whichPLM

THE BUYER'S GUIDE

2019

WELCOME

To the WhichPLM Buyer's Guide 2019.

This publication is technically the ninth in an annual series. So if you're new to WhichPLM, that should give you some idea of just how long we've been researching, writing about, and analysing our single specialist area: technology for the retail, footwear, and apparel (RFA) industry.

It's only recently, though, that I took the decision to make these yearly reports free to everyone. Last year we tested the waters by publishing the kind of exclusive, data-rich publication that big analyst firms would charge thousands for, with no strings attached. To say it was a success would be an understatement; our **2018 Buyer's Guide** was downloaded, read, and shared by thousands of senior executives and stakeholders from many of the world's biggest brands, as well as every major technology vendor in our industry.

Crammed with even better content, I'm confident that this publication will reach an even wider audience, and I believe this gives me a very precious platform – a way of reaching out to a cross-section of the industry that doesn't very often all come to the same place. So I want to kick off our 2019 Buyer's Guide by talking about something that should concern us all, because I know it's been on my mind a lot this year.

I mentioned that WhichPLM has been around a long time, but I've been in the industry even longer – more than 45 years. 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.

Back in the 1980s, when computer aided design was a brand new idea and a graphics card took up an enclosure the size of your dining table today, I and my colleagues were on the vanguard of a real change in the way our industry worked. We saw serious challenges with the way fashion was operating, and we believed we'd found the solutions.

And in most of the ways that mattered, we were right. With PDM, we helped apparel businesses to take back control of their core product design and development processes, and to keep all their data in one place. When we introduced PLM, at a time when the world was only just beginning to move beyond fax machines, we opened up that level of data consolidation and control to the entire enterprise, and also used the newly-commercialised Internet to create new connections between brands and retailers and their suppliers – who were usually situated on the other side of the world.

Looking back, I've always thought we did great work, and I was proud to have made fashion run quicker and smoother than ever before. And although PLM has obviously replaced PDM in the intervening years, companies of all shapes and sizes were able to obtain real value from both generations of solution.

But recently I've started to wonder if, in the processes of making product development and offshore sourcing speedier, we shouldn't share some responsibility for the negative consequences the disposable, offshore model has created.

Because, in the process of making fashion run faster, we unknowingly opened the door for fast fashion. No doubt you're sick of hearing those words, but like it or not, that combination of catwalk-fresh style, speed to market, and planned scarcity has completely redefined the market's expectations for the way fashion should operate. Not that long ago, people shopped for styles that would stand the test of time, and quality that promised a lifespan of years; today, they've been conditioned to want bargain prices, constant newness, and to feel comfortable with the idea of throwing a comparatively cheap garment away and just buying another one.

The market conditions were, of course, ripe for that change to happen. New media channels meant that more people were exposed to a wider variety of styles and influences, and the rise of multi-channel meant that companies that could adapt catwalk styles quickly, price them affordably, then repeat the process even faster the next time, had a captive market. And the ones who managed that became the household names we all know today.

But as our UK and international readers will know, fast fashion – which has dominated the industry conversation for the best part of a decade, becoming the model that many sought to emulate – is now experiencing a backlash. Why? Because the compelling proposition the consumer saw – cool, cheap clothes, with a new collection every couple of weeks – came with big unspoken costs that are now being dragged into the spotlight.

To design, develop, source and sell cheap, on-trend clothes, brands and retailers had to either sacrifice their own margins, or find ways of optimising costs elsewhere in the lifecycle. And those savings came from the sort of obviously unpleasant sources that the apparel industry used to go to great lengths to hide: low-wage or even unpaid labour, mandatory overtime, significant carbon footprint, large landfill contributions, and little or no transparency when it came to understanding the specific impact of these and other important metrics.

I'm keen not to point the finger entirely at fast fashion, because the same trend happened in other areas of the market as well. Spurred on by the big names in affordable style, almost every segment turned fashion into a commodity to a greater or lesser degree. And as other industries have shown, for commoditisation to be an effective model, volume and velocity are key.

I want to also be clear about something else: offshoring was necessary for all but the most niche products. And the retail, footwear and apparel industry certainly didn't create the inequalities that exist between countries where shopping for clothes is an easy luxury, and countries where making clothes is the only work available, and wages are suppressed so much that abject poverty is institutional. I've spent a life in fashion – from the cutting room to the boardroom – and as much as I love and respect this industry, I recognise that it can't drive social change on its own, despite being a good engine for progress.

From the same positive perspective, for every volume-based retailer that's now being raked over the coals for the negative impacts of their business model, there are ten or more smaller brands trying a different angle. From small, scheduled "drops" of scarce, high-quality products, to so-called "radical transparency," companies are successfully experimenting with either minimising their negative impact on the world, or opening

their doors to let consumers decide for themselves. And even the biggest companies are experimenting with creating new performance footwear from recycled ocean plastics, or even – as Adidas did just before this publication came out – raising the idea of customers' buying a pair of shoes, being able to send them back for recycling, and getting a new pair – all baked into the cost. I can't second-guess how the concept of subscription-based sneakers might take off, but I definitely can't deny that businesses – from the big to the boutique – are trying something different.

At the same time, an even hotter market for the resale of short-run and luxury items has been enabled by services like StockX and the long-running eBay – where more durable, timeless fashions can enjoy longer lives, and where we can see a real shift towards a more sustainable mindset.

But in the end, something bigger had to give. And 2018/19 has been a tipping point in the way the international community (regulators and consumers) think about the real cost of their clothing. eCommerce success story ASOS has seen a huge slump in profits, and the biggest names in fast fashion here in the UK were hauled before Parliament to account for the environmental and ethical damage their businesses were causing. And this is coming hot on the heels of the enforcement of the Modern Slavery Act, which mandates that any UK company with more than £36 million (roughly $48 million) in annual turnover needs to issue a public statement as to whether slavery, by the modern definition, exists anywhere in their extended supply chains. And similar initiatives are gaining steam elsewhere in the world, of course.

So whether we like to admit it or not, the retail, footwear, and apparel industry is in the firing line – and in a lot of cases the brands and retailers being exposed to the most public criticism simply don't have the equipment they need to defend themselves. Take the Modern Slavery Act, for instance; to fully comply with the Act, businesses need to be able to confidently state that every Tier of their supply chains, from raw materials and components to assembly and distribution, is free of contraventions of ethical and environmental standards. Now realise that at least half of these companies – likely many more – have yet to extend their use of PLM to even their first-tier suppliers, and it becomes obvious that, however good their intentions, these companies simply do not have the level of visibility they need to actually answer the questions that government and the open market are asking of them.

"After helping to make product development and offshore sourcing speedier, should we share some responsibility for the negative consequences the disposable, offshore model has created?"

And as I mentioned, that's just one piece of regulation amongst hundreds that are in effect or soon to come into force – covering working standards, wages, material sourcing practices, fabric dyeing processes, and much more.

So where now? When we introduced PLM to the RFA industry, did we create a new monster that we now have no choice but to run away from?

I don't think so. In fact, I believe that the technologies we've created actually have the potential to be the answer provided they're used in the right way, and are all integrated to a common data source, like PLM, to create a seamless view of the product journey – from initial idea to recycling and re-use. 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 a change.

All of which is why we're now widening the net of the technologies that WhichPLM covers. You may have already seen this change on our website, where we've added 18 new technology categories on top of our core focus on PLM – covering everything from trend analysis to blockchain-driven transparency.

These were not categories we arrived at randomly; they represent what we see as the key areas of any apparel business that need to be brought into the digital age to deliver the kind of agility and accountability that the future will demand. We call this blend of technologies the digital solution landscape, and we believe in it so strongly that you're going to find an entirely new section of this publication when you turn the page.

I'm obviously incredibly grateful to be here, more than a decade from when WhichPLM was founded, helping brands and retailers to make the most of their investments in technology. But from 2019 onwards, I want to see WhichPLM making a difference in three ways:

- To our brand and retail readers' lives, by improving their day to day operations.
- To the profitability and operational stability of the retail, footwear, and apparel industry as a whole, by providing the information that businesses need to make the right technology choices.
- To the world, by working with technology vendors, not for profit organisations, agents, and manufacturers to make sure that technology is delivering mutual benefits and bringing as many players in the value chain as possible into the digital age.

You will still find our core PLM market analysis later in this publication (with up-to-the-minute market intelligence, and more detailed recommendations and guidance than ever for different types of readers) but I want to personally invite you to turn the page and dig into our vision for the future of total digital connectivity. From today onwards, I want to help our industry to create better, longer-lasting products, profitably, without either vulnerable people or the planet footing the bill.

I hope you'll join me.

CONTENTS

06.

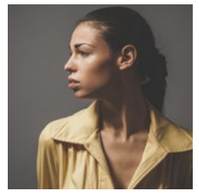
An introduction to the new generation of digital solutions shaping the future of fashion and retail.

58.

Comprehensive listings of all major PLM vendors that cater to the retail, footwear, and apparel industry.

78.

Listings for key RFA PLM consultants, including key insights into trends in technology & implementation.



86.

The final instalment of WhichPLM's exclusive, industry-defining PLM market analysis, covering 2018/19.

102.

Executive summaries with our recommendations for customers, vendors, consultants & partners.

THE NEW CLASS

Meet The Next Generation Of Digital Solutions.

Using multiple different technologies to run a business is not a new idea.

Over the course of the last decade, WhichPLM has been asked by some of the world's biggest companies to assess their preparedness for replacing an outdated PLM solution. Part of that process involved auditing their technology ecosystems, and in many cases we found hundreds of solutions and data sources – all running separately, with complex inputs and outputs, and all spread across design, development, and sourcing.

As you can probably imagine, operating that many different, disconnected solutions at once (often with significant functional and data overlap) is not an optimal situation. And to reinforce that idea, we learned that in every one of these cases the sheer number of solutions, data repositories, and ad-hoc processes had arisen out of necessity. Ideal solutions that could solve many of these brands' and retailers' major problems at once simply did not exist at the time the companies began working digitally – leaving them no choice but to implement and use technology on a piecemeal basis, with little or no integration.

This might be an extreme, but it is still not uncommon for a brand or retailer that has been operating for more than a few years to have found flaws in some (or even all) of their many business systems. Alternatively, the solutions themselves may have fallen into disuse due to a lack of functionality, or there being no clear (or cost-effective) way to get back on the upgrade path. Or, of course, the company may have simply outgrown an old solution as its business has evolved, leading to more work being done by falling back to manual methods, or finding ingenious workarounds that save time but promote an acceptance of the idea that critical information can exist outside the most critical of business systems: PLM.

In these cases our recommendation was always the same: identify new processes and technologies (such as upgrading to a truly modern PLM platform) that will help consolidate those redundant technologies, and implement and integrate them in a way that will eliminate manual work and add compounded value at more than one stage of the product lifecycle.

This advice helped give rise to a whole new generation of digital solutions. We see these as platforms and services that, rather than being point solutions for solving a small problem, can serve as building blocks for more comprehensive digital transformation. And most importantly, the vision they are coming together to create is of a digital ecosystem built with purpose and by design – rather than being a steady accretion of workarounds.

Since the idea of more feature-complete, varied digital solutions started to come to fruition, brands and retailers have, understandably, jumped at the chance to replace two, three, or even four other solutions with one. And at the same time, technology decision-makers have begun to approach the PLM market with a view to finding both a centralised data source and a backbone for enterprise integration.

This is why our 2019 Buyer's Guide retains its core focus on helping brand and retail readers to choose the right PLM solution to meet their needs. Vendor listings, Market Analysis, and key recommendations are all available free of charge, and can be easily shared with the other stakeholders and technology end users to help them understand the transformative potential of truly modern PLM.

"New technologies are coming together to create an ecosystem built with purpose and by design - rather than a steady accretion of workarounds."

But it's also why, after a decade of helping to introduce new technologies to the retail, footwear, and apparel industry, WhichPLM is returning to our roots and adding other digital solutions to our Buyer's Guide. In the following pages you will find 18 different digital solutions categories – each containing an explanation of how and why that kind of solution could help you deliver on your goal of digital transformation. So, without further ado, please turn the page and discover the new generation of trusted digital vendors. From the experimental to the enterprise-ready, we believe this category paints a compelling picture of the all-digital future of the fashion and retail industry.

As with our PLM and consultant listings, the advertisements included in each digital solutions category are intended to help you, the reader, quickly identify the key players in what we consider to be the most important added-value technologies, and do not imply any endorsement on WhichPLM's part.

