enVista is unique in offering true end-to-end supply chain and retail consulting expertise – our team has direct experience with each element of the supply chain and can ensure that the entire organization and processes involved are aligned. We assist with every step of the process – from brand and product

level initial ideation through the delivery of products to customers and each process and technology effort along the way.

Our PLM experts gained their experience managing 'product to market' and 'supply chain strategy' efforts for top retailers. They continue to refine their expertise working with clients and solution providers from all industries.

Tell us (in a maximum of 150 of your own words) what you see as the two most important emerging trends for retailers and brands (particularly fashion, footwear and accessories) in the coming year?

Today's challenging environment will drive significant changes for brands and retailers over the next year.

First, brands and retailers will implement robust S&OP processes and enable contingency planning to promote swifter and more agile responses to market shifts and global events. This will result in better insulation from risk, improved inventory management, optimized freight spend, and an improved cash position.

Second, brands and retailers will adopt updated sourcing strategies to further mitigate risk. Factors informing the trend towards more dynamic sourcing include tariff volatility, global labor cost equalization, shifting demand and market patterns, and the potential for additional global supply chain disruption.

Sourcing options including on-shoring, near-shoring, and domestic micro-factories will be critical, enabling brands and retailers to shift supply closer to demand sources. Optimizing production proximity and transportation costs become critical elements of the updated strategy.

Tell us (in a maximum of 150 of your own words) what you see as the two most important emerging trends for supply chain manufacturing (particularly fashion, footwear and accessories) in the coming year?

As with retailer and brand trends, manufacturing trends focus on managing and preventing risk.

We anticipate that manufacturers will invest in and enhance their own technology solutions to align physical procurement, manufacturing and distribution processes to digital versions – including automation of many production activities. This will promote improved collaboration with upstream and downstream partners as well as providing better support for dynamic sourcing models being pursued by brands and retailers as noted above. Supply chain transparency and orchestration enables better risk analysis to better evaluate and execute responses to market events.

Additionally, manufacturers will consider re-evaluating the customer model. As brands and retailers struggle over the next 18+ months, suppliers will be left with excess capacity. To survive, manufacturers need to diversify their customer base through the solicitation of new retailer partners and the development of direct-to-customer channels which may be in direct competition with brands and retailers.

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

We have six dedicated PLM domain experts as well as hundreds of additional supply chain and retail experts worldwide.

North America:	Latin America:
6	N/A

EMEA:	APAC:
N/A	N/A

PLM and Beyond
Optimize Your End-to-End Supply Chain Strategy

Accelerate product movement throughout your supply chain with enVista's strategic, end-to-end product lifecycle optimization services.

At every phase of the product lifecycle, enVista's retail and supply chain experts provide unparalleled consulting services to optimize entire operations from product and supply chain strategy through solution implementation and ongoing operations.

![enVista logo]

Let's Have a Conversation.™

info@envistacorp.com | 877-684-7700 | envistacorp.com

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

Kalypso provides objective services designed to transform and optimize the end-to-end product development lifecycle for retail, footwear and apparel (RFA) clients. Our PLM services include assessments, strategy, process, organization alignment, requirements definition, selection, implementation planning and execution, managed services, and hosting. These services can be delivered independently or with a strategic PLM solution partner. We work with any PLM vendor that best suits our clients' needs.

List your implementations of PLM within retail, footwear and apparel to date (including the year of implementation), accompanied by the name of the solution they chose where this is public information.

Kalypso does not publicly share client names. Our team has conducted over 120 PLM implementations across numerous industries, 30% with global companies over $5B in revenue. In RFA, we have helped many clients tackle core PLM challenges as well as integrate new digital technologies with PLM. Examples include:

- PLM transformation/implementation for a $13B retailer uniting 50+ brands and 30+ product categories
- PLM evaluation, selection and implementation for $3.5B apparel retailer
- Accelerated PLM implementation for a $500M food manufacturer
- Global PLM and digital product creation design, development and implementation uniting 50+ brands for a toy manufacturer

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

We focus on the product side of the RFA business, working with clients to discover, create, make and sell better products. This exclusive focus on innovation in the digital value chain allows us to help brands transform their end-to-end product development capabilities by leveraging four sets of technologies:

1. Foundational product technology – Deploying core applications to facilitate product development and to store/share critical data [e.g. PLM, product information management (PIM) and digital asset management (DAM)]

2. Digital product creation (DPC) – Leveraging digital assets and tools to create, make and sell product better, faster and cheaper (e.g. 3D design tools, rendering and visualization, AR/VR, body scanning)

3. Advanced analytics – Harvesting insights to make better innovation, design, development and sourcing decisions (e.g.

machine learning/predictive analytics, voice of the customer analytics, visualization)

4. Smart connected supply chain – Putting products on the grid to optimize and track their flow from source to consumer (e.g. IoT, RFID, beacons, blockchain)

To accelerate ROI and time-to-benefit, we employ industry-specific methodologies, delivery accelerators, leading practice models and tools.

Tell us (in a maximum of 150 of your own words) what you see as the two most important emerging trends for retailers and brands (particularly fashion, footwear and accessories) in the coming year?

The traditional product development model opens companies up to risk while limiting agility and innovation. The need for change is even more obvious and urgent as a result of the global coronavirus crisis. As the RFA industry moves back to business as usual, executives must prioritize and fund a fundamentally different model for product development – **digital product creation (DPC)**. Powered by 3D and advanced analytics and artificial intelligence (AI) tools, DPC enables dramatically shorter digital product development cycles, faster speed to market, better fit modelling, improved marketing assets, and better products from more iterations.

The role of **advanced analytics and AI** across the development cycle will continue to expand and drive informed, consumer-tested forecasts and associated order quantities. AI can also be integrated into design tools and processes to generate designs, specs and BOMs for interpretation and approval by designers and developers, radically changing the retail business model.
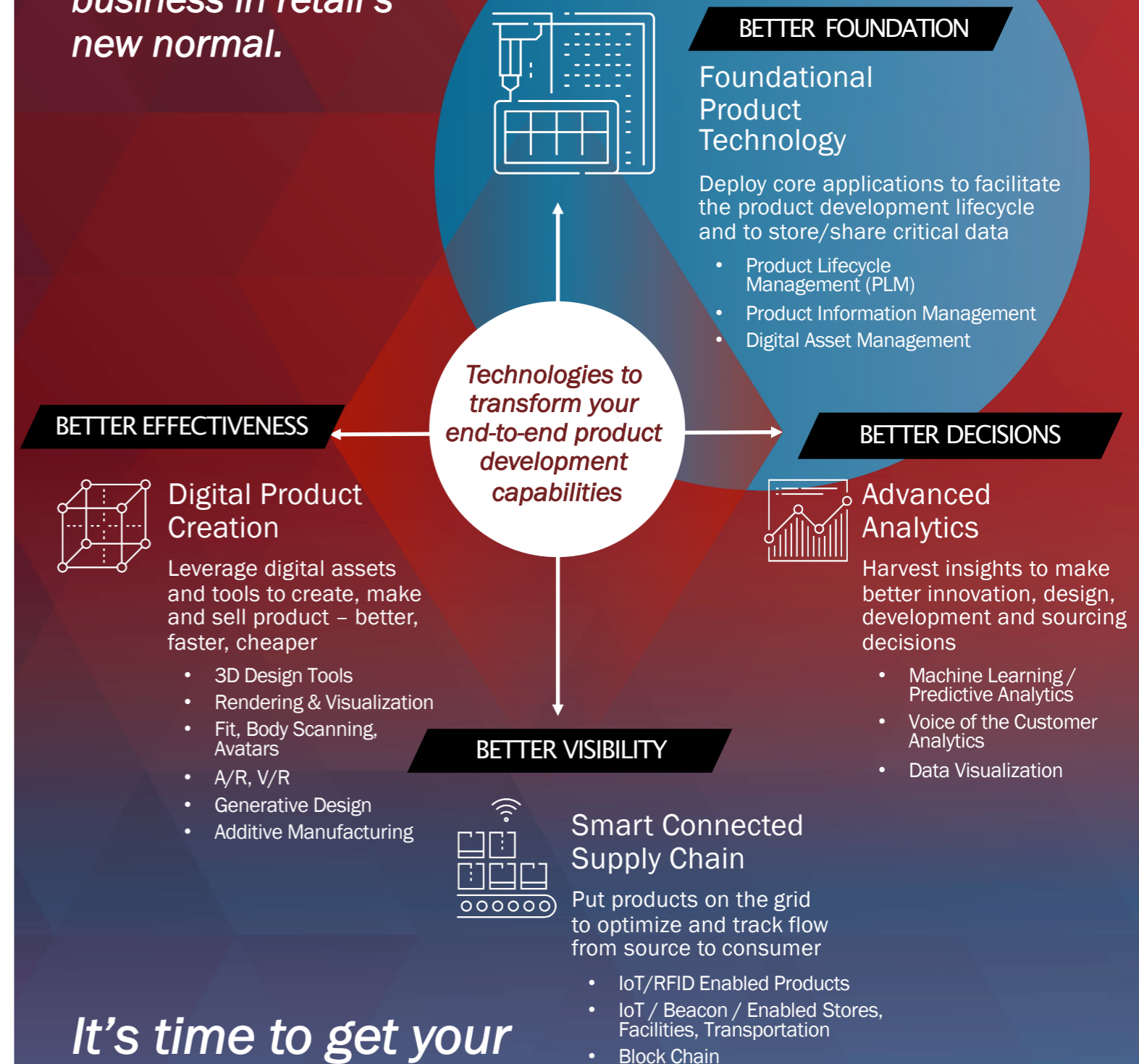
Tell us (in a maximum of 150 of your own words) what you see as the two most important emerging trends for supply chain manufacturing (particularly fashion, footwear and accessories) in the coming year?