2D CAD

CAD stands for Computer Aided Design, which is a common term you'll find everywhere from architecture to industrial engineering and discrete manufacturing. These sectors, where the finished product is made from stone, metal, or polycarbonate, were the first to move away from paper-based manual drafting to drawing different perspectives of their products and components digitally. The retail, footwear and apparel industry eventually followed suit, although some designers still chose to draw with pencils up until a few years ago.

CAD is segmented into two different technologies: 2D CAD and 3D CAD, the latter of which has its own section overleaf.

In apparel, 2D CAD encompasses both the technical and the creative; CAD packages are used for everything from initial inspiration sketches right the way through to extremely exacting tasks where products and components are drawn to an absolute scale that is consistent across entire size ranges. CAD tools are also used in many other areas where freehand drawing, experimentation, and artistic license are applied – including artworking, illustration, and print and pattern design.

(Please note: pattern here refers to a repetitive pattern of shapes and colours, rather than the underlying pattern or block that a garment technician or patternmaker will create when they transform an artistic design into a manufacturable product.)

The major software provider in the 2D CAD market is currently extremely entrenched, and depending on who you ask, disruption is either unlikely or overdue. In most of the Western world, Adobe Illustrator (sold either in isolation for around $20 per user per month or as part of a suite of creative tools) has become the de facto vector drawing tool for design teams, with a scattering of third party solutions and in-house tools used to supplement its functionality.

Illustrator's success can, in part, be attributed to its extensibility, interoperability, and potential for integration. Like other Adobe tools, Illustrator can use both its own .AI file format as well as a range of other open standards - and both free and commercial plug-ins can be developed to add new functionality in areas like pattern design, knitting, weaving, and colour management.

Almost every modern PLM solution offers an immediate integration to Illustrator, with the best delivering single-sign-on (SSO), which allows designers and creative teams to create styles within Illustrator using libraries housed in PLM, and then to publish those styles to PLM without ever leaving the Illustrator environment.

"The major software provider in the 2D CAD market is extremely entrenched."

"CAD TOOLS ARE USED WHEREVER FREEHAND DRAWING AND ARTISTIC LICENSE ARE APPLIED."

efi Fiery® DesignPro

Textile and Fashion Plug-ins for Adobe® CC

Unleash creativity with efficient fashion and textile design tools.

- Powerful, easy-to-learn Adobe® plug-ins
- Design seamless repeats
- Create stunning colorways
- Organize seasonal colors for the entire design team
- Match colors easily
- Runs on Apple macOS® and Microsoft® Windows®

For more information visit www.efi.com/designpro

Or contact us at fiery.designpro@efi.com

koppermann®
A Passion for Innovation

SOFTWARE SOLUTIONS
FOR FASHION INDUSTRY AND RETAIL

No. 1 tool for design professionals

Koppermann 2D FASHION DESIGN

virtual fabric & knit construction
photorealistic simulation
intelligent libraries
color management
creative database
knit construction
file management
vector sketching
creative reseach
moodboard
color card

Koppermann – A Passion for Innovation

After more than 20 years the name Koppermann continues to stand as a guarantor for innovative software solutions in the fashion and clothing industry. Ever since its foundation in 1990, Koppermann has built up a reputable client base of more than 1200 companies through its pioneering spirit, innovation and passion and can record consistent and sustainable growth. Every day, more than 50 highly-qualified industry and IT specialists develop new, tailor-made solutions for your creative value-adding network – innovative, experienced and always with a finger on the pulse of our times.

Get in touch for an online presentation!
Koppermann Computersysteme GmbH Phone + 49 8178 97 010 info@koppermann.com www.koppermann.com

3D CAD

Just like 2D CAD, the apparel industry was a late convert to the benefits of designing and visualising its products in 3D, but the last three years have seen an avalanche of adoption, and today 3D is at or near the top of most brands' and retailers' priority lists when it comes to implementing new technologies.

The reason for this rapid increase in interest is straightforward: until recently, 3D simulation of fabric was incomplete and fell short of the level of realism needed to accurately portray the way materials draped, moved, and reflected light. This is no longer the case, and the best 3D solutions can now deliver extremely exacting, realistic results, giving designers and product teams a way to not only create new styles in 3D, but to scientifically predict how those styles will behave in the real world.

The sudden influx of brands and retailers led to an explosion of different 3D solutions, but the industry very quickly coalesced around a much smaller concentration of companies – most of which had actually led the initial charge for 3D in garments and footwear almost a decade earlier – as well as potential disruptors from other industries where 3D is more firmly established.

Although a high-fidelity 3D asset can have almost limitless uses, these tend to fall into two clear categories: what we call "technical 3D" and what we call "aesthetic 3D". The first of these is concerned with consistency between 3D visualisation and the underlying 2D pattern, and covers areas like fitting, adjustment, material alteration and other design and development tasks that can be virtualised. Aesthetic 3D covers more subjective areas, where a 3D asset is used in augmented reality for range-building purposes, used to populate an eCommerce catalogue, or deployed in place of a physical prototype for in-house or open market testing purposes.

Although there is some crossover between these two categories of applications, in practice most brands and retailers who have bought into the 3D revolution now run at least two different 3D solutions to cover different tasks or to cater to multiple product categories. As a result, while there are leaders in very particular areas (such as footwear) there is no single vendor dominating the market for 3D as a whole.

"The last three years have seen an avalanche of adoption..."

Luckily, considering the fact that any multi-category brand or retailer will likely need to invest in several 3D solutions, the return on investment potential of 3D is clear and compelling. From greater costing accuracy, improved bill of materials calculations, and the elimination of one or more costly, time-consuming sample rounds from the average product lifecycle, adopting 3D has the potential to pay for itself far more quickly than other enterprise technologies.

To make full use of multiple 3D solutions, brands and retailers will need to ensure that each platform is integrated to their complete digital ecosystem, using PLM as the central repository for material data, sizing information, and so on.

BROWZWEAR

3D DESIGN
JUST GOT A WHOLE LOT MORE FASHIONABLE...

Browzwear is springing into fashion with our 3D clothing design software VStitcher and Lotta - April 2019 editions with the amazing new features and tools introduced to streamline your end-to-end fashion design workflow:

With our pioneering **Colorways Workplace** – the only advanced, comprehensive solution for professional apparel designers – complete multiple colorways are easily created, edited and completed within minutes.

Our native **Physical-based Rendering (PBR)** generates photorealistic material rendering in 3D, including metallics, velvet, glitter and so much more.

Group/Lock/Hide tools group multiple elements such as trims, which can then be moved together as one unit, or hides an element's type (e.g. pattern maker's measurement lines), allowing a multidisciplinary team to work on the garment concurrently.

New **3D Styling** tools allow 'retouching' garment drape, removing wrinkles and achieving the optimal look for showcasing.

For more information and a free demo, contact us at www.browzwear.com.

LEARN FROM THE WORLD'S MOST PROMINENT EXPERT ABOUT

3D PRINTED FASHION

TAKE PART OF THE NEXT FASHION REVOLUTION

Learn about how 3D printing will **revolutionize the way we consume & produce fashion.** Danit Peleg leads **engaging & inspiring** talks and **workshops** both online and in-person. Get hands-on experience with 3D printers and **design & print your own 3D printed textiles!** Perfect for keeping your team up to date with the latest emergent fashion technologies!

BOOK A COMPANY SESSION & WORKSHOP TODAY:

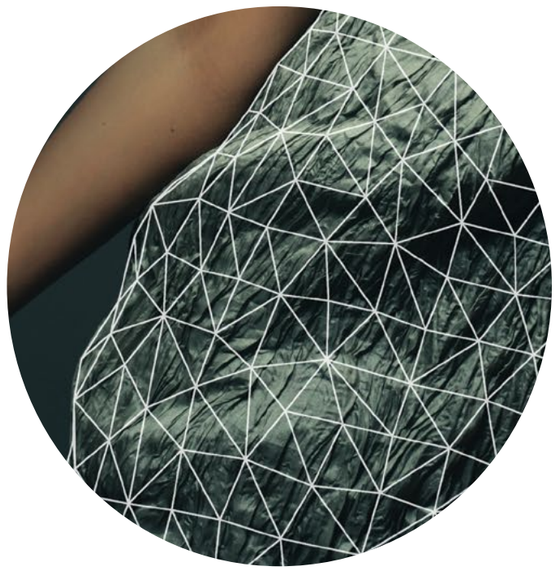
BOOKING@DANITPELEG.COM

DANITPELEG.COM

efi | OPTITEX

GREEN IS THE **NEW BLACK**

FROM POLLUTION TO SOLUTION.
CLEANING UP THE FASHION AND APPAREL SUPPLY CHAIN WITH **DIGITAL INNOVATION.**



WWW.OPTITEX.COM

The Real Value of 3D in Fashion.

At PixelPool we believe in a sustainable and innovation driven fashion industry.

We empower the world's most innovative fashion brands to become more agile, enhance their planning and ignite their sales opportunities.

Our new 3D cloud-based platform helps your brand to stay ahead of the game and to be ready for the future.

Implementing 3D into your value chain is no longer a Choice, it Is a Necessity.

Discover the value of our platform at: pixelpool.com/embrace3D

PixelPool™

Empowering the fashion industry
through innovative digital solutions

ARTIFICIAL INTELLIGENCE

Perhaps the most debated technology in history, Artificial Intelligence can mean many different things depending on the context the term is used in. From science fiction to academia to a recent goldrush, the A.I label has been stuck on almost everything – from self-driving cars and Terminator's world-ending SkyNet, to simple relational databases that are anything but A.I. Practically speaking, though, Artificial Intelligence is actually not a very useful label, because it's essentially an umbrella term under which a raft of different technologies sit.

At the bleeding edge, Google-owned company DeepMind is working on what might be classed as "true" narrow A.I, meaning a self-learning system trained in a very particular area (such as a strategic, combinatorically complex game like Go or Starcraft) and capable of outwitting even the best human minds with novel approaches. This is research-driven work rather than commercial software.

In the mass market, we have the much more prevalent "machine learning," which is where this area of technology has clear commercial applications. Machine learning covers everything from computer vision (the neural networks that drive scene recognition and facial recognition in photography) to smart, contextual search engines for websites. Essentially any system that can be trained on a large initial data set, like pictures, then fed ongoing data of the same type, and is allowed to use its own prior output as input can be said to be machine learning.

What this means in practice is that, as a brand or retailer looking for a new era in business intelligence, or a way of automating a non-trivial process at a previously unimaginable scale, you're going to be sold A.I but you're going to be buying machine learning. Unfortunately, though, the industry has now accepted A.I as the catch-all term, so it's one we're going to see used for the foreseeable future.

None of this should take away, though, from the fact that machine learning can be a totally transformational technology in the right hands. Today, machine learning-based solutions have delivered real results in areas as diverse as trend analysis, real-time price optimisation based on a huge number of variables and market conditions, smart inventory allocation and channel balancing, massive-scale eCommerce user experience, and much, much more – all of which can be integrated into the enterprise-wide digital ecosystem.

We encourage readers interested in A.I to download the freely available **WhichPLM Report: 7th Edition**, which contains more than 40 pages of history, analysis, and recommendations. This is an area to watch in 2020 and beyond.

BLOCKCHAIN

Place ten people in a room and ask them to define blockchain, and you're likely to get five confused shrugs and five completely contradictory and conflicting answers. Aside from A.I., no single technology has been more widely discussed and less widely understood than blockchain - but this has not stopped a few pioneers from creating compelling, albeit early-stage, applications of blockchain principles to the retail, footwear and apparel industry.

Although we are early members of the Retail Blockchain Consortium, WhichPLM has held off putting out any detailed research into blockchain because, until the last year or so, almost everything being discussed was theoretical. Now, though, the retail industry has begun to take some more meaningful steps towards actual use cases, and this is something we see picking up pace in 2020 and beyond.

Before we highlight a couple of those examples, though, what is blockchain and why should you care? You might have heard blockchain technology being referred to as "distributed ledger" technology, or DLT, and while this is accurate, it doesn't really answer the question because a distributed ledger isn't something most people are familiar with.

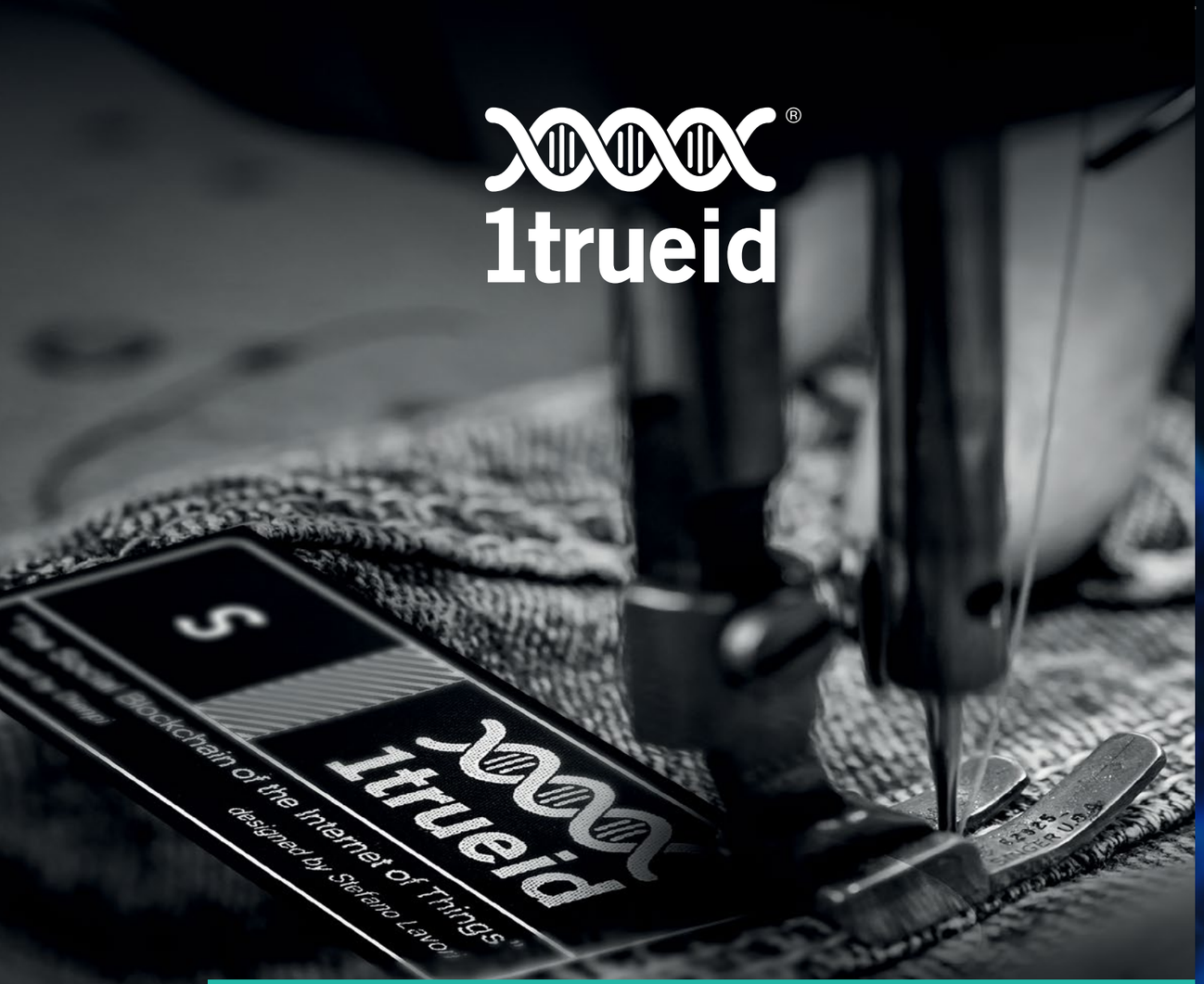
At WhichPLM, we have found that the easiest way to think about blockchain is as follows: picture a conveyor belt moving something along. What it's moving doesn't actually matter, but let's imagine for now that it's in a grocery store, and it's moving a large but finite number of apples from one end to another. A crowd of people is stood around the conveyor belt at a set position. Every time someone wants to take an apple and keep it, or give it to someone else, that crowd of people has to confer and agree the number of remaining apples and the way they're laid out before the belt can move any further – adding a new 'block' to the 'chain' that cannot be rolled back. When they agree, the number is written into an indestructible book that's shared between them all, in an ink that cannot be erased or overwritten.

Because of this process, the book the crowd collectively holds (the distributed ledger) contains an accurate, unbiased, and incorruptible record of what was moved, when, and where to – delivering total accountability and transparency. And if one member of the crowd were to disagree or disappear, the others would all hold multiple redundant backups of the consolidated transaction log.

In most blockchain applications, the distributed ledger is made public, so that any transaction can be viewed by anyone once it has received sufficient confirmations. This is how cryptocurrency works, but with the added incentive that the crowd producing the ledger is also given a small amount of the asset being moved in exchange for their work. Private blockchains, however, provide the same degree of transparency and accountability for a specific audience – such as raw material suppliers and the brands and retailers who source from them.

This may be a very simplified view of blockchain, but it should provide some idea of how the idea can be applied to the retail, footwear and apparel industry. Downstream – from brand to consumer – a public blockchain can provide cast-iron evidence of a company's commitment to ethical, environmentally sustainable production, or serve as an unhackable record of authenticity for the first and second-hand luxury markets, providing a weapon in the fight against counterfeiting.

WhichPLM will soon be covering the applications (practical and potential) of blockchain technologies in the retail industry in more detail.



THE SUPPLY-CHAIN TRANSPARENCY AND ANTI-COUNTERFEIT SOLUTION THAT PROVIDES PRODUCTS WITH A DIGITAL DNA.

With a patented system supported by blockchain technology, 1TrueID helps retailers, brands and manufacturers to enhance the customer's experience and trust.

The blockchain solution authenticates every step in the process from design-to-consumer including a products identity, origin, and the story or traceability of materials to finished products during and after the process of retailing, providing a unique experience and voice.

www.1trueid.com

ANDROID APP ON Google play

Download on the App Store

Retail Blockchain Consortium

RETAIL BLOCKCHAIN CONSORTIUM

The Retail Blockchain Consortium (RBC) explores and advances the usage of Distributed Ledger Technologies (DLT) within the retail and B2B value chain.

MEMBERSHIP BENEFITS

- **Development of pilot projects (proof-of-concepts) and Industry Wide Standards**
- **Workshops and intensive educational and technical accredited courses run by experts**
- **Participation in members-only events and committees on Blockchain applications within the retail value chain**
- **Opportunity to lead working groups, focused on your business challenges**
- **Helping to drive CSR and improve the environment, through the relevant use of Blockchain**
- **Access to the latest academic retail and B2B focused research on Blockchain from the world's leading universities**

FOR MORE GO TO
www.retailblockchainconsortium.org

contactus@retailblockchainconsortium.com

BILL OF LABOUR (BOL)

Two key components are needed to turn an idea into a physical product: materials, and human or robotic labour.

The power to understand the aggregate cost of materials – and even to run hypothetical costing scenarios where one or more fabrics, trims, or components are changed and the impact on the cost of the product is calculated - is part of almost every modern PLM solution. So, for the most part, designers and merchandisers can have clear visibility into the financial implications of their material choices.

The same cannot be said for labour. In the mass market, the manufacturing cost of a product is often left to the last minute and worked out via a process of negotiation between customer and factory, or customer and intermediary agent. Only rarely do brands and retailers have the right technologies and processes in place to allow them to accurately predict the labour portion of their overall product before soliciting quotations – much less understand how individual cutting, sewing, handling, and packaging operations contribute to that total cost. This is in spite of the fact that a small number of solutions that solve this precise problem have existed for many years. The most common of these, General Sewing Data (or GSD) is both a software solution and a road-tested library of scientific measurements of the time and cost of different manual and mechanised manufacturing tasks – down to the motions of the hand.

These solutions are already relied on by some of the world's biggest brands to perform what we call 'synthetic costing' of labour. Using GSD or an alternative, a brand can accurately quantify the time and cost of the labour portion of their products, using standardised values that have been certified by an independent body such as the ILA (International Labour Authority) and that are compliant with the Geneva Convention. In practice, this means that manufacturing is no longer a black hole of visibility, and it provides brands and retailers with an accurate, unbiased starting point for negotiation.

As compelling a value proposition as that seems, though, synthetic costing and other Bill of Labour solutions are not yet fully mainstream – although we expect this to change very soon because of two major drivers: constricting profit margins, and consumer appetites for ethical sourcing and manufacturing. Where previously corporate social responsibility was primarily a matter of minimising risk, now regulations like the Modern Slavery Act, coupled with the rise of ethical and eco-conscious mainstream consumers, have shifted the conversation towards a more proactive approach to truly knowing how – not just where – products are made.

COLOUR MANAGEMENT

The science of colour is not easy to understand, even though it underpins one of the major characteristics of a finished product: the way it looks.

When it comes to selecting the colour or colours of a garment, designers and technical teams will specify a target colour (typically carried over from a previous season, or selected from a colour provider's latest library) and then manufacturers will attempt to match it through a complex dyeing and curing process that varies in how technically advanced it is depending on the manufacturer's expertise.

Those attempts become the numerous lab dip rounds that a typical product undergoes, with the commissioning brand usually returning the sample swatch because it does not look as expected.

The difficulty with these multiple rounds of colour approvals is that communication between the brand or retailer and their supplier is typically based on a subjective evaluation of the accuracy of the colour sample. Judging the colour by eye, product teams may reject a sample as being "too red," or conversely "not red enough" – a comment which the supplier responsible for dyeing will then need to interpret and translate into a new colour mix that they hope will land closer to the original intent.

Digital colour management, as the name suggests, is designed to remove the subjectivity and ambiguity from that process, using a combination of software and hardware.

Spectrophotometers are handheld devices used to scientifically measure the spectral curve of a coloured material, providing an accurate reading of how closely a sample swatch matches the original reference colour.

From a software point of view, a small number of PLM solutions have added support for digital colour approvals, with links to the material library and colour palettes already stored in-solution. Recently, independent digital colour management platforms have emerged, offering API-level integration to PLM and other solutions, and promising a way to bring the science of colour into the product lifecycle without requiring a brand to hire dedicated colourists.

"Technology promises to bring the science of colour into the product lifecycle."

It's easy to see how this kind of objective evaluation can improve speed to market, since even a single round of lab dips and approvals per product can shave weeks off total cycle time. And similarly, a greater level of colour accuracy that can carry over between PLM, 2D CAD, 3D CAD, and other solutions will be key to a comprehensive digital transformation strategy.

"DIGITAL COLOUR APPROVALS REMOVE SUBJECTIVITY AND AMBIGUITY FROM THE PROCESS"

COMPLIANCE

For many years, social responsibility was seen as a secondary concern for many industries. Over time, though, each of them – from pharmaceuticals to food and beverage – faced an awakening, when their role in harming the environment, perpetuating inequality, or exploiting vulnerable people was made uncomfortably clear. Inevitably, regulations followed public outcry, and these industries began to exert much greater control over their supply chains to claw back lost revenue and brand loyalty, minimise risk, and reposition themselves as environmentally and ethically conscious companies in step with consumer expectations.

The fashion industry is currently going through this same process, but in many ways the pressures are more acute than they were for almost any other industry.

It's no secret that fashion has relied on an offshoring model almost exclusively for the last few decades. It's a matter of simple macroeconomics that societies willing to pay the right price for clothes are not societies where people are willing to work for wages that make those prices sustainable for a company wishing to make any kind of margin. This is why clothing, footwear, and accessories have tended to be designed in Western markets and manufactured overseas in manufacturing hubs like China, India, Bangladesh, Vietnam and, recently, a scattering of North African countries. In these places, wages are low, opportunities are scarce, and regulations governing human rights are lax.

"The pressures on fashion are more acute than in almost any other industry."

The offshoring paradigm has been scrutinised by governments and consumers for some time now, and everyone remembers the "sweatshop" era, where high-profile brands had their reputations threatened when it emerged their products were being made by underpaid, underage workers. These labour-related concerns are still prevalent in fashion, though, coming to a head in the wake of the Rana Plaza factory collapse in 2013, which killed more than a thousand people, and brought even more multinational names into the headlines in an extremely negative context.

Recently, the subject of ethical and environmental compliance has become even hotter, as fast fashion retailers were hauled before British parliament to make a moral case for selling low-quality, disposable products with a high human and climate cost, for a few pounds. This has mirrored a much stronger commitment from consumers to engage only with brands they see as ethically sound, and environmentally sustainable – and brands that can demonstrate their credentials in both areas.

This is where technology comes in. By using a corporate social responsibility (CSR) module in their PLM solution, or by integrating the guidelines and tools provided by not-for-profit initiatives into their supplier management processes, brands and retailers can make confident statements about how, where, and by whom their products are really made.