The need for **transparent, smart connected supply chains** has also never been more urgent due to the rising labor and related costs in China, increased tariffs and duties emerging from recent trade wars, political unrest in Hong Kong, and the enormous global impact of the coronavirus crisis.

Smart connected supply chains open up new opportunities, unlock additional value, reduce time to market and address the accelerated need to improve **sustainability**. While environmental impact is dictated 80% by design (which can be addressed with DPC), the digitization of the supply chain enables agile sourcing on-shore, near-shore and off-shore based on differentiated product development tracks; smaller production runs manufactured closer to the point of consumption; and improved manufacturing automation. This helps to eliminate waste, logistic emissions and carbon footprint as a result.

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

North America: 240+, including resources based at our Americas Innovation Center located in Monterrey, Mexico, and at our Bridgetown Innovation Studio, located in Portland, Oregon. **Latin America:** We serve Latin America from our US/Mexico geographical centers. **EMEA (Europe, Middle East, Africa):** 30+, including resources based in our European Innovation Center located in Bucharest, Romania. **APAC (Asia Pacific):** Less than 10. Our resources in APAC primarily interface with the Asia-based sourcing operations of our clients from North America and EMEA.

North America:	Latin America:
240+	**N/A**
EMEA:	APAC:
30+	**>10**

Change is no longer a choice.

PLM is critical to transforming your business in retail's new normal.

BETTER FOUNDATION

Foundational Product Technology

Deploy core applications to facilitate the product development lifecycle and to store/share critical data

- Product Lifecycle Management (PLM)
- Product Information Management
- Digital Asset Management

Technologies to transform your end-to-end product development capabilities

BETTER EFFECTIVENESS

BETTER DECISIONS

Digital Product Creation

Leverage digital assets and tools to create, make and sell product – better, faster, cheaper

- 3D Design Tools
- Rendering & Visualization
- Fit, Body Scanning, Avatars
- A/R, V/R
- Generative Design
- Additive Manufacturing

Advanced Analytics

Harvest insights to make better innovation, design, development and sourcing decisions

- Machine Learning / Predictive Analytics
- Voice of the Customer Analytics
- Data Visualization

BETTER VISIBILITY

Smart Connected Supply Chain

Put products on the grid to optimize and track flow from source to consumer

- IoT/RFID Enabled Products
- IoT / Beacon / Enabled Stores, Facilities, Transportation
- Block Chain

It's time to get your house in order.

kalypso.com/**plm**

KALYPSO

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

Infor Fashion PLM.

Infor Cloudsuite PLM for Fashion.

List your implementations of PLM within retail, footwear and apparel to date (including the year of implementation), accompanied by the name of the solution they chose where this is public information.

Ptex Solutions have been involved in 60+ Infor Fashion PLM (earlier known as Freeborders PLM and Lawson Fashion PLM) implementations. Below are the names of the recent customers where Ptex has implemented PLM:

- Dynamic Designs, USA
- Fred Perry, UK
- Fristads Kansas, Sweden
- Future Retail, India
- Graniti Fiandre, Italy
- Horseware, Ireland
- LC Waikiki, Turkey
- LTP Limited, Lithuania
- Outpac Designs, Hong Kong
- Rocky Brands, USA
- Salling Group, Denmark
- The Apparel Group, USA
- Vida Shoes, USA
- W.L. Gore, Germany

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

Ptex Solutions has successfully implemented PLM for companies in a number of countries in North America, Europe, Asia and Australasia, enabling retail, apparel and footwear to deliver superior business results by harnessing the power of technology.

The team reflects a fine balance between fashion and technology expertise. Experienced, efficient, effective, engaging and thoroughly professional, Ptex's team embodies the customer-focused approach that differentiates the company. Business consultants have either graduated from

fashion institutes or they have worked in the industry prior to joining the company. With more than 15 years of implementation experience, the consultants are expert solution providers who have the business know-how to be able to anticipate common problems, proactively map typical business requirements and deliver solutions.

Tell us (in a maximum of 150 of your own words) what you see as the two most important emerging trends for retailers and brands (particularly fashion, footwear and accessories) in the coming year?

COVID-19 represents companies with a chance to reset and completely reshape the industry's value chain. The aftermath is certainly going to lead to recession, compelling companies to revisit their operating models. Companies will be forced to make quick, bold decisions to ensure they continue to exist. Seasonal calendars will have to be reviewed and streamlined. Every activity in various milestones needs to be examined.

Companies will make the obvious changes like cutting costs, adjusting product assortments, cutting back on production and finding more innovative ways to reduce stock and inventory. They will relook if sampling, lab dips, strike off can be reduced and if approvals can be provided with a lower number of submits.

Companies that have implemented modern PLM, ERP, Retail Planning, 3D Virtualisation software will be of the best to handle the current situation and handle unprecedented transformation in the fashion industry.

Tell us (in a maximum of 150 of your own words) what you see as the two most important emerging trends for supply chain manufacturing (particularly fashion, footwear and accessories) in the coming year?

Once the dust settles on the COVID-19 crisis, the period of recovery will witness dramatic reduction in spending by consumers across the world. This will have not only affected the sales of fashion brands and retailers, it will also have a huge impact on the entire supply chain. There will be irreparable damages to the supply chain to manufacturers, fabric mills, trim suppliers, packaging suppliers, logistics and many more.

Navigating this uncertainty will not be easy; the entire supply chain will have to collaborate with each other and find ways to share the burden. Companies will have to start with the consumer and work their way back in a controlled way through the supply chain. Those relying on longer lead times and inflexible supply chains will be very vulnerable. Those who will be able to modify the supply chain and manufacturing processes, make them lean and reduce costs will survive the economic tsunami.

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

We have a team of 40 Business and Technical Consultants. All of them are based in India. However, they have travelled to many countries for Implementation. This includes US, UK, Europe, UAE, China, Singapore, Hong Kong and New Zealand.

North America:	Latin America:
N/A	N/A

EMEA:	APAC:
N/A	40

TECHNOLOGY: REDEFINED.
NOT REINVENTED.

Global. Knowledgeable. Experienced. Dedicated. Innovative.

Ptex Solutions' consulting services enable established and emerging companies to leverage technology to drive performance.

60 PROJECTS
16 COUNTRIES
16 YEARS

RETAIL ✚

APPAREL ✚

FOOTWEAR ✚

ACCESSORIES ✚

SMALL ENOUGH TO BE RESPONSIVE.
LARGE ENOUGH TO BE RESPONSIBLE.

PLM MARKET ANALYSIS

2019/20

The PLM market for retail, footwear, and apparel is a mature one. In fact, it has been a mature market for many years – a trend that a decade's worth of market research and analysis exclusive to WhichPLM has charted. PLM has evolved from being a costly, fully-custom solution that was accessible to just the largest enterprises, to being as close to a turnkey service as it is ever likely to get.

This year's data does not contain many revelations. Over the last few years we have watched as the RFA PLM market shifted from being concentrated around sales to mid-size businesses and upwards, to being dominated – in volume terms – by small businesses with turnovers below $100 million per year.

In 2019/20, sales to small-to-medium companies accounted for close to 80% of the entire PLM market, leaving the WhichPLM team in little doubt that PLM has reached a level of accessibility and affordability that makes it both indispensable for brands and retailers of any size, and, it must be said, not all that dynamic from a sales point of view.

As true multi-tenant platforms and public cloud architectures have emerged, and dragged service, maintenance, and implementation costs down with them, it has become increasingly clear that this approach represents the future of PLM for the vast majority of the market. All but 20% of PLM sales this year were – more than likely – made using this model or other variations very much like it.