Now a key strategic objective for essentially all apparel and retail companies, regulatory compliance and corporate social responsibility are attracting significant interest and investment from technology vendors. Expect more solutions – and even more independent bodies - to reach the market very soon.

"Technology allows brands and retailers to make confident statements about how, where, and by whom their products are made."

DAM / PIM

Beyond PLM, there are two other solutions that focus on consolidating and communicating essential product data: Digital Asset Management, and Product Information Management.

Although both acronyms have been around in the industry longer than PLM has, there is still confusion in the market as to what, exactly, constitutes a DAM solution, and how a PIM platform differs from PLM.

In brief, PIM solutions collect and centralise information at the finished product level, rather than in design and development, creating a detailed record of all essential data needed to take that product to market across different distribution channels. Unlike PLM, which is primarily a design, development, and sourcing tool (at least until it is integrated at the enterprise level and becomes a hub for other solutions) a PIM platform is intended to help a retailer populate their print catalogues, financial systems, marketing campaigns, and partner channels with accurate product information.

DAM, on the other hand, is concerned with the management of digital assets – whether these are images, videos, documents, 3D objects, or almost any other file format. As well as providing a platform for archiving these digital assets, a DAM engine will also handle format conversions and compression on the fly – serving up appropriate resolutions of images, or 2D perspectives on a 3D asset, to be used by marketing and creative teams.

Crucially, DAM solutions provide a way for essentially any asset to be stored in a centralised location, complete with full metadata, and made available to any other solution – including PLM – in a brand or retailer's digital ecosystem, without the need to alter or check out the original file.

"PIM solutions centralise information about a finished product. DAM solutions are concerned with the management of digital assets."

In some instances, PLM vendors will also offer some level of DAM or PIM functionality, but typically these fall short of the full capabilities provided by dedicated solutions. And as brands and retailers pursue their digital transformation journeys further, the ability to store critical digital assets in a single location, available for use in the right file-size and the right format for almost any purpose, will become even more important.

DIGITAL PRINTING

Most of the time, technological progress in the retail, footwear, and apparel industry is steady and iterative. New versions of existing solutions promise greater efficiency and cost savings, or entirely new solutions propose a novel way of tackling a long-standing problem, or digitising one of the few remaining analogue links in the value chain. True generational leaps are few and far between.

At WhichPLM, we see digital printing as one of these rare jumps forward for the industry, because it perfects and commercialises a technology that has the potential to completely transform the way we think about product development, sourcing, and manufacturing.

To be clear, the potential for printing patterns, colours, and artwork onto short runs of materials for sampling purposes has existed for some time. Until recently, though, it has only been possible at a small scale, and on a very limited number of material substrates. In the last two years, the technology has advanced enough that printing directly onto greige or plain fabrics, natural materials and synthetics, or even thread, is now possible in large volumes – in a matter of days rather than weeks.

This has applications that go far beyond sample creation, although obviously the same digital printers can also be used to create samples in record time. In a market where speed is everything, the ability to shave weeks or even months off the time from initial idea to finished prototype – and to complete that process locally or even in-house – will offer a huge advantage to the brands and retailers who adopt digital printing into their workflows.

By the same token, digital printing opens the door to a new generation of fast fashion and personalisation – a clear antidote to the high-volume, low-cost, disposable model that has brought the fashion industry into the regulatory spotlight in 2018/19. By offering a way to produce finished materials in-house, at almost any volume, with inks that can bind to any material substrate without an additional curing process, digital printing has the potential to completely up-end the way we produce and buy clothing.

“True generational leaps are few and far between, but we believe digital printing has the potential to completely transform the industry.”

If this all sounds hyperbolic, consider that perhaps the world’s biggest retailer, Amazon, has invested heavily in the latest generation of digital printers for its private label brands – buying not just the machines themselves, but significant shares in one of the most prominent companies operating in the space.

Expect considerable activity in digital printing in the very near future.

Kornit
Avalanche POLY PRO

CHANGE THE GAME, WIN IN ALL FRONTS!

- Prevents dye-migration
- Preserves the original fabric properties
- Meets the sports industry's durability standards
- No design limits
- Profitable from the first print

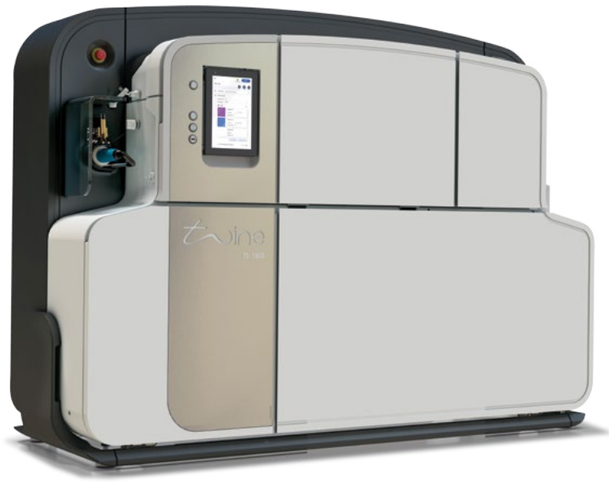
NEOPOLY TECHNOLOGY

The smartest printing solution for polyester

Kornit
Digital
bonding
matters

www.kornit.com

Say *Hello* to Digital Thread Dyeing



REVOLUTIONARY, CLEAN, IN-HOUSE & ON-DEMAND

TS 1800 Digital Thread Dyeing System, based on Twine's DST™ technology, dyes thread in millions of colors immediately and on demand. On a single spool or multiple spools, you will be able to produce the correct color at the exact length you need.

- FAST TIME TO MARKET
- REDUCED LOGISTICS HASSLE
- MINIMAL INFRA-STRUCTURE
- VIRTUAL INVENTORY
- SUSTAINABLE, WATERLESS TECHNOLOGY
- REAL PERSONALIZATION

twine
a single thread of color

www.twine-s.com

MATERIALS

Distinct from the materials management and sourcing modules of PLM solutions (which operate on the assumption that brands are working with a small number of curated suppliers) we have now begun to see the emergence of dedicated, solution-agnostic material platforms that serve as a channel between a much broader range of material suppliers and their potential brand and retail customers.

One of a vanishing number of truly analogue links in the product lifecycle, material sourcing is still typically done by hand. Creative teams choose from physical swatch books and place orders for significant quantities of material at an agreed price – all of which must then be manually entered into inventory, made effective use of, and uploaded into the material library housed in PLM by hand.

Material platforms offer a truly digital alternative to this process. In place of physical swatch books, these solutions provide a single digital channel that brands and retailers can use to source everything from simple cottons and leathers to complex bonded materials and performance fabrics.

Every material is accompanied by an image and an exhaustive set of metadata, including substrate information, testing certificates, minimum order quantities, price per yard, and much more. This provides sourcing teams with much greater confidence in the cost and quality implications of their decisions. At the same time, an independent material platform can eliminate time-consuming manual work by integrating with PLM, and even with 3D solutions, provided a material carries the large number of data points needed for accurate fabric simulation.

By replacing a traditionally manual process with a digital alternative, material platforms also have the potential to improve speed to market, positively impact sustainability by eliminating material waste, and provide full transparency and accountability at a critical link in the supply chain.

And while the benefits of digitalising this process are obvious for brands and retailers, material platforms also have considerable value potential for the material suppliers themselves. Traditionally confined to selling their latest materials to either existing customers or the wider market via agents, material platforms provide suppliers with a storefront to advertise the full scope of their offer.

MANUFACTURING (CAM)

CAM (Computer Aided Manufacturing) picks up where CAD ends, with the transformation of creative designs into technical, manufacturable products. Both software and hardware fall under the CAM umbrella, with a small but successful niche of pattern engineering and marker making solutions joining long-established platforms used industry-wide for cut order planning and optimisation.

CAM hardware normally refers to numerically controlled spreading, plotting, and cutting machines, which use the lay plan output of patternmaking solutions to plot and optimise the path of the knife that will cut pattern pieces from the chosen material. Tied to the task of actually cutting material, CAM-related software may also pass information like annotations, the location of notches and drill holes, and other variables to the cutting machine operator.

CAM hardware can also be further specialised, with dedicated platforms for denim, leather, and other material types.

This has been a captive market for many years, with two major vendors controlling much of the supply chain when it comes to hardware. Unsurprisingly, these vendors also offer PLM and other software, with strong integrations and standardised file formats that can deliver a completely digital workflow from initial inspiration to manufacture.

“CAM has been a captive market for many years, covering software and hardware.”

New innovations in CAM include the use of machine learning to provide scientific estimates of material consumption and yield, and the ongoing transformation of traditional manufacturing facilities into smart, connected factories – providing brands and retailers with new levels of real-time insight into the production process.

ON ON ON

DEMAND TIME TOP

PLAN

DESIGN

DEVELOP

SOURCE

PRODUCE

SELL

TRACK

Innovation to Empower You to Keep Up with What's Now Trending.

Gerber Technology empowers their customers to move with the speed and agility they need to meet market challenges by enabling on-demand and made-to-measure production, digital printing, mass customization and mass production through their unique end-to-end solution.

Gerber is delivering the latest innovation to their customers with a fully-integrated suite of cutting-edge hardware and software solutions that increase creativity, productivity and efficiency. The fully-connected suite of solutions, which features the latest versions of YuniquePLM®, AccuMark®, AccuMark 3D, AccuNest™ and AccuPlan™, seamlessly passes data to Industry 4.0 enabled GERBERspreader™ and GERBERcutter® systems maximizing productivity, quality, sustainability and speed.

End-to-End Is Just The Beginning.
gerbertechnology.com/digital-solutions/

GERBER TECHNOLOGY

LECTRA

MADE 4.0

CUSTOMIZATION

FASHION ON DEMAND BY LECTRA

INTRODUCING FASHION'S FIRST-EVER END-TO-END PERSONALIZATION SOLUTION

Fashion On Demand by Lectra automates the supply chain, gives you the speed and agility to produce customized clothing. Whether it's made-to-measure or customization, unlock the true power of personalization.

Lectra.com

PLANNING

Planning is an all-encompassing term that refers to the process of choosing which products to bring to market, in what combination, and at what price. Under that umbrella sit several different approaches to planning: financial, merchandise, placeholder, bottom-up, top-down, and a host of others.

All of these, though, share the same goal: maximising the brand or retailer's return on investment by selling as many products as possible at full price, and minimising losses from markdowns and stock-outs.

Until recently, some PLM vendors would have argued that their solutions offered comprehensive planning functionality, but the conversation has now shifted. Instead, PLM providers typically develop their planning modules enough to cater to their customers' core needs, and offer integration to one or more dedicated, third-party planning tools for users who need to go a step further.

In practice, the core planning functionality offered in many PLM solutions is often sufficient for small-to-medium businesses that develop their ranges and assortments based on a relatively narrow set of information and requirements. These companies may work backwards from a collection-level or even SKU-level financial target, they may build a range based on the availability of materials, or they might start with previous retail performance and later turn placeholders into products based on category-specific sales from a previous season.

For larger companies, going further means adopting a dynamic approach to planning – factoring in a wider range of market variables and insights to respond as rapidly as possible to changes in their target markets. More advanced planning tools that cater to these companies will offer algorithm-driven planning and even elements of machine learning that allow brands and retailers to build complex planning models and make confident predictions about likely market performance.

"PLM solutions offer core planning functionality, as well as integration to dedicated, third party planning tools."

SCANNING

As the retail, footwear, and apparel industry moves ever closer towards digital transformation, it's becoming more important than ever for businesses to build strong links between the digital and physical.

For things that exist digitally first (such as products designed in 2D or 3D CAD, then turned into prototypes) the workflow is already well-established. But there are an increasing number of scenarios where the opposite needs to happen: a physical thing has to be replicated digitally. This is the essence of digitalisation.

The most obvious example – and the area where we have seen perhaps the most activity recently – is material scanning. Like digital printing, this is a technology that has existed for many years, but has only recently reached a level of speed, usability, and performance that has translated into mass market adoption.

At a very high level, material scanners use an array of sensors to capture all the important characteristics of a piece of material, allowing users to generate accurate, high-resolution textures that can populate a PLM material library and be imported seamlessly into a 3D CAD solution. These scanners also come with an associated technology suite that allows for intelligent tiling (creating repeating textures from small samples), recolouring, and other editing to be performed on the material once it has been imported.

At the moment, the material scanning market is seeing significant investment and interest, and various companies are tackling the challenge of creating an open, standardised file format that allows the full range of material information to be captured and used in multiple different applications.

But scanning is not confined to materials, and many companies are pursuing body-scanning (either the entire body, or a specific part) using either complex scanning hardware, or even a composite of several images taken using an off-the-shelf smartphone. Early versions of these scanners have been used for decades to create digital avatars that reflect key demographics, and virtual mannequins that can be used for size grading and other purposes.

Whatever they are digitising, the output of these scanners should be imported into PLM – preferably via integration and a standardised, interoperable file format. We expect to see new partnerships established between scanning providers, 3D solution developers, and PLM vendors in the very near future.

SHOP FLOOR

Beyond basic supplier management and quality auditing processes, brands and retailers have historically had very limited insight into the manufacturing stage of their product lifecycles while that manufacturing is in progress. Agents and factory managers have always collected detailed information about their human resources and hardware usage for performance analysis, monitoring, and maintenance purposes, but that data has seldom been shared with their retail and brand customers. Instead, retailers and brands have had to satisfy themselves with having little genuine visibility and accountability between the point their order is accepted and the time finished products emerge from the factory (colloquially known as the "shop floor").

While this has never been a desirable state of affairs, the lack of insight that a commissioning brand has into the progress of their production orders has become especially problematic as the fashion and footwear industry has placed a greater and greater emphasis on speed and transparency. In today's market, coordination is everything, and businesses that have managed to wring every last piece of efficiency out of their own internal processes are now looking to take control of manufacturing.

To solve these and other problems, fashion – like other sectors - is now exploring the potential of Industry 4.0, Smart Manufacturing, and Industrial Internet of Things (IoT) technologies to shine a spotlight on production processes in real-time. Depending on where you are in the world, you may have been more likely to hear one of those labels than the others (Smart Manufacturing is used in the USA, while Industry 4.0 is more popular in Europe,) but in essence all of them are referring to the same thing: connecting machinery, sensors, and other nodes to the internet, to create a new era of cyber-physical interfaces in factories.

And it's on top of that vast, growing network of connected machinery and sensors that a new generation of shop floor control solutions are being built – making intelligence that used to be reserved to factory supervisors available to customers.

"See what's being batched, cut, or sewn as it happens."

Equipped with this new level of visibility, brands and retailers will be able to better orchestrate their supply chains, increase the odds of on-time delivery, improve stock control, reduce risk, and respond quickly to changing market conditions by shifting production flows in near-real-time.

Crucially, the relative affordability of IoT sensors and conversion kits for existing machinery means that this kind of insight will be available to small companies as well as the larger organisations who have previously been the only ones capable of controlling their production processes by dint of the sheer volume of their orders.

Of course, the new generation of Shop Floor Control solutions will put a huge amount of power in retail and brand teams' hands when they are integrated with PLM. Rather than simply tracking production orders on an optimistic calendar when they are approved, and then checking them off when they're loaded onto a boat, it should now be possible to see every step of the sourcing, batching, cutting, sewing, and finishing process as it happens.

STORYBOARDS

Fashion is a visual industry. The people who work in fashion are, for the most part, visually-geared people. So, while office workers in the apparel industry, like those in almost every other industry, are spending more and more time working with desktop computers and mobile devices, many of them still have a soft spot for physical storyboards that allow them to organise collections, ranges, themes and ideas in a tactile, visual way.

Traditionally, storyboards have been exactly what they sound like: large-format physical boards made of cork, cushioned fabric, or a similar material. They often take up entire walls in the offices of designers, buyers, merchandisers, and other creative teams, and are home to material swatches, magazine clippings, colour chips, and anything else it takes to bring a vision to life.

For many design teams, who today work remotely with satellite offices and suppliers on the other side of the world, physical storyboards are more than just a convenient place to consolidate inspiration, though; they represent the only chance they have of making the essentials of their products feel tangible before a physical prototype is made.

Using physical storyboards, though, a lot of vital information can be easily lost or left undocumented. At best, this information is only brought into PLM or other design and development solutions days after the fact through time-consuming and error-prone manual data entry. With no centralised data repository or change log, it's all but impossible to retrieve and reuse information, and it only takes one person to accidentally misplace a material swatch or misinterpret a hand-scribbled note to cause serious confusion further down the line. Perhaps most importantly, beyond snapping and sending a photograph, there is no method of extending access to physical boards beyond the walls of a single headquarters, leaving satellite offices and suppliers working from second-hand insights for the purposes of collaboration and co-design.

So, as part of the ongoing digitalisation process of our industry, physical storyboards are being steadily replaced by digital alternatives. From bringing in and manipulating images and other elements from almost any source, to conducting collaborative review sessions and tracking comments, the best of these digital boards neatly address every concern that plagues their physical counterparts. They also provide a foundation for design, development, and decision-making processes that are fit for the digital future.

As with every solution in this section, digital storyboards will benefit considerably from being tightly integrated with PLM, allowing designers and developers to organise, discuss, and decide in an intuitive, visual environment before using their finished concepts to create styles directly in their PLM solution.

Whether they're packaged as part of an extended PLM environment, or sold independently, digital storyboards offer real value for companies whose creative teams are spread across different locations, or businesses who co-create with their key suppliers.

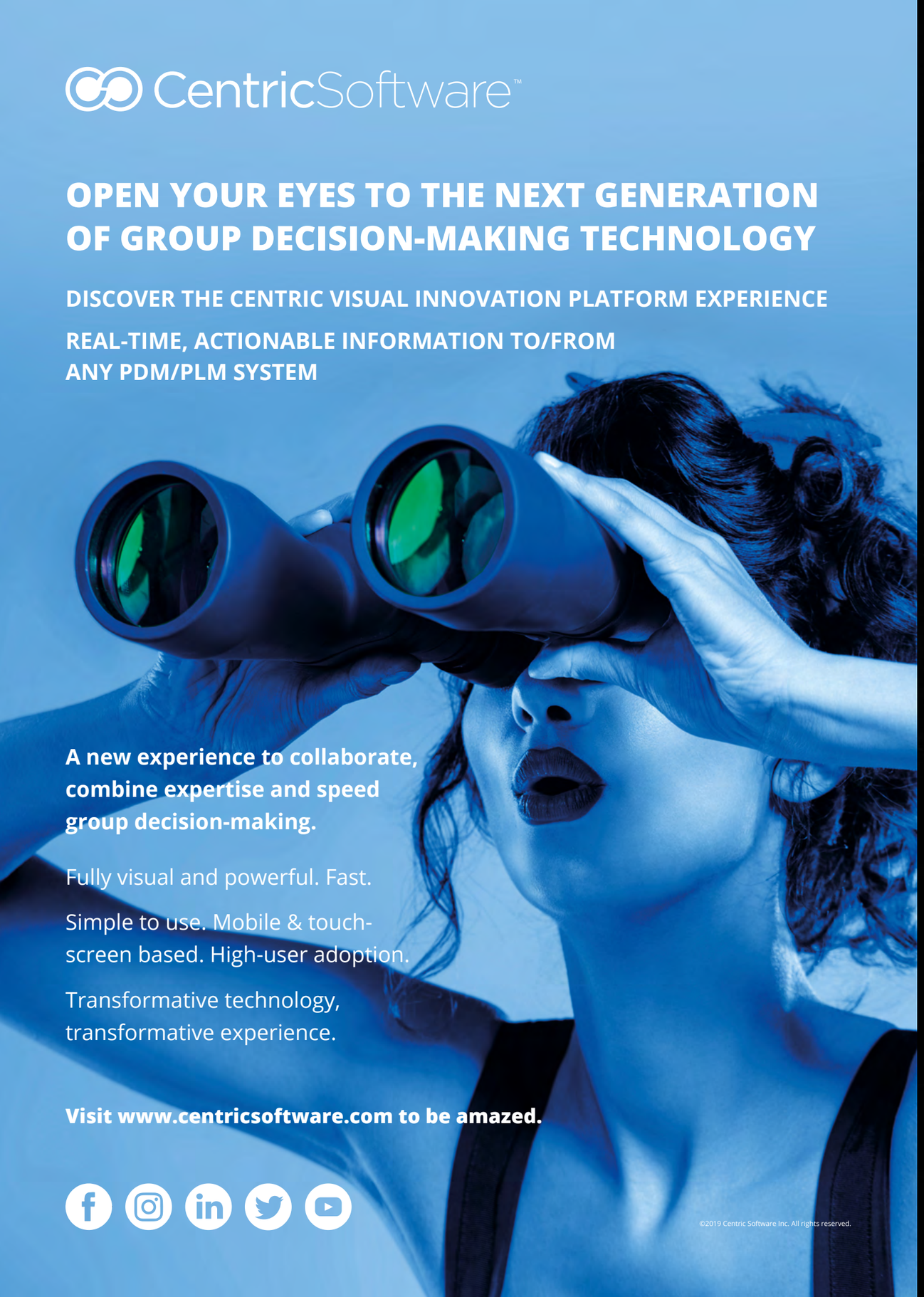
"THE BEST DIGITAL STORYBOARDS PROVIDE A FOUNDATION FOR COLLABORATIVE DESIGN AND DEVELOPMENT."

CentricSoftware™

OPEN YOUR EYES TO THE NEXT GENERATION OF GROUP DECISION-MAKING TECHNOLOGY

DISCOVER THE CENTRIC VISUAL INNOVATION PLATFORM EXPERIENCE

REAL-TIME, ACTIONABLE INFORMATION TO/FROM ANY PDM/PLM SYSTEM



A new experience to collaborate, combine expertise and speed group decision-making.

Fully visual and powerful. Fast.

Simple to use. Mobile & touch-screen based. High-user adoption.

Transformative technology, transformative experience.

Visit www.centricsoftware.com to be amazed.

ptc® flexplm® canvas

CAPTURE. SHARE. COLLABORATE.

A central place for your ideas, clippings, and creative concepts. Capture any creative asset: Photos, sketches, video, files, and even social media feeds. Launch product creation directly from your ideas.

Share digital storyboards with internal teams and key suppliers to align, iterate, and innovate.

Work visually, virtually. Gather your designers and developers, and make better decisions, faster.

Discover a new way of working with FlexPLM Canvas - now part of the PTC Retail Innovation Platform.

TRAINING

As this publication demonstrates, the sheer range of digital solutions that cater to the retail, footwear, and apparel industry can be intimidating. And although they might be considered the "essentials" of a digital ecosystem, PLM and CAD both remain complex systems with huge reservoirs of functionality that can be difficult for inexperienced users to get to grips with.

As a result, training and onboarding remain key stages of any technology implementation, despite admirable efforts on the part of technology vendors to create intuitive, approachable user experiences.

Until recently, in the case of PLM, that training would have normally been handled by the vendor's professional services team, or by a carefully-chosen strategic partner who was familiar with the extensive customisation work that had been performed on the solution during implementation.

But as the software itself has become more standardised and user-configurable (culminating in the release of the industry's first true multi-tenant PLM solution this year) the time and cost involved in training and user testing has fallen. Indeed, in some instances, where a vendor has consciously targeted the small-to-medium volume market, where hands-on training with small numbers of users is unsustainable, training has been automated using pre-recorded video or in-solution educational cards.

"Training and onboarding remain key stages of any technology implementation."

Nevertheless, user adoption remains critical for any new technology – especially in the case of digital transformation initiatives, where multiple different solutions are being consolidated or integrated at once. At the same time, technology vendors have found their services teams being increasingly stretched by the industry's move from small quantities of large, long-running projects towards instant-on SaaS deployments in much larger volume.

To fill this void, independent implementation consultants and dedicated training providers are now preparing to educate end users and executives alike on not just individual digital solutions, but also the value and the practicalities of creating a complete digital ecosystem.

TREND

Success in the fashion industry relies on a brand or retailer being able to gauge market conditions, predict upcoming trends, analyse the competition, and weave all those different strands into products and collections that will resonate with customers when they reach the market weeks or months later.

Given its central importance to the business of fashion, trend forecasting is one of our industry's most complex and far-reaching processes. From silhouettes to catwalk colours, materials to textures, trend forecasting needs to take account of every aspect of garment creation, as well as factoring in indicators and variables from across the worlds of sport, music, cinema, and street style to translate shared concepts into their own unique ideas.

Because of its sheer scope, trend forecasting has always been a blend of art and science. Discovering an untapped market might rely on detailed social demographic analysis, while identifying a way to capitalise on an unexpected new trend (such as the sudden rise of so-called "ugly sneakers") without sacrificing a brand's DNA requires real creativity.

As the pace of the retail industry has increased, though, and competition has become even more fierce, brands and retailers have become more comfortable with looking outside their own walls for trend insights and advice. There is now a thriving industry of trend services and bureaus who provide companies with both macro-level intelligence (allowing them to make market-driven decisions) and extremely granular insights and predictions that can serve as fuel for their own creative fires. These services might be long-established international institutions with encyclopaedic runway knowledge, or technology-driven startups with a rather different approach.