This is not to say that the PLM market for retail, footwear, and apparel will remain static in other ways, though. Geographical variations, cost competition, and new developments – there will arguably be more to say about what PLM can do and how

it should be used than ever before, which is why WhichPLM is committed to producing exclusive content each and every week on our website that is laser-focused on each of the core PLM modules and how they can be used to create value in both current and future applications.

We expect the rate of innovation to skyrocket now that PLM is in the hands of everyone. We just do not expect there to be much to say – after this year – about how it is being sold and deployed. Because while 75% of the market revenue might be concentrated at the high end (in sales to Tier 0 and Tier 1 companies) the bulk of this comes from service costs rather than technical advancement.

The **market analysis** and **executive summaries** that span the next few pages will therefore be the last of their kind that WhichPLM produces, as we re-examine the kind of insight that buyers of PLM in 2021 and beyond will need. To this end, we expect to focus next year's market analysis less on market penetration and adoption, and more on the flexibility and capabilities of the key solutions that make up the needs of a modern PLM market.

Until then, though, we begin this year's analysis with an introduction to how we are able to obtain this data, how we analyse it, and why, for close to a decade, the WhichPLM name has been synonymous with a level of insight, understanding, and objectivity that you will not find anywhere else.

Our approach

We pioneered our second-generation approach to analysing the RFA PLM market in 2013, building on a slightly different

but no less exhaustive end user survey which ran from 2010. Now, in its tenth and final year, we believe this approach remains reliable; we collect clear information, refine it according to clear criteria, apply transparent models to the raw data, and present our findings in a consistent, detailed but readable format.

Put into practice, this well-established approach allows us to paint what we believe to be the most accurate, unbiased snapshot of the RFA PLM market each financial year. Over the coming pages we will set out the number, type, and geographical spread of RFA PLM sales in the period 1st April 2019 to 31st March 2020, model the value of these sales by customer size, and provide our analysis as to how and why the market has evolved in the last twelve months.

The information used to conduct this analysis comes from two sources: sales data provided by all leading PLM vendors exclusively to WhichPLM, under strict non-disclosure agreements; and our own insight into and understanding of the global market.

As always, WhichPLM is grateful to the vendors that voluntarily provided this information (most of whom can be found in the PLM Vendor Listings that precede this section of the Buyer's Guide) and to all technology vendors that share our desire to build a unique, transparent analysis of the market every year.

On the whole we remain impressed that so many companies – especially private businesses who are under no obligation to
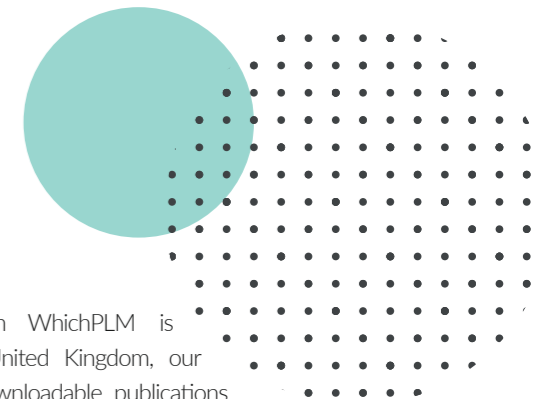
part with their sales and financial information – remain committed to ensuring that the market operates under the eye of unbiased analysts who are equipped with accurate information.

Analysing the upper tiers of the market, where sales are highly complex and can take years of planning, integration, and process re-engineering, continues to prove a difficult prospect. The line between a new sale and an expansion is becoming blurrier over time, since brands and retailers of this scale often decide to either expand their use of PLM in huge tranches – or occasionally they opt to revisit the market and either start a new project with the incumbent vendor, or move on to a new one.

Taking these complexities carefully into account, we have decided that in order to maintain the consistency of our modelling, we will exclude a number of T0 and T1 sales from this year's Market Analysis because they fall into a grey area between new sale and expansion. This is a difficult subject to find clarity on; in some cases it could be strongly argued that a sale should properly have been classified as an upgrade, while in others a customer with a legacy version of a PLM platform has chosen to leap several versions forward with a new agreement, which could be classified as a new sale.

For the sake of consistency, and in the interests of fairness to all vendors, we have opted to remove a small number of these kinds of sales from the totals you will find in this Analysis. This change has not materially altered the overall trends seen in this analysis, but it has had the effect of making them more pronounced. Moreover, this process revealed just how competitive the upper Tiers of the RFA PLM market are, and how high the potential is for disruption. We expect to see large-scale change at this level of the fashion industry as new technologies, streamline cloud platforms, and current events usher in new business models.

For comparison purposes, the complete back catalogue of WhichPLM publications (including our 2019 Buyer's Guide, 2018 Buyer's Guide, and the Annual Editions that preceded them) can be accessed free of charge from our website. To ensure that reference can be made between publications, we have adhered to a very similar reporting structure across all of our publications. Should you wish to chart any changes to the RFA PLM market that we have not made explicit here, please feel free to obtain copies of our previous research – or contact us via our website if you require something more bespoke.

Finally, although WhichPLM is based in the United Kingdom, our website and downloadable publications all adopt a truly international perspective and are read by vendors, customers, and analysts worldwide. For ease of comparison and in recognition of this international reach, we continue to use the US Dollar (USD) as a common currency.

Our qualifications

This Buyer's Guide and the other downloadable publications that preceded it form only part of WhichPLM's continuous industry analysis, speaking engagements, and commentary. Across all these different facets of our business, WhichPLM has come to occupy a uniquely privileged position that allows us to speak from a perspective no other RFA PLM analyst of industry publication can:

- WhichPLM has been an independent source of information and advice to prospective and existing customers of RFA PLM since 2008, and our audience has grown in absolute terms each year since the company was established.

- Our editorial and executive board has deep, international industry knowledge and expertise – born out of hands-on experience of the design, development, selection, and implementation of apparel-specific PLM solutions and a long list of other digital solutions.

- WhichPLM has benchmarked many of the market's leading solutions and vendors, and we have made all of these evaluations freely available through our website. Readers looking for a detailed look at the capabilities and business potential of a possible PLM partner will gain a lot from reading these evaluations.

- Our team has worked alongside all the market's primary vendors in a range of different capacities, but these relationships do not colour our analysis; our publications and services remain entirely unbiased.

- Our publications are routinely cited as vital reading material for both PLM implementations and large-scale digital transformation initiatives by the world's biggest brands and retailers.

WHAT'S IN A SALE?

The analysis contained in these pages has its roots in one key metric: the number, size, and location of new-name RFA PLM sales achieved by the industry as a whole in the 2019/20 financial year. On top of this information, we layer our own insights, and apply a clear mathematical model to derive what we believe to be an accurate monetary size for the market in the same period.

It's important to note, though, that this is a policy we have adopted to date out of necessity, because it has been – and remains – the only method of measurement that every RFA PLM vendor will consistently abide by.

Although we have previously considered applying a revenue-based analysis structure as either a first or second layer, a group comprised of around one-third public companies and two-thirds private operations is unlikely to ever provide the level of financial insight we would require to perform these calculations fairly and equitably, making it impractical – especially in light of the questionable figures we received in certain cases this year.

In reality, this means that a lot of potential market value from upgrades and expansions is not factored into our conclusions – which would reflect a much larger overall value than they do today were those sources of revenue taken into account.

RFA meets CPG

Until our 2018 Buyer's Guide, all our market analysis had been strictly confined to the retail, footwear, and apparel market segment – i.e. brands, retailers, and manufacturers who used their chosen PLM solution specifically to produce garments, footwear, accessories, jewellery, and other fashion items, as well as some soft home furnishings.

Two years ago, however, we updated our inclusion criteria to reflect the fact that several vendors had begun to adapt their RFA-focused PLM solutions to also cater to businesses in the so-called "Consumer Packaged Goods" or CPG category. With no fixed definition, though, what constitutes a consumer packaged good varies from vendor to vendor, which complicated our decision to expand our definition of a new sale.

To help bring some clarity to this cross-vertical expansion, and to make sure that our analysis remains as accurate as possible, we introduced a category of customer that we dubbed "CPG Crossover" in 2018. This publication carries that idea through for the second year running, and throughout this analysis we will use "new name sales" to refer to both PLM customers that would typically have fallen under the RFA definition, and customers whose business models incorporate what we saw as essential criteria for CPG Crossover.

Where they feature some element of soft materials, or share a similar product-driven workflow to the one widely used in the RFA industry, we now accept the following company types as valid for inclusion in this analysis – provided the PLM vendor who is claiming them as a customer can demonstrate that they are using the solution for what we consider to be valid purposes.

By way of example, since we introduced the CPG Crossover category in the financial year 2017/18, we have allowed retailers of:

- Toys & games
- Home and office furniture
- Outdoor furniture
- Eyewear
- Watches

And other non-RFA products to be included in our overall market sizing and analysis.