Today, machine learning and other A.I technologies are playing an increasingly important role in trend forecasting. A computer model, after all, can evaluate huge data sets and real-time feeds in a way that no human trend analyst can, discovering new opportunities that might otherwise have gone undetected.

"Trend forecasting has always been a blend of art and science."

However a trend service sources their information, though, it is essential that they integrate with PLM, allowing design and development teams instant access to the latest recommendations at the moment they begin creating new styles. We expect to see more partnerships announced in this area very soon, including the kind of broad licensing agreements that will allow PLM vendors to pre-populate their deployments with subscriptions to the most relevant trend services.

VOC

The counterpoint to trend forecasting, Voice of the Customer (or VoC) analysis involves canvasing for, interpreting, and using customer feedback – either as a way of gauging the success of a product beyond the sales level, or, with the help of the raft of new digital solutions included in this publication, as a tool for market-testing products that may not yet have reached the prototype stage. Opinions on anything from product performance to colour, price to material, can be collected this way.

Traditionally, this kind of feedback was collected by brands via customer surveys, either conducted in-store (to better understand the forces shaping buying behaviour) or post-sale as part of ongoing customer engagement and loyalty programs. Larger surveys would typically be contracted out, or more segmented data sets might be purchased from companies dedicated to tracking consumer behaviour.

In the last few years, VoC tools and approaches have changed considerably. Where once brands and retailers were forced to rely on either extremely broad data, or the limited information they were able to glean from existing customers, dedicated VoC platforms can now reach huge audiences at an incredibly granular level. And while a brand might be able to reach an audience of thousands with its own engagement initiatives, a VoC platform could provide access to millions.

For example, a brand may be looking to test a new collection (or even a new product category) with a specific demographic before committing to production. Using a VoC platform and a selection of 3D digital prototypes, that brand could potentially reach more than a million shoppers in and around its target demographic and either validate or challenge their new choices quickly and easily.

With user figures like these, VoC platform providers also have another powerful tool that they can offer to retailers and brands: predictive market testing models. Using historic sales data, demographic profiling of their existing customers and the product specific outputs from a VoC platform, VoC solutions can utilize machine learning to build algorithms that predict actual market demand for any given new product – offering near real-time demand forecasting before orders are placed.

As with every other solution in this section of the publication, VoC platforms should be key candidates for integration with PLM, offering a pathway from initial design to market testing in the early stages, or providing a way to quickly and easily incorporate customer feedback into the next design cycle.

“Retailers once had to rely on very broad or limited data, but they can now reach huge audiences at a granular level.”

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 2018/19.

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 were carried through to our 6th and 7th Editions, and remain in force for this 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. (Our definition of what constitutes modern RFA PLM is set out in full in the glossary at the back of this 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** – with more information, and a growing number of published Evaluations, available on our website – 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.

Readers of previous Annual Reviews will notice that this year's publication continues the detailed format used in those print reports. 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", since this information – whether financial or otherwise - may be divulged to private parties, and may have been shared with WhichPLM under the proviso that it not be published.

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. These insights have always been exclusive to WhichPLM readers, and provide a unique perspective on the roadmaps, ethos and future direction of the market's biggest players.

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. This allows us to adhere to our goal of providing the most complete market intelligence without compromising customers' rights to secrecy.

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 2018/19 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, and the vast majority of vendors now accept our justifications for excluding particular customer names.

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. As always, we would caution all prospective customers to pay particular attention to the suitability of any vendor who, for example, refused to divulge the size of their R&D team or the composition of their global apparel resource pool.

Even today, when low-cost, low-risk subscriptions are beocming 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 – rather than focusing on today's deals and remaining guarded about the future – 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** – something several vendors have now chosen to do more than once.

NB: Adjacent to the vendor profiles that make up the remaining pages of this section are full-page advertisements provided by the vendors. WhichPLM does not control and is not responsible for the content of these advertisements.

aptos

Financial Year 2018/19

www.aptos.com

+ 5

NEW CUSTOMERS OF RFA PLM, INCLUDING:
CottonOn, Furla, Golden ABC, WP Lavori, Yamamay

159

OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2018/19

N/A

NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

6,360

TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

3,550

TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION

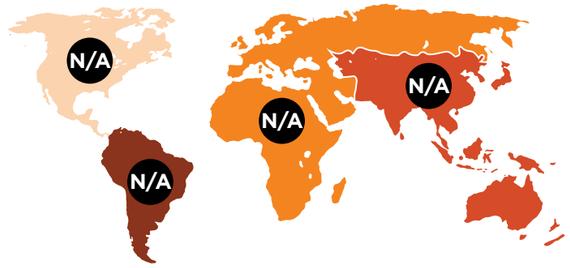
Licensing revenue: **N/A**

All maintenance revenue: **N/A**

Implementation & services revenue: **N/A**

R&D investment: **N/A**

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



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.

Aptos PLM provides complete collection management in one solution: digital design, collection development, 3D sampling, quality assurance and CSR, line planning and supplier collaboration. Latest advancements include:

- 3D sampling/prototyping through an integrated partner product: everyone involved in the process can visualize the style in 3D, add design notes and share comments until agreement on the final product is reached. Processes are more streamlined and sustainable, as no fabrics or manufacturing resources are engaged until the style is confirmed for production.
- Completed integration with the Aptos family of solutions: Aptos PLM integrates seamlessly with Aptos Planning (merchandise planning & assortment), Aptos SCM (supplier collaboration) and Aptos Merchandising (inventory management). Our experience with integrating the end-to-end merchandise lifecycle - design, planning and execution - is getting ever more traction in the market. Fast Fashion companies, for example, have an increased need for PLM and Assortment Planning integration. Retailers can test selected products on the market, capture customers' reactions to new styles and decide which products should be kept live. Ultimately, they can use this information to feed innovation and suppliers, enabling more effective collaboration processes.

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.

A number of trends are impacting the way companies design, plan and execute their assortments:

- Fast and "ultra-fast" fashion far beyond the concept of season: it requires visibility, orchestration and an agile approach to product development
- Verticalization, with many brands opening their own retail networks: They require tighter synergies between PLM and the retail planning realm in order to feed creativity with deeper market intelligence
- Digital transformation: many companies have digitized their information and are now looking to digitalize their processes, creating new efficiencies and value out of digitized data
- Convergence with 3D and augmented reality to be applied in the sampling/prototyping phase to reduce the amount of physical resources engaged at these stages and related costs
- Sustainability: attention to the environment has never been higher. To facilitate recycling, PLM systems' next frontier is to evolve to manage the lifecycle of a product until the garment is returned for re-use. Specifically, PLM systems should help monitor and quantify results of recycling and upcycling activities (e.g.: How many products are returned after use? How much can we recycle? What is the impact on the environment and the business?)

CentricSoftware™

Financial Year 2018/19

www.centricsoftware.com

67

NEW CUSTOMERS OF RFA PLM, INCLUDING:

Acushnet, Adeo, Adolfo Dominguez, Anta, APP Group, Belle, Bergans, Birkenstock, Bombas, Bueltel International Fashion Group, By Far Shoes, Camaïeu, Cape Union Mart, Christian Art Gifts, Coalision (Lolë), Creative Co-op, Dobotex, Domestic Converters, DZ Group, Fond Of, Four Hands, Gloria, Golden Goose Deluxe Brand, Goorin Brothers, Grupo Lunelli, Hazzys (Baoxiniao Group), Hirdaramani, Hopeshow, Hudson's Bay Company, Hush, Inter-Sun AS, International Trading Fashion & Apparel Supply, IPE Visionnaire, KJUS, La Chapelle, Lancy, Leyou / Great Family, Li Ning, Marcolin Eyewear (LVMH), Thélios Eyewear (LVMH), Loewe (LVMH), Macron, Mahco Outdoors, NafNaf, Naivee, New Era, Peak Performance, Rebel Athletic, Ricami NBM, Rothy's, Sacchetti Maglierie, Salvatore Ferragamo, Siplec / Leclerc, Swarovski, Tory Burch, Valcismon, Versace, vineyard vines, Volcom, VT Garment, Wacoal UK, Yuanshang Fashion (Sedate)

301

OVERALL NUMBER OF ACTIVE CUSTOMERS

of PLM within the RFA industry, excluding customers cited as new in 2018/19

96

NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

66,000

TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

N/A

TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

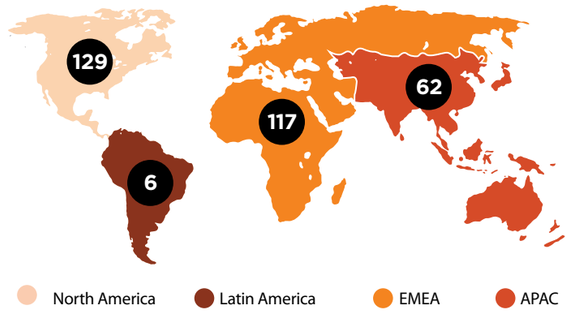
REVENUE & INVESTMENT INFORMATION

Implementation, licensing & maintenance 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 above.)



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

We are very pleased to announce the signing of our 300th PLM customer, firmly planting us as the market leader with more innovation partners and industry best practices than ever.

Recently unveiled innovations include the visual and collaborative Centric Visual Innovation Platform (CVIP) Digital Concept Board, a digital sandbox for creative collaboration and what-if scenarios for design, merchandising and production/sourcing teams, and also the CVIP Digital Buying Board, which streamlines buying decisions for retail, wholesale and e-commerce by aligning product and category teams, merchants, internal buyers and sales on a single, transformative platform. Centric released versions 6.5 and 6.6 of its flagship Centric 8 PLM solution, which focused on high-volume sourcing for retailers and 3D innovation, and also launched the first artificial intelligence-based PLM feature, Centric AI Image Search.

Centric built a presence in new regions, including Brazil, India, Sri Lanka, Turkey and South Korea for a truly global footprint. Meanwhile, Centric has expanded into new markets for its modern and mobile PLM solutions; multi-category retail, cosmetics and home décor. Centric's strategic partnership with Dassault Systèmes, announced in June 2018, creates new opportunities to accelerate the digital transformation of Centric customers using the combined expertise of both companies.

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 pressures affecting fashion and apparel remain similar to last year's trends but are more acute. The pace set by fast fashion puts the squeeze on supply chains, product development and the entire product lifecycle. Sustainability and the circular economy are prominent concerns impacting consumer goods and will affect fashion more and more.

PLM in fashion and apparel is hitting a tipping point. Many companies are very comfortable with PLM as an execution tool and are starting to use PLM to drive strategy and innovation. PLM is no longer optional but has become a core foundation technology, even for emerging brands. This is especially true for digitally native companies.

The market is pushing to digitally transform areas of the product lifecycle outside those traditionally covered by PLM. In response, Centric Software's Centric Visual Innovation Platform (Centric VIP) collection of digital touchscreen boards transforms collaborative experiences like design meetings and buying sessions with a visual, digital, social media-like experience that drives group decision-making via individual contributions in real time.

Building a true 3D workflow by integrating 3D technology with PLM is crucial. Centric continues to innovate modules and mobile apps that enable streamlined digital sampling, 3D modeling and 3D visualization.

FastReact

Financial Year 2018/19

www.fastreact.com

+ 2

NEW CUSTOMERS OF RFA PLM

47

OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2018/19

15

NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

3,276

TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

636

TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION

Licensing revenue:
$3-4 million

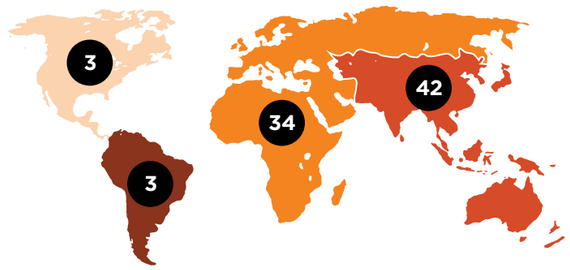
All maintenance revenue:
$3-4 million

Implementation & services revenue:
$3-4 million

R&D investment:
$0-2 million

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

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



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.