On the other hand, we have excluded the following and more:

- Automotive tyres and accessories
- Food and beverages
- Pet care
- White goods
- Beauty and cosmetics

Since these did not include any elements of seasonality or soft materials, and would therefore have very little crossover with traditional RFA PLM design, development, or sourcing practices.

Slightly more CPG Crossover companies appeared in vendors' lists this year compared to 2018/19, but their inclusion has had a minor impact on the overall composition of the market. We should note, however, that this is likely to be a result of the growth in small business sales, since CPG brands and retailers tend to be larger businesses.

Customer Tiers

Since we first began analysing the RFA PLM market, we have taken great care to segment each year's new-name PLM sales into Tiers based on the size and turnover of their business. This process is fundamental to our analysis, since the monetary value of a PLM sale to a large, multinational organisation (across software licensing, implementation services and maintenance) will be much larger than a sale to a single-territory, boutique brand – even though both of these would appear equivalent were we to only look at the quantity of sales. As a result, please take a moment to read this section to understand how we segment PLM customers, and how this segmentation factors into our market analysis and sizing estimations.

For clarity's sake, our customer Tiers for retailers and brands are delineated as follows:

Tier 0
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
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
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
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
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
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.

Customer Locations

When a new-name PLM sale occurs, our analysts assign it a location at the country level, as well as bundling it into the appropriate sales and business region: the Americas, EMEA (Europe, the Middle East and Africa) and Asia-Pacific.

This assignment is done at the brand headquarters level, which is important in two different scenarios.

Where a retailer or brand operates multiple offices, all of which are now potentially using the chosen PLM solution, we assign the sale to the headquarters on the company's masthead unless we're specifically told to otherwise, or unless a regional subsidiary is actually the company named in the PLM agreement.

Where a parent company or group operates multiple brands, we will assign the sale to the appropriate region for the brand, not the parent. Tied to this, although some luxury groups have historically mandated that every house that operates under their umbrella adopt the same PLM, ERP, and other enterprise solutions, this practice appears to have run its course, and group-owned brands today have more latitude to approach the market and make decisions on their own terms. Nevertheless, if a PLM vendor has claimed a group as a customer, we always insist on drilling down to the brand level and assigning the sale to the location of the brand's headquarters.

THE RFA PLM MARKET IN 2019/20

This section of our market analysis presents exclusive sales data alongside our expert interpretation of that data, creating a blended picture of how, where, and why PLM is being sold in the RFA industry in 2019/20.

Unsurprisingly, the ongoing shift in new sales from enterprise to small business has had a significant impact on the overall size and shape of the market. While our analysis reveals a relatively minor shortfall in overall sales numbers (just 5%) the change in composition accounts for a 25% decrease in the size of the market in revenue terms – a loss of $30 million in value when licensing, services, and maintenance are blended.

Although it would be tempting to take a negative outlook on the future of PLM, the reality is more nuanced and more optimistic. Of that $30 million in lost revenue, $25.5 million comes from a decline in service income and license sales at Tier 0, across just four fewer sales to that tier than we saw in 2018/19. And clearly an inverse of this situation could just as easily have occurred, with one or two additional Tier 0 sales.

This was, in WhichPLM's opinion, an inevitability. Rather than representing any lack of confidence in PLM itself, the sharp decline in service and implementation revenues at the upper end of the market reveals just how far that model has been propped up by inflated consultancy day rates for the last decade.

This, to be blunt, is precisely the model that the current PLM market is rebelling against. So while the market as a whole contracted, in revenue terms, by $30 million, 66% of that lost revenue would have been made through service costs charged to just four huge, multinational companies. As a counterpoint, sales to all Tiers 4 and 5 customers combined

(211 new businesses) generated service revenues of just $2.7 million in 2019/20.

Or to put it even more bluntly, a small number of large companies spend 1,600% more on implementation services than every small business combined. We see this stark split as PLM's inflection point for two reasons.

First, consider how portable each model is from one extreme to the other. No small business can afford huge consulting bills, but a large business can in many cases get by with using the same low-cost, subscription-based PLM platform as a boutique brand. One of these models has a definite shelf life – and it is not the one that has, this year, captured 80% of all new name sales.

As the table on the adjacent page sets out, the market is only going one way. In the three years since we created our fifth Tier, it has almost doubled its market share – primarily by cannibalising the tier immediately above it, but also by altering what the market can expect from PLM as an affordable, accessible utility.

Second, the appetite for paying exorbitant service costs is diminishing even at the upper tiers of the market – and not just in RFA PLM. Larger businesses can have perfectly valid reasons to prefer an on-premise or private cloud deployment of their software over a multi-tenant, public cloud platform, but this does not mean that these companies will remain willing to pay vendor and third-party implementations teams large amounts of money to customise those solutions any longer. On balance, PLM is configurable, easy to use, and relatively straightforward to integrate to other enterprise

Customer Tier	Percentage of sales 2018/19	Percentage of sales 2019/20
Tier 0	4%	3%
Tier 1	8%	7%
Tier 2	9%	5%
Tier 3	9%	8%
Tier 4	16%	14%
Tier 5	54%	63%

systems. And that remains true whether the company buying it is large or small.

In past Buyer's Guides, we have referred to Gartner's enterprise software growth statistics as a good yardstick for measuring the performance of PLM for retail, footwear, and apparel in comparison to other enterprise software markets. This year, we believe a far more useful statistic to be Gartner's predictions for public cloud revenue - and more specifically for cloud application services (SaaS). Already pegged at being worth $116 billion worldwide this year (close to 44% of all cloud revenues), that sector is expected to increase to $150 billion in 2022.

In this sense, the RFA PLM industry is aligned with the march of technology in other enterprise software industries. And like those other industries, the rise of cloud deployment and subscription pricing is very likely to lead to a continued drop in service and implementation revenues and a recontextualisation of what the industry can be said to be "worth".

This is clearly a significant change in the market, and further to the rationale outlined in the introduction to this analysis, it further explains WhichPLM's desire to change the way we approach future Buyer's Guides.

As with any such large-scale shift, there are PLM vendors who have already embraced this change, and those that have dug

in their heels. Needless to say, shifting from being an enterprise-oriented technology vendor to being one that can (either simultaneously or instead) appeal to the volume market is not going to be an easy or pleasant process. Over time, professional services departments are going to be trimmed or let go entirely, and technology vendors will be forced to wrestle with the idea of what it means to offer PLM as a widely-accessible service.

A note on COVID-19

The analysis contained in these pages reflects the RFA PLM market as it stood at the close of March 2020 – just a month into the serious outbreak of the new coronavirus in Europe and the UK, where WhichPLM is based.

As a result, these statistics do not reflect what is likely to be an industry-wide shortfall in software and technology spending in 2020/21. We do not expect, however, that the fundamental trends we have identified here will change as a result of the pandemic. In fact, the adoption of low-cost cloud-native software is, if anything, going to accelerate further, while extensive in-person service projects will appear even less attractive than they already do.

Sales concentration by region - 2019/20

United States	35.0%	Greece	2.0%	Portugal	0.5%
United Kingdom	10.0%	The Netherlands	2.0%	Singapore	0.5%
China	8.0%	Turkey	2.0%	South Africa	0.5%
Italy	7.0%	Hong Kong	1.0%	South Korea	0.5%
Germany	6.0%	Russia	1.0%	Spain	0.5%
France	5.0%	Belgium	0.5%	Sri Lanka	0.5%
India	5.0%	Brazil	0.5%	Switzerland	0.5%
Sweden	4.0%	Costa Rica	0.5%	Taiwan	0.5%
Canada	3.0%	Japan	0.5%		
Bangladesh	2.0%	Norway	0.5%		

Geographical breakdown of sales

The PLM market for retail, footwear, and apparel is a truly international one. In the fiscal year 2019/20, our analysis reveals 29 countries where PLM was sold to at least one retail, brand, or manufacturing customer.

Of these, 7 are what we would define as large markets – with shares of the total sales for the year of 5% and upwards. Those 7 markets are in Asia, Europe, and the USA, although the Nordic countries, if combined, come close to qualifying as the 8th large market.

At the macro level, the distribution of these sales has been consistent year on year: North and South America (almost exclusively the USA) routinely have the greatest market share, with Europe, the Middle East and Africa following close behind, and Asia Pacific has remained the smallest geographical market despite strong showings from China and India.

There is little reason to believe that these top-level trends will change immediately, although the broader availability of multi-tenant, globally-served cloud PLM is likely to be a boon

for brands and retailers in Asian markets where enterprise vendors have not typically focused their attention.

At the micro level, however, the market shifts more regularly and more perceptibly, and country-by-country competition can still result in the emergence of new 'hot zones' – as well as their disappearance once the immediate deals have been won. Listed in the following pages are several regions where we believe sufficient change occurred in the 2019/20 financial year to warrant additional analysis, which appears after the per-country statistics set out in the table overleaf.