Part of Coats Digital, we offer expertise and solutions which support an agile, transparent, efficient and integrated supply chain, from product development and sourcing (Vision^{ng} PLM), to time-cost benchmarking (GSD), automated cost benchmarking and negotiation (intello3C), optimisation of fabric buying (intellobuy) and utilisation (intellocut), and market leading planning solutions for garment manufacturers and fabric mills (Evolve/Align). Examples of advancements in Vision^{ng} PLM over the last year include:

- Costings: Further enhancements to costing by option (e.g. colour and size), material costing and the extension of copy costing functionality to improve accuracy and UX.
- Techpack, Fit and Seal: The addition of an image annotation tool and multiple enhancements to UX and workflow including fit log comparison, creation of a revised size spec from the fit log and copying size specs between products.
- Supplier Collaboration and Sample Management: Drag and drop, 'what if' planning of high-level demand (forecast and confirmed orders) and supplier capacity, has been further extended to include sample finished goods and materials. As well as the ability to share scenarios and comments with T1/T2 suppliers, solution includes further enhancement to tracking and automatic updates of Material, Sample and Finished good order status.
- Languages: Latest additions to existing language packs include Japanese and Vietnamese.

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.

There is a growing recognition that responding to increasingly savvy consumer demands for instant personalisation without a financial, social or environmental cost, will require end-to-end digitisation of the supply chain to drive streamlined processes and business insights, and that the biggest gains in speed and efficiency lie in upstream collaboration. While consumer and market insights will continue to provide direction and focus, increasingly winning where it matters means digitising to support key internal processes and upstream collaboration.

What does this mean in practice for our industry? It means a digital ecosystem of intelligent, connected, best-in-class, solutions (increasingly leveraging AI and Machine Learning), supplemented with specialist industry best practice expertise, to drive transformative change and the seamless sharing of data in a truly collaborative, agile, transparent and efficient supply chain. From the internationally recognised standard for time-cost benchmarking (GSD) to targeted product development and sourcing driven by critical path and supplier collaboration (Vision^{ng}) and AI driven automated cost benchmarking and negotiation (intello3C) , feeding suppliers with the information they need to optimise fabric buying (intellobuy) and utilisation (intellocut), and support fast, accurate and efficient production planning for RFA manufacturers (Evolve) and fabric mills (Align).

GERBER TECHNOLOGY

Financial Year 2018/19

www.gerbertechnology.com

21

NEW CUSTOMERS OF RFA PLM, INCLUDING:
Aim Apparel, Fusalp, Happypunt

258

OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2018/19

65

NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

26,550

TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

14,750

TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION

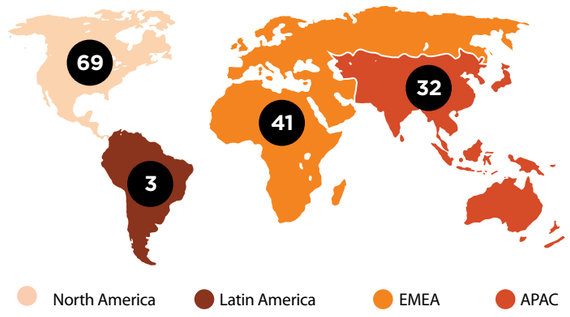
Licensing revenue: **N/A**

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 above.)



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.

YuniquePLM® continues to focus on our ability to easily provide a cloud-based PLM solution to a client of any size. Last year we released well over 150+ new features to YuniquePLM by providing continuous free updates to our software every 6-8 weeks. This allows our cloud customers to provide feedback and allows us to quickly create new enhancements or add to existing functions. We have also heavily focused on user experience by releasing a new, easy-to-use UI to the application, giving users more control over their data and allowing them to maximize the information on the screen. New customers are also able to learn how to use our PLM software through interactive user guides built into the application.

Using our robust set of APIs, our software and machinery connect seamlessly to provide a truly integrated digital solution that only Gerber can offer. YuniquePLM offers new enhancements that allow for more seamless connection. The integration makes it easy for Pattern Makers in AccuMark® and AccuMark 3D to manage their data within a virtual or physical sample request directly in PLM. YuniquePLM now allows users to view and make annotations directly on a 3D Sample within a browser without any additional 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.

As the need for on-demand and customized products grows, companies need to be able to move with agility and speed in order to remain competitive. This means that they must look to integrate more technological innovations into their workflow that will help reduce time to market without sacrificing the quality of the final product. In order to meet the demands of today's consumers, brands, retailers and manufacturers must look to streamline their workflow through fully integrated processes that enable data to be passed seamlessly.

At Gerber, we continue to focus on our ability to integrate with a wide variety of tools and further enhance our own software and hardware integrations. Not only do we provide our customers with the ability to save on redundant data entry but we also offer the ability to work with other software solutions, such as TrueFit. Our APIs allow our software applications to easily integrate with other software applications and ERP systems that our customers work with on a daily basis. Gerber is also continuing to further look into innovations around Cloud, AI, and Machine Learning so that we can always provide our customers with the best solutions on the market.

Financial Year 2018/19

www.infor.com

6
NEW CUSTOMERS OF RFA PLM

56
OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2018/19

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

6,617
TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

883
TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION

Licensing revenue: **N/A**

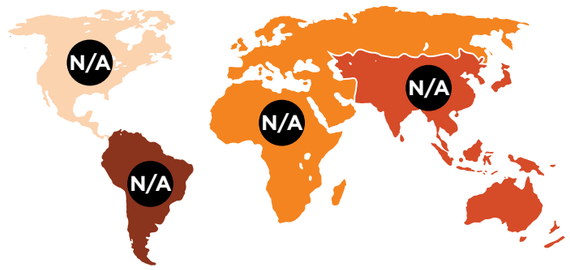
All maintenance revenue: **N/A**

Implementation & services revenue: **N/A**

R&D investment: **N/A**

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

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



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 is architected for multi-tenant, cloud computing on demand with a beautiful user interface, low total cost of ownership (TCO), and rich functionality. Built upon major investments in cloud technology, CloudSuite PLM for Fashion provides a smooth path to the future within a scalable, secure, and resilient infrastructure. Customers get quick and easy access to new functionality through a monthly update, which eliminates the need for major upgrades thanks to the cloud-native, single-version software.

The solution runs on Infor OS technology, which delivers a device independent, consistent HTML5 browser-based user experience, social collaboration tools, and support for workflows, alerts, and embedded contextual information from other applications, as well as integration with Infor/non-Infor applications.

The cloud solution enables seamless collaboration with suppliers for request management, supports sustainability, enables users to work anywhere and can be extended with mobile applications using the multi-tenant framework.

Infor has a strong focus on the fashion and retail industries and been a continuous innovator in PLM. Infor is a leader in cloud solutions and has around 77 million cloud users across its product portfolio.

Whether you need 20 users or 2000+ PLM users, CloudSuite PLM for Fashion scales to fit.

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.

Three key drivers shaping the future of the industry are:

- Digital - Everyone is talking about digital, yet the digital path for every organization will be different. Infor has invested in Infor OS (operating service) technology which provides the foundation to support digital and agility in the today's dynamic environment. It provides the technology and tooling for extensibility, integration, workflow, data management, image and document management, mobile, the Internet of Things, custom application development and more.
- Cloud-native Software - In a world where speed and differentiation are critical success factors, you need to focus on your core competencies and not on the maintenance and support of IT systems. Cloud is the future and Infor has invested in developing cloud-native, multi-tenant PLM.
- Competition for Talent - There is competition for talent and providing the right consumer-grade user experience and tools to attract, retain and make your talent productive is critical. This is why Infor has invested heavily in a user experience that is consistent, intuitive, runs on a Mac, PC, tablet or Smartphone, offers role-based homepages, social collaboration and seamlessly integrates with, for example, Adobe Illustrator.

Designed for progress™

BUILT FOR FASHION.

Infor CloudSuite™ PLM for Fashion is a cloud-native, multi-tenant product lifecycle management solution:

- An industry-leading user experience with role-based homepages, social business collaboration, and support for Mac, PC, tablet, and smartphone
- Runs on Infor OS technology to support your digital initiatives
- Deep, industry-specific, fashion capabilities from years of experience with apparel and footwear retailers, brands, and manufacturers
- Next-generation sourcing compliance capabilities help protect your brand integrity and ensure ethical conformity

infor.com/plm

LECTRA

Financial Year 2018/19

www.lectra.com

13

NEW CUSTOMERS OF RFA PLM, INCLUDING:
Alma Fashion, Brave Kid, Cawe, Cop Copine, Diesel, Etro, F.lli Campagnolo, Forest, Giorgio (F**K), Marni, Pomelatto, Staff International, Yezael

215

OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2018/19

180

NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

9,795

TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

N/A

TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION

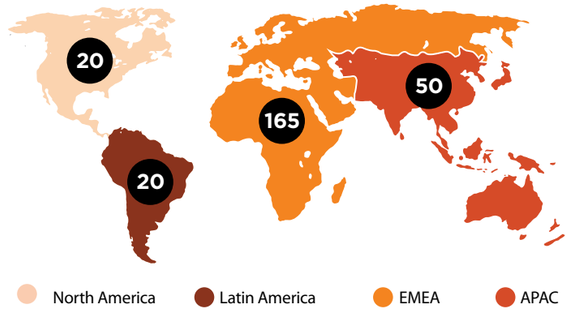
Licensing revenue:
$3-4 million

All maintenance revenue:
$3-4 million

Implementation & services revenue:
$5-7 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 above.)



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.

Powered by the cloud, Lectra's offer harnesses the power of data to help fashion companies better understand their businesses and customers – fully integrating every aspect of product-related business processes into one cohesive Industry 4.0-inspired platform. Incorporating PLM, DAM and PIM functionalities, it also unlocks greater agility in their other existing platforms such as ERP, CMS, PCM, WMS and e-commerce with complementary features that allow them to streamline processes, embrace collaboration and harness the power of their data. While these systems may work well individually, Lectra's offer brings them together into one intuitive platform – turning collective data into actionable insights. So that organizations can capitalize on consumer data, fast and flexible collection management, predictive analytics, agile decision-making, collaboration and sharing in real-time, and an increased speed to market – all with an eye on the bottom line.

This offer introduces an omni-channel approach to operating the business, and a bespoke way to enhance the synergy around designs, details, data and decisions, and empowers teams to bring inspiration to life – their way.

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.

Digitalization is transforming fashion – accelerating an already fast-paced industry into hyper speed.

Fashion companies today have to produce more collections in shorter timeframes, harnessing the power of data to ensure a flawless omni-channel experience that customers have come to expect. This calls for better and more efficient collaboration between different teams, from design to storefront that are constantly sharing and communicating valuable information in real time. While traditional PLMs have historically satisfied the product development process, today's fashion landscape calls for more – a solution that encompasses the entire ecosystem, not just part of it. You need a solution that embraces Industry 4.0 principles to compete in today's accelerated world – a better way to link the physical with the digital, the people with the process, and the passion with the purpose.

7

NEW CUSTOMERS OF RFA PLM, INCLUDING:
California Manufacturing, Hybrid Apparel, Jantzen Brands, Jerry Leigh, Joseph Ribkoff, Quality Worldwide, Rip Curl

153

OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2018/19

235

NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

36,720

TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

64,650

TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION

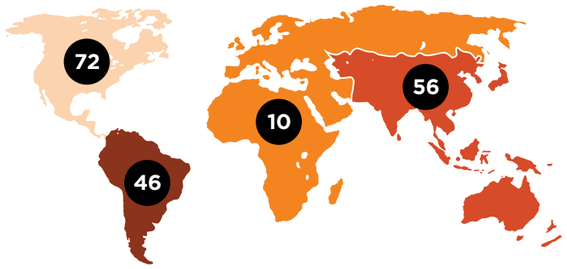
Licensing revenue:
$11-20 million

All maintenance revenue:
$11-20 million

Implementation & services revenue:
$11-20 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 above.)



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.

ptc

Financial Year 2018/19

www.ptc.com

16

NEW CUSTOMERS OF RFA PLM, INCLUDING:
Blacksmith Manufacturing, Canadian Tire Corporation, Fournier Group, Home Shopping Network, Hunter Fan

138

OVERALL NUMBER OF ACTIVE CUSTOMERS
of PLM within the RFA industry, excluding customers cited as new in 2018/19

82

NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

146,755

TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

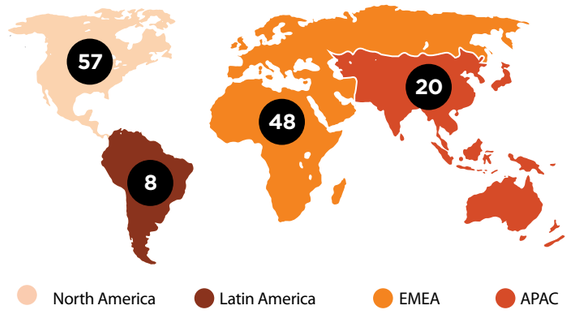
42,054

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 above.)