Region	2017/18	2018/19	2019/20
EMEA	34%	34%	43%
Asia	22%	20%	18%
Americas	44%	46%	39%

Share of total RFA PLM sales by country (%)

Region	2017/18	2018/19	2019/20	Region	2017/18	2018/19	2019/20
Australia	0.5%	1.0%	0.0%	Norway	1.5%	1.5%	0.5%
Austria	0.0%	0.5%	0.0%	Pakistan	0.5%	0.0%	0.0%
Bangladesh	3.5%	1.5%	2.0%	Philippines	0.0%	0.5%	0.0%
Belgium	1.0%	0.5%	0.5%	Portugal	0.5%	0.0%	0.5%
Brazil	1.0%	0.5%	0.5%	Russia	1.0%	0.0%	1.0%
Bulgaria	0.0%	0.5%	0.0%	Singapore	0.0%	0.0%	0.5%
Canada	5.5%	7.0%	3.0%	South Africa	0.5%	0.5%	0.5%
Chile	0.0%	0.5%	0.0%	South Korea	0.0%	0.5%	0.5%
China	6.0%	8.0%	8.0%	Spain	1.0%	1.0%	0.5%
Costa Rica	0.0%	0.0%	0.5%	Sri Lanka	0.5%	0.5%	0.5%
Denmark	0.5%	0.0%	0.0%	Sweden	3.0%	2.5%	4.0%
France	3.5%	3.5%	5.0%	Switzerland	0.0%	0.0%	0.5%
Germany	5.0%	4.0%	6.0%	Taiwan	0.0%	0.0%	0.5%
Greece	0.0%	0.0%	2.0%	Thailand	0.0%	0.5%	0.0%
Hong Kong	2.5%	1.5%	1.0%	The Netherlands	2.5%	2.5%	2.0%
India	7.0%	5.0%	5.0%	Trinidad & Tobago	0.0%	0.5%	0.0%
Italy	3.0%	9.0%	7.0%	Turkey	2.0%	1.5%	2.0%
Japan	1.5%	0.5%	0.5%	UK	9.0%	5.5%	10.0%
Macedonia	0.0%	0.5%	0.0%	USA	35.0%	37.0%	35.0%
Malta	0.0%	0.5%	0.0%	Vietnam	0.5%	0.0%	0.0%
Mexico	2.0%	1.0%	0.5%				

United States & Canada

Unquestionably the leading market for RFA PLM for many years, the USA is also – not coincidentally – home to many of the industry's biggest technology vendors. In the 2019/20 fiscal year, 35% of all new-name sales occurred in the USA. This comprises just shy of 100 new customers, which serves as a strong indication of both the sheer size of the American market and also brands' and retailers' continued appetite for technology.

North of the border, however, PLM sales have fallen sharply. In 2018/19 Canadian customers accounted for 7% of all PLM sales – placing it fourth on our list in terms of overall sales volume - whereas this year that figure has fallen to 3%. It is difficult to point to any single cause for this, especially considering that Canada's retail market was – prior to the pandemic at least – buoyant, with 1.6% year-on-year growth between 2018 and 2019.

United Kingdom

As difficult as it feels to cast our minds back to last year, at the time we produced our 2018/19 market analysis the looming spectre of Brexit was considered the primary threat to retail PLM sales in WhichPLM's home country – which had fallen by almost 4% year on year.

Ironically, that uncertainty appears to have manifested itself in considerable market growth. In the 2019/20 fiscal year, the UK has accounted for 10% of all RFA PLM sales. This was not the response we had expected, but with the benefit of hindsight it was perhaps inevitable: nationwide uncertainty, rather than freezing spending on technology, had the opposite effect, as retailers pulled together to get their digital houses in order.

China & Hong Kong

Convincingly the world's third-largest market for RFA PLM when combined, Hong Kong and China have remained the most logical targets for technology vendors from the Western hemisphere who wish to reach beyond their domestic brand and retail customers.

Due to the country's homegrown manufacturing expertise and its technologically-advanced consumption market (leading the world in social commerce), China is a prime location for PLM adoption. Most manufacturing facilities and coordinators are already familiar with using PLM to collaborate with their overseas brand clients, making the next step to using it to power their own brands an easy one.

The past few years have also seen a real groundswell in technical innovation throughout East and Southeast Asia, with both disruptive startups and well-established technology vendors catering to brand and retail customers who do not have the same burden of legacy technologies and processes that many brands in the USA and Europe do.

Sweden

In our 2019 Buyer's Guide we wrote that: "We do not believe that the Nordic Bloc is saturated, and the vendors that have committed resources to that market are likely to see breakthroughs in different market tiers over the coming years."

The 2019/20 data has revealed this to have been an accurate prediction in some respects, but not yet in others: Sweden's share of sales has reached its highest point in the last three years, but sales in Denmark and Norway have all but vanished.

Based on this information, it seems likely that the Nordic fashion and retail market is at its most buoyant in Sweden, and that trend appears likely to continue as the country pursues a very different strategy for managing the COVID-19 situation – one that has seen most retail outlets remain open while Europe and the USA entered lockdown. Practically speaking, however long the lockdowns last elsewhere, the increased revenues Swedish retailers have been able to make versus their counterparts overseas are likely to lead to more investment in the future.

Italy & France

Two very different countries in other respects, France and Italy share the honour of being the seats of luxury and haute couture. And according to our 2019/20 data, both countries are also undergoing a resurgence of interest in PLM, with a combined market share of 12%.

This may not seem remarkable at first glance, but Italy in particular has undergone something of a rollercoaster in terms of its investment in technology for fashion and retail. Once home to the earliest adopters, the country fell to extremely low percentage shares several years ago, before returning in force in 2018/19 and now in 2019/20.

We are hesitant to draw a direct line of correlation between the two markets, but there would appear to be some link between the explosion of luxury consumption in Asia (among so-called High Net Worth Individuals or HNWIs) and renewed interest and investment in technology in the countries where those luxury brands originate.

India

Equal to France in its share of the RFA PLM market in 2019/20, India is another country – like China – without the weight of legacy technologies and processes. As the country's domestic retail market has grown, so too has the ambition of factories who have only manufactured for overseas brands to launch new private labels and collections for both in-country and international buyers.

For these production factories and now brand owners, digital methods are the norm. Combined with the accessibility and affordability of modern, cloud-native PLM, we expect adoption of PLM and other digital transformation technologies to continue for the foreseeable future.

MARKET SIZING

To understand the full size and scope of the RFA PLM market in the 2019/20 financial year, we now take the customer numbers, sizes, and locations set out on previous pages, and apply a proprietary (but transparent) cost calculation model to synthesise the overall monetary size of the market. Before we do this, though, we have made some adjustments to the underlying data to take account of the following factors:

■ Minor changes in the list of premier vendors that qualified for inclusion in this report, or who opted not to be included.

■ The aforementioned exclusion of a small number of sales at the upper end of the market that fell into a grey area between new sale and expansion.

As in previous years, these minor adjustments were made prior to any modelling, and are therefore factored into the following calculations as well as all other insights contained in this analysis.

The following table sets out the method by which our analysis team have calculated the total size of the RFA PLM Market in 2019/20. Please note that, as in previous years, per user license costs have been calculated based on a traditional, perpetual licensing model for Tiers 0-3, and then as annualised subscriptions in Tiers 4 and 5. And by the same logic, the annualised subscription costs used to model the size of Tiers 4 and 5 also incorporate maintenance fees, which is why those entries in the table have been purposefully left blank.

	Tier 0 (8 sales)	Tier 1 (20 sales)	Tier 2 (15 sales)	Tier 3 (23 sales)	Tier 4 (38 sales)	Tier 5 (173 sales)
Average seats per customer:	2,000 (comprised of 750 internal and 1,250 external)	600 (comprised of 200 internal and 400 external)	300 (comprised of 100 internal and 200 external)	75 (comprised of 50 internal and 25 external)	30 (comprised of 20 internal and 10 external)	15 (comprised of 5 internal and 10 external)
Total seats this year:	16,000 (comprised of 6,000 internal and 10,000 external)	12,000 (comprised of 4,000 internal and 8,000 external)	4,500 (comprised of 1,500 internal and 3,000 external)	1,725 (comprised of 1,150 internal and 575 external)	1,140 (comprised of 760 internal and 380 external)	2,595 (comprised of 865 internal and 1,730 external)
Typical per user license cost:	$1,000 internal, $500 external	$2,500 internal, $500 external	$2,250 internal, $500 external	$2,000 internal, $500 external	$1,500 internal, $750 external	$960 internal, $750 external
Total license cost this year:	$11.00 million ($6,00 million internal, $5.00 million external)	$14.00 million ($10.00 million internal, $4.00 million external)	$4.88 million ($3.38 million internal, $1.50 million external)	$2.59 million ($2.30 million internal, $288,000 external)	$1.43 million ($1,14 million internal, $285,000 external)	$2.13 million ($830,000 internal, $1.30 million external)
First year maintenance:	18%	20%	17%	25%	0%	0%
Total maintenance this year:	$1.98 million	$2.80 million	$830,000	$388,000	$0	$0
Typical number of service days to conduct implementation:	2,000 man days	600 man days	300 man days	100 man days	25 man days	10 man days
Total service days this year:	16,000	12,000	4,500	2,300	950	1,730
Typical service costs per day:	$1,750 per day	$1,500 per day	$1,250 per day	$1,000 per day	$1,000 per day	$1,000 per day
Total service costs this year:	$28.00 million	$18.00 million	$5.49 million	$2.30 million	$950,000	$1.73 million

Total RFA market size for 2019/20

	Tier 0	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Total
License Costs	$11.00 million	$14.00 million	$4.88 million	$2.59 million	$1.43 million	$2.13 million	$36.03 million
Maintenance Costs	$1.99 million	$2.80 million	$830,000	$388,000	$0	$0	$6.00 million
Services & Setup Costs	$28.00 million	$18.00 million	$5.49 million	$2.30 million	$950,000	$1.73 million	$56.47 million
Composite Total	$40.98 million	$34.80 million	$11.20 million	$5.28 million	$2.38 million	$3.86 million	$98.50 million

As the multi-year trend towards the lower end of the market suggested, the vast majority of PLM sales are concentrated not just in the small-to-medium business segment, but in the extreme lower end of that bracket. Of a total of 272 RFA PLM sales, 173 were made to businesses with a turnover of $49 million of less, and a further 38 were to businesses with revenues of less than $100 million.

This concentration of sales has had a significant effect on the size and shape of the market. While actual sales numbers have fallen (from a total of 292 in 2018/19 to 277 in 2019/20) the consolidation of new sales in Tiers 4 and 5 has led to a drop in revenue of almost a quarter year-on-year.

It's important to bear in mind, though, that this market size is confined to new sales, implementation, and service-level maintenance only, with a significant shortfall in revenue ($20 million) coming from a reduction in professional services revenue for new sales. Where further implementation phases are concerned, or where an existing PLM customer goes on to buy more licenses or extend their use of the solution in other ways, additional revenue across both software licensing and services can be generated – from thousands of dollars at the Tier 4 and 5 level, up to millions in the upper Tiers.

As a rough estimate, WhichPLM calculates that there are currently around 1,600 customers of modern PLM. If we assume that each of them spends $100,000 in a year on further software licensing and services, we uncover a reservoir of revenue beneath the surface that could easily equal – or even exceed – the size of the visible market. This remains something that we, as analysts, cannot properly evaluate because these expansions are not always made public, but anyone who is interested in understanding the full scope of the RFA PLM market should be aware that a significant portion of it is generated in private.

With these calculations and their results in mind, we now move on to offering WhichPLM's interpretation of the forces that have affected the RFA PLM market this year, and the effect these may have on vendors, customers, and professional services businesses in the near and longer-term future.

OUR ANALYSIS

For several years, the WhichPLM team has explained that vendors should be developing what we refer to as a hybrid business model. This would involve offering PLM software and professional services that can scale both up and down from a mid-point, allowing a vendor to cater to both the upper bound of the market, where professional services and long-running transformation projects still reign, and the volume market, where self-serve and rapid deployment are necessary to keep the cost of customer acquisition low.

In light of the continued depletion of all other sectors of the market, however, we now need to make a stronger recommendation: every PLM vendor needs a solution for the volume market. While sales to brands and retailers in Tiers 4 and 5 accounted for just 6.5% of this year's revenue, it is impossible to deny that the vast majority of prospective PLM customers are now small to medium businesses.

In sales terms, the RFA PLM market has reached what's referred to as the long tail – the years when a product or service has matured to such a level that it becomes an essential utility, and is sold in steady numbers to a predictable market for the foreseeable future.

Over the last decade, we have seen several cycles of PLM leading up to this long tail. Early in its lifespan, PLM was sold as a toolbox – an open-ended platform that required extensive manual work to obtain value from. After that, when the negative effects of customisation had been become more widely-known, PLM became more configurable, providing non-destructive ways for a solution to be adapted to the process and requirements of each customer.

More recently, PLM began to be deployed on the cloud – typically via private infrastructure – making its benefits accessible to brands and retailers who had previously balked at the idea of investing in their own infrastructure. At the same time, this technology shift changed the participants in the PLM conversation from being primarily I.T. staff to being process champions from a cross-section of business areas.

This multi-disciplinary expertise was then fundamental in the development of the best practices that arose from the next wave of SaaS solutions, and have been essential in then taking those best practices and building multi-tenant platforms capable of supporting the essential needs of every kind of business from a single code track.

To better understand the long- term trajectory of PLM, consider the history of CAD. Decades ago, many different creative CAD vendors competed for big enterprise customers. Over time, the best ways of working began to crystallise, and the industry was whittled down to a few key players. Beyond that, a single, subscription-based solution platform came to dominate the market by being capable, keenly priced, and available to anyone at any time – not just big enterprises – with the same feature set accessible to all.

It should be clear where PLM currently sits on that arc, making it unsurprising that the last three years have seen both a consolidation of vendors – there are fewer major PLM players than there were in 2017/18 – and a market where the growth potential is almost exclusively at the volume end of the spectrum. This is not to say that we see activity ceasing at the upper end of that spectrum, but rather that the traditional sales model that has catered to Tier 0 and Tier 1 PLM customers to be replaced as new sales in those segments move to the same modern, multi-tenant platforms that operate across all the other tiers.

And while things might change geographically in ways we cannot predict, the future of PLM for RFA in terms of sales and deployment strategy looks all but guaranteed.

NEXT STEPS FOR PLM CUSTOMERS

It has never been simpler to discover the benefits of PLM. Where once you would have needed to schedule a demonstration to see a solution in action – carefully managed by an experienced salesperson – today you can open another tab on whatever device you are reading this Buyer's Guide on, spin up an instance of a cloud-native solution and take it for a test drive.

By the same logic, if that trial is persuasive, you can purchase a license for PLM at a historic low price per user and begin learning – likely being able to configure basic settings, attributes, and other parameters before you need to engage the services of the vendor's remote onboarding team for a vastly reduced period when compared to a traditional hands-on PLM implementation. From adding new users over time and having them work remotely, to installing monthly upgrades and accessing new functionality, modern PLM is orders of magnitude simpler, more agile, and more reliable.

But this freedom and accessibility isn't without consequences. As little as brands and retailers want to pay for professional implementation and training services, those services are typically run by experienced professionals who have seen the potential pitfalls of PLM many times over, so dispensing with them entirely would be premature. Today, buying PLM remotely, any prospective PLM customer needs to be able to rely on their own in-house knowledge, or to trust that the vendor they have chosen has built comprehensive training and configuration to compensate.

To this end, we encourage you – as we have in previous years - to download as many of our PLM Supplier Evaluations as you can. All are available free of charge from the WhichPLM website, with several vendors having undergone multiple benchmarks. Look particularly for a solution that is both cloud-native and highly configurable, offering you the chance to benefit from road-tested best practices, configure your own views and widgets, manage your full complement of product types, and collaborate with your suppliers.

WhichPLM's team of expert advisors and analysts have been preparing for this moment for many years. We already regularly advise brands and retailers to help them understand the full range of opportunities that true cloud and multi-tenant PLM presents, and often work with them far in advance of the now-streamlined process of solution selection and implementation.

If you are reading this Guide, you are no doubt already a WhichPLM reader. But we nevertheless encourage you to visit our website on a regular basis, as we continue to chart the future of PLM, and tackle the current crisis week by week.
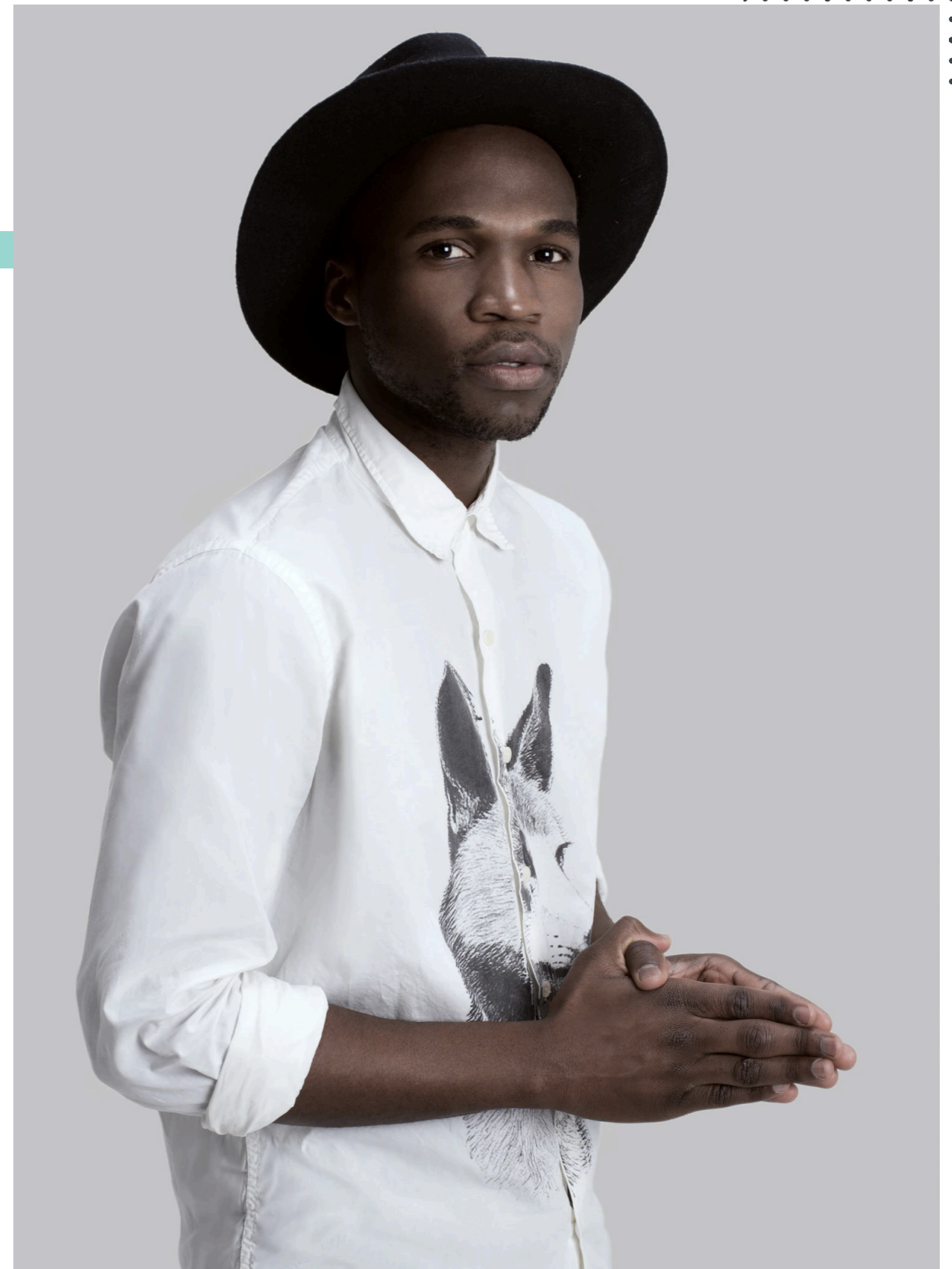
NEXT STEPS FOR PLM VENDORS

While this Guide was being written, retail – along with virtually every other industry on the planet – had the rug pulled out from under its feet. And at the time of publication, most fashion and CPG retail stores are still closed, with online channels either following suit or operating at vastly reduced capacity. The timeline for retail returning to any semblance of normality is uncertain.

In these circumstances, technology spending is not guaranteed to fall. In fact the opposite may prove to be true – with some serious caveats.

Although some brands and retailers will inevitably sadly disappear, others will increase their digital transformation budgets with one of two goals in mind: raw survival, or increasing the odds of emerging in front of the competition in the post-COVID-19 landscape. In both cases, however, that spending is going to be subject to intense scrutiny.

No pilot scheme is likely to be approved without a strong chance of delivering a return. No multi-year consulting engagement will be signed off without leaping through a hazardous series of additional hoops. And prospects – no matter their size - will certainly be evaluating everything the RFA PLM market has to offer, including the kind of affordable multitenant solutions that other enterprise-scale brands have already switched to.

This is the environment that you will need to sell to for the foreseeable future, and it is not one that will welcome the traditional model of service-heavy implementation and bespoke integration. We must underline again the inescapable fact that no vendor can target a 20% corner of the market exclusively – especially when that corner carries by far the highest risk, and has seen a year-on-year decline that dragged the entire market down with it.

As this year's data suggest, the cost of losing a single deal at the upper end of the market can be catastrophic, creating a reduction in revenues of between $5 and $10 million. This year the market lost a quarter of its value because, as a collective, PLM vendors closed just four fewer big deals than they did last year. And at the same time, the cost of acquiring a customer at this level is also huge – spanning R&D, professional services, pre-sales, sales, dedicated enterprise marketing, training and much more.

Compare this to the volume market, where a single new customer can typically be acquired automatically, and where sales, marketing, and training can all be generalised. Yes, there is clearly considerably less money to be made at this end of the market coming from a single PLM sale – especially from professional services – but the risk is also spread extremely wide.

There will, no doubt, be vendors reading this summary who see it as alarmist or just plain wrong. Enterprise customers are spending significant amounts on upgrades and expansions, after all. But realistically, how long can this model survive when the market embraces the idea – long overdue and already percolating – that upgrades should be free to everyone, and included in their recurring license agreement?

Catering to the volume market will not be an easy change for some vendors to make, and – in the interest of clarity – we are not advocating it as a wholesale shift from one extreme to the other that needs to happen immediately. But in the face of the clear trend shown between 2017/18 and 2019/20, coupled with current global events, it is hard to see it as anything but a necessary one.

NEXT STEPS FOR PLM CONSULTANTS

In light of the current crisis, the role of the external expert has changed. Rather than being sought after for your process and technology expertise, brands and retailers will now be looking to you for guidance on business continuity, change management and rapid digital transformation. Phased implementations were once the pragmatic choice – today they will be seen as essential, since quick time-to-value will make or break not just a PLM project but potentially an entire business.

Two years ago we suggested that all consultants and advisors – although especially implementation partners – needed to "rapidly remodel their businesses to service two very distinct markets simultaneously". That remains the case today, although we have revised our guidance to reflect the changing nature of consulting engagements as a whole.

As this year's market analysis shows, Tiers 0 and 1 still produce the lion's share of professional services revenue, but the future of that revenue stream is looking increasingly precarious, and we expect will continue to fall year on year. At this level of the market, professional services contracts are likely to morph very quickly into business contingency and crisis planning partnerships. So you should be prepared to help brands and retailers re-engineer their product lifecycles, undergo far-reaching digital transformations, and implement proven best practices that will allow them to mitigate the immediate damage to their businesses and then lay the foundations for constructing truly end-to-end digital workflows.

From a software point of view, automation and self-serve deployment and configuration are already the norm in Tiers 4 and 5, with a typical implementation timeline measured in weeks, with minimal engagement of external help. And at the same time, smaller businesses simply do not have the budget to draft in third party advisors to assist with their survival plans; those strategies will need to come from within.

In light of the stark difference in professional services revenues at this end of the market and Tiers 0 and 1, it can be difficult to visualise any role for consultants here. After all, in a world of short implementations and user configuration, are third partner implementers still necessary? We believe so, but for much shorter windows of time. Rather than embedding teams for months or years on end, your business model should be oriented around advisors helping smaller companies prepare their data and audit their processes for perhaps two or three weeks – and then supporting their specific training and user adoption requirements for a short while afterwards.

A secondary opportunity might arise in helping your vendor partners to design, maintain, and update the kind of tutorials, videos, wizards, and other materials that they will need to service the volume market without dramatically increasing their own overheads. Or you may even wish to consider training and accrediting smaller sub-practices or partners in emerging markets who can manage the influx of Tier 4 and 5 clients that are all but guaranteed to arise in those areas.

As an independent party whose services can be paid for on a contract basis, though, the crisis could present an opportunity. Unfortunately, many brands, retailers, and technology vendors will be forced to operate on reduced headcounts during the pandemic (when staff are furloughed) and afterwards, when operating costs clash with reduced cashflow, and lay-offs are forced onto the agenda. In both situations, the ability to engage an independent expert for a short period of time, to cover work that would previously have been managed in-house, could seem increasingly appealing.

GLOSSARY

WhichPLM has a history of introducing new ideas to the industry, and coining terms to better define and encapsulate existing ones. The concept of Extended PLM (E-PLM) originated with us several years ago, and throughout our editorial, analytical, and advisory work, we have helped to define (or re-define) many common industry acronyms and terms.

Throughout this Buyer's Guide, readers will find those industry acronyms and common terms used or alluded to by both our in-house team and by vendors and consultants who appear in our listings. While we have made every attempt to define these where they first occur, the nature of this Buyer's Guide means that not every reader will approach its content in a linear fashion, cover to cover.

In order to avoid confusion and provide absolute clarity for all common acronyms and phraseology, this glossary collects concrete definitions from PLM experts of what we consider to be the most useful, contested, and popular PLM industry terms, arranged in alphabetical order.

2019/20 = Each WhichPLM publication represents a retrospective look at the financial year that has gone before it, this Guide included. Our 2019 Buyer's Guide, released in summer 2019, examined trends, market analysis, topics, events, end user feedback and more – all originating from or pertaining to the fiscal year 2018/19, while this PLM Buyer's Guide contains similar content, but from the financial year 2019/20. As a British company, WhichPLM defines a fiscal year as beginning 1st April of the originating year, and ending 31st March of the following one - so when we refer to "2019/20" in these pages, we mean the period from 1st April 2019 to 31st March 2020 rather than both full calendar years.

CAD = An acronym for Computer Aided Design, which collectively refers to any software platform - including peripherals and hardware accessories - that enables a designer to work digitally rather than on paper, to agreed upon and replicable standards of measurement.

Cloud = A catch-all term for any application, deployment, or strategy that involves distributed processing or storage. Historically, these were split into Software as a Service (SaaS), Managed Services, and a host of other labels, but while the differences between these approaches remain, WhichPLM considers the most important distinction today to be between whether a solution is hosted on-site (i.e. on hardware owned and maintained by the customer) or off-site, in data centres owned and maintained by the vendor. While this is not always the case, a cloud deployment is often tied to a subscription pricing model, rather than the traditional upfront license / ongoing maintenance model.

CPG & CPG Crossover = Short for Consumer Packaged Goods, CPG is an extremely broad term that, along with Retail, Footwear and Apparel (RFA) captures almost every product category for retail goods, besides food and beverage. Starting from last year, our Market Analysis contains customers that fall under the umbrella of CPG Crossover. Coined by WhichPLM, this category is designed to capture those PLM customers who fall somewhere in between the RFA market that WhichPLM has covered for close to a decade, and more traditional consumer products. Broadly speaking, crossover products will still incorporate soft materials and textiles or employ similar processes to apparel.

By way of example, toys, pet care products in the soft category, home and office furnishings, eyewear, watches, and jewellery would be considered CPG Crossover product categories, and therefore brands and retailers who work in these categories are, as of this Buyer's Guide, considered valid for inclusion in PLM vendor's customer lists, and are covered by our Market Analysis. And while this list is by no means exhaustive, pharmaceuticals, food and beverage, beauty and cosmetics, white goods, and other similar products are considered to be traditional CPG, and do not fall into the CPG Crossover category. These products (and the brands and retailers that sell them) are not, therefore, included in either our Market Analysis, or in vendor customer lists.

E-PLM = Shorthand for "extended PLM", E-PLM is a catch-all term referring to any of a massive variety of product development related applications or data repositories that should rightly be considered a part of the product development environment for the purposes of integration and data integrity. Today, digital transformation initiatives centre around the creation of a unified technological environment comprising E-PLM, PLM and other enterprise solutions. Our usage of this acronym has decreased over time, however, and as you will notice as you read this publication, we now prefer to use the catch-all term "digital solutions" to refer to technologies that support the goal of digital transformation outside the PLM purview of design, development, and sourcing.

ERP = Enterprise Resource Planning is often cited as being one of two large business systems that sit at the heart of a modern retail or brand environment – the other being PLM itself. ERP is more financially and logistically-oriented than PLM, and although this is not an exhaustive definition, the simplest method of delineating the two is to remember that PLM handles all product development tasks, passing its information on to ERP at the point that a product becomes a reality and enters the ordering, shipping, allocation, and selling process.

External user = We define an external user as an active, individual license situated outside the parent company – typically within the offices of one of its geographically distant supply chain partners. These users will likely have restricted access to the PLM solution, so the functionality of an external license

should not be automatically considered equivalent to an internal license. Prospective customers should also note that vendors' approaches to these licenses differ dramatically: some provide free-of-charge external user licenses; some assign a license fee; some choose not to distinguish between these and internal users; and still others offer a stripped-down "vendor portal" instead, and do not recognise the term "external user" at all.

Internal user = We define an internal user as an active, individual license situated within the confines of the parent company – either its own offices, satellite locations, or international representatives.

License = A PLM solution is typically sold on a license basis, with each individual user that the customer predicts will need access to the solution (whatever their role) charged an individual license fee at an agreed rate. This applies to both internal users and external users. Pricing for both types of user can be subject to volume pricing. The word "license" may also be used to refer to the actual agreement between customer and vendor.

Maintenance = While vendors' own definitions of the term "maintenance" vary, WhichPLM defines it as the ongoing contract between customer and vendor that stipulates the provision of help desk support facilities, as well as access to bug fixes and enhancements to the licensed solution provided as GA (see above). This does not typically include the costs of the implementation itself or any hosting costs, since these are usually factored into what are referred to as "first year" costs, alongside licensing and more immediate services.

New, signed customer or new-name sale = Readers will find this phrase throughout our Vendor and Consultant Profiles, as well as our Market Analysis section. Where it is used, we are referring to a business that has, in the period we define as 2019/20, signed a deal with – in the case of the PLM Vendor Profiles - an apparel PLM vendor to acquire that vendor's PLM solution ready for implementation across one or more brands, and with any number of licensed users. Customers who adopted a different solution from the same vendor without PLM – CAD, for instance – do not fall within this definition, and neither do customers of ERP, warehouse management and so on, unless they bought and adopted those solutions concurrently and in addition to PLM. For the reasons stipulated in its definition, PDM does not qualify as PLM for the purposes of this Buyer's Guide, and customers of PDM (and CPM) are not included in overall figures or statistics for 2019/20, falling well outside the scope of this publication.

PDM = An acronym that saw widespread use prior to the year 2000, when Product Data Management solutions were considered to be the best possible tools available to retailers, brands and manufacturers seeking to modernise their product development environments. As the name suggests, these systems were focused on the production, cataloguing and communication of product data – typically in the form of a PDF "tech pack". Although these solutions were later web-enabled, refined and enhanced as the industry progressed, eventually more fully-featured, web-based solutions that handled a greater variety of processes emerged, and PLM replaced PDM in virtually all of the territories WhichPLM covers. No major vendor focuses on selling PDM systems today, and the majority that previously did have established clear transitional programmes to move their legacy PDM customers to their modern PLM platform.

PLM = An acronym used in place of its longhand version, Product Lifecycle Management. Considered to have superseded CPM in approximately 2003, PLM is a suite of tools (often collectively called a "platform") that enables retailers, brands and manufacturers to optimise their product development processes, consolidate their data, and create a centralised, contemporaneous, collaborative backbone for the people, products and processes that together make up the lifeblood of their business. Although the acronym itself originated in the aerospace and automotive industries, today there are many vendors who provide proven PLM solutions to the retail, footwear and apparel industry, either as their sole focus, or as one vertical amongst many.

Resourcing = Where we refer to a given vendor's "resourcing", or where (such as in this publication's Vendor Profiles section) we have requested statistics to support a vendor's "resources by region", we are referring to individuals in the employ of the vendor who work in the area of PLM for retail, footwear and apparel. This does not typically include third party implementation or development partners, but these may fall under the umbrella of "resources" where an extremely close relationship has been established between the vendor and its partners over the course of many years. It is clearly desirable that these individuals have direct RFA industry experience in addition to deep product knowledge, but sadly this is not always the case, and in order to draw a distinction between pure numbers and what we consider to be "real" apparel industry staff, we use the phrase "expert resources".

RFA = A common industry acronym, RFA stands for retail, footwear and apparel, and is widely-used shorthand for the fashion, accessories, jewellery, footwear, toys, automotive and home furnishings upholstery / textiles industries. Following on from last year's Buyer's Guide, both RFA and CPG Crossover market segments are included in both our Market Analysis and PLM Vendor Listings.

ROI = Return on Investment refers to the main metric by which implementations of any enterprise system is typically judged: financial performance relative to the required investment. Despite some reductions in the total cost of ownership of PLM, the expenditure involved in licensing, implementing, and maintaining a modern solution remains significant. As a result, PLM projects should only be undertaken when a clear ROI business case has been assembled – an objective analysis of how soon and in what form the chosen solution can be expected to deliver a financial return greater than the cost of obtaining it.

Seat = Essentially interchangeable with "license", seat refers to an active, maintained individual software license – i.e. a human being occupying a seat at a desk, performing a job role, and actively using the software in question.

UI / UX = These two acronyms are not – despite common misuse – interchangeable. UI refers to the user interface of a given piece of software – the actual design and interactivity components through which the user experiences raw functionality. UX, on the other hand, is a farther-reaching term, used to denote the broader experience of actually working with that software. UX will include UI, but will also factor in other aspects like speed, social collaboration, click rates, the flow of information and more.

whichPLM