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.

In 2018 we introduced the Retail Innovation Platform: an end-to-end suite of integrated technologies designed to enable brands and retailers to respond quickly to market changes, maximize their creativity without losing control of costs, and to manage complex, multinational supply chains.

At the heart of the Platform is FlexPLM, which is the retail industry's most widely-used PLM solution, with the most total licenses sold, and a higher average user count per customer than any other PLM provider for the Retail, Footwear and Apparel industry. FlexPLM is trusted by the biggest businesses that have multi-category products and brands and whose complex business processes and supply chains are spread across multiple different continents.

The Retail Innovation platform is truly cutting-edge, with embedded artificial intelligence, vendor-agnostic 3D integration, a bespoke digital storyboard solution, AR capabilities and full Internet of Things connectivity – all built in. And with the new Thingworx Retail Connector, almost any enterprise system can be linked to FlexPLM in an easy, intuitive way.

To make these innovations as accessible as possible, a new, low-cost upgrade program has brought more than 20 long-term PTC customers up to the latest version of FlexPLM – securing our status as preferred PLM partner to everyone from the finest luxury brands to the biggest household names in retail.

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.

Retailers and brand owners are facing unprecedented pressures from both down and upstream. Shoppers want a demanding mix of quality, speed, style, and cross-channel service, while suppliers need secure, in-solution access to up-to-the-second product data in order to meet sample and shipping deadlines. Add the growing trends for personalization, transparency, and durability instead of disposal, and your readers are dealing with a more stressful environment than ever before.

Keeping up with the market in 2019, and making great products, is no longer possible without making smart, sustainable investments in people, processes, and technology.

The retail industry now needs true digital transformation, which is precisely what our Retail Innovation Platform is designed to support. By replacing manual and paper-based processes like material development (as partners in the new Material Exchange) and digital design and fitting (with support for all major 3D CAD and visualization solutions), PTC is offering solutions that will augment human capabilities today and empower creative and technical teams to be more agile and effective tomorrow.

We believe brands and retailers need a PLM for now, and a PLM for what's next. With FlexPLM – and the broader Retail Innovation Platform - they get both.

VISUALNEXT

Financial Year 2018/19

www.visualnext.com

20

NEW CUSTOMERS OF RFA PLM, INCLUDING:

Aftral, Alpha Design Group, Boston Proper, Butler Boot, Dee Jay, Ferrioni, Flamingo Apparel Textiles, Industrias Haber, J. McLaughlin, Janor Imports, JTAA Fashion Design, Kim & Co., Lac-Mac Limited, Logistik Unicorp, Mode Petit Bouffon, Textiles Budmark International

101

OVERALL NUMBER OF ACTIVE CUSTOMERS

of PLM within the RFA industry, excluding customers cited as new in 2018/19

27

NUMBER OF RESOURCES SPECIFICALLY ENGAGED IN R&D

13,600

TOTAL NUMBER OF INTERNAL USERS WORLDWIDE

3,000

TOTAL NUMBER OF EXTERNAL USERS WORLDWIDE

REVENUE & INVESTMENT INFORMATION

Licensing revenue:

$3-4 million

All maintenance revenue:

$3-4 million

Implementation & services revenue:

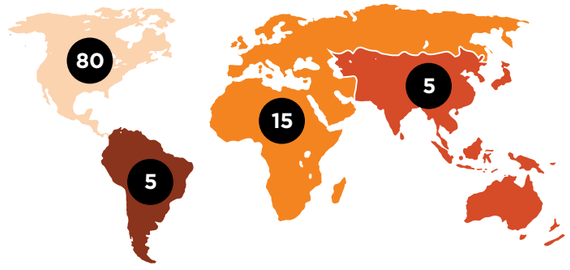
$1-2 million

R&D investment:

$0-2 million

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

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



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.

Visual Next, known for market foresight and developing the latest innovations in apparel-specific technology has repositioned their **PLM as a Platform** to enable advanced flexibility and configurability as a key foundation for their **PIM** solution.

The implementation of browser and device agnostic capabilities, coupled with powerful and flexible user-defined role-based dashboards, makes Visual PLM easy to implement while offering highly configurable solutions without the impediments of custom software. Visual PLM users typically go live in under 6 months.

2019 advancements are focused on empowering Visual PLM users by bringing them into the world of IoT and real-time global collaboration including a complete update of Visual PLM in HTML5, an enhanced Adobe Design integration, 3D Digital Body Scanning, embedded Artificial Intelligence with image recognition, and a ColourMart integration for digital color analysis.

Visual PLM's integration with Artificial Intelligence partners adds the power of image and pattern recognition to perform advanced searches across competitive landscapes in seconds using key attributes and business intelligence for Merchandisers and Planners.

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 the apparel industry continues to focus on technology in product design and client outreach in order to meet the needs of the new connected consumer.

Made to measure apparel is moving beyond luxury fashion, and entering the mainstream with brands of all price points choosing to offer better fitting garments consumers are demanding.

Managing the complexity of customized products requires a flexible and adaptable PLM that is able to manage the components that make up this unique vertical as it grows. Visual PLM will facilitate the growing demands for made to measure products by reducing the challenges of unlimited permutations through the automation of potential product combinations.

Visual's **3D Body Scanning** will facilitate the scan and capture of fit information, importing the fit data into PLM, ensuring the consistency of point of measure.

Visual PLM's roadmap is also focused on becoming an even more centralized, consolidated and real-time repository of information; evolving PLM into a Product Information Management (PIM) tool available to integrate to multiple platforms.

PLM as the single source of product information can power the entire enterprise ecosystem, including partners, vendors, customers, marketplaces, distributors, and more, facilitating fashion's growth within the ever expanding omnichannel marketplace.

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 on-site 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.

NB: As with our PLM vendor profiles, the final responsibility for the accuracy of all information contained within this section remains the responsibility of the companies listed. Although WhichPLM has made every effort to quantify and verify the information provided to us, nothing in these pages should be construed as an endorsement or assessment of any consultancy practice or advisor, and WhichPLM has no responsibility or liability for the content of advertisements that appear adjacent to these profiles.

KALYPSO

www.kalypso.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, as well as 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:

- Multi-year, multi-brand, global PLM transformation for a $70B+ home improvement goods retailer
- Multi-year, multi-brand digital product creation solution design, development and implementation for global toy manufacturer
- Visualization platform integration across a core PLM application, 3D design tool and visualization platform for a multi-division, global apparel manufacturer
- Digital strategy and prototyping for the integration of a PLM application, 3D design tool and voice of the customer analytics solution for a specialty apparel retailer
- PLM transformation/implementation and managed services for a $3B+ apparel and hardlines catalog retailer

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

We focus on the product side of the RFA business, working with clients to discover, create and make innovative and differentiated products. This exclusive focus on innovation in the digital value chain allows us to help brands transform their capabilities throughout the product development lifecycle, 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?

In today's highly competitive environment where big players are disappearing and new, emerging businesses are taking market share, brands must find ways to discover, create, make and sell product - better, faster and cheaper.

1. The value of DPC in reducing cycle time can be unlocked with the integration of 3D design tools and PLM. Our annual "Adoption of Leading Product Development Practices in a Digital World" research reveals 50% are investing in 3D and PLM integration within the next 12 months. At our Bridgetown Innovation Studio in Portland, Oregon, we help clients bring this vision to life with a fully integrated DPC platform showcase.
2. Enterprise information management (EIM) provides the data backbone to serve consumers in new and exciting ways. Leaders are shifting from master data management (MDM) to EIM to build a data-driven, decision-making culture focusing on data governance, support for e-commerce and other new business models.

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?

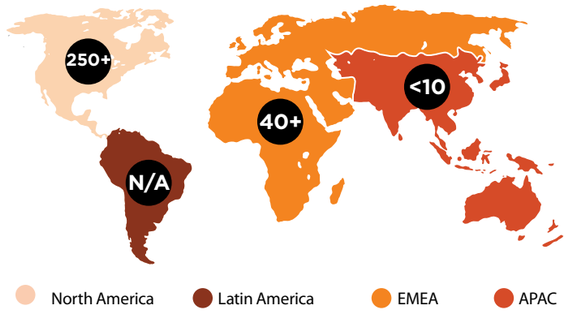
Brands are challenged to bring products to market at unprecedented speeds in an era when the supply chain is more global and complex, and transparency is essential.

1. Smart connected supply chains open up new opportunities, unlock additional value, improve sustainability and reduce time to market. The digitization of the supply chain requires interoperability, seamless sharing of data, and integration of PLM and other leading technologies.

2. Enterprise information management (EIM) optimizes the management of data to meet the needs of a growing, global supply chain. Leading practices in data governance and data quality build a strong foundation of supply chain data that can empower strategic operational decisions. While most brands are not yet ready to compete in data-driven business models, the industry disrupters will be data companies that create, make and sell apparel.

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

- North America: 250+, 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): 40+, including resources based in our European Innovation Center located in Bucharest, Romania, and at our office in Hamburg, Germany.
- 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.



PRODUCT DEVELOPMENT PARTNERS

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

Vendor Agnostic. We work with Centric, Visual Next, Infor, PTC, Gerber and Lectra.

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.

Ben Sherman – 2012/2013 – PTC

Kwintet – 2012 – Gerber

Marsylka – 2014/2015 – Visual 2000

Tally Weijl – 2014 – Centric

Build a Bear – 2013 – Centric

Voice/Gresvig Sports – 2012/2013 – Lawson

Local Boyz – 2016 – Visual 2000

Closet Clothing – 2016 – Visual 2000

Mountain Equipment Co-op – 2016/2017 – Visual 2000

Seasalt – 2015/2016 – Visual 2000

Pentex – 2015 – Visual 2000

Studio One – 2016 – Visual 2000

Trekmates – 2015/2016 – Visual 2000

Boden – 2016 – Centric

Tom Tailor – 2016/2017 - Centric

Paragon Clothing – 2016/2017 – Visual 2000

A&D Hope – 2016/2017 – Visual 2000

ICW – 2017 – Visual 2000

Focus International 2017/2018 – Visual Next

New Look Core – 2017/2018 – Visual Next

New Look Wholesale – 2018/2019 – Visual Next

Wacoal – 2018/2019 - Centric

*Plus 4 other clients in 2018/2019 who do not wish to be identified.

Over the last 9 years we have implemented in excess of 40 systems from PTC, Lectra, Gerber, Lawson/Infor, Visual 2000/Visual Next, Freeborders and Centric.

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

Deep understanding of the methods and processes used within the RFA sector. The knowledge and experience of our consultants both in the RFA industry and in implementing software systems within it. Ability to handle all aspects of an implementation including selection, business process re-engineering and definition, system configuration, onsite training and documentation, report writing and development and support services. As a team PDP is there from the initial concept right through to Go Live and beyond a true partnership.

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?

Collaboration between the Retailer/Brand and the Supplier(s). Most companies still do not bring their external suppliers into PLM but this is now starting to change and we have seen numerous clients bringing Supplier into their systems and in some case also bringing Customers into PLM and for 2019 should see this become the norm rather than the exception.

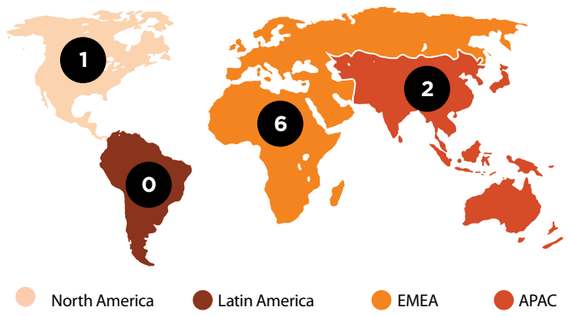
Internet of Things (IoT) – A lot is being done to enable the IoT and PLM is at the forefront of combining different technologies (Electronics, Computing, Communication etc) with the ever changing landscape of Clothing, Footwear and Accessories.

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?

Collaboration is still the most important function for the extended supply chain. The growing trend of End to End solutions combining PLM and ERP means that this is even more important in providing a seamless communication and tracking system that enables all partners to participate and visualise the complete supply chain.

Use of 3D Technologies to enable Virtual Sampling, true to life visualisation and integration to the Design, Merchandising and Garment Tech roles.

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



PRODUCT DEVELOPMENT PARTNERS

www.pdplimited.com
info@pdplimited.com
+44 (0)7515 741852

Led by Perry Bonney, Product Development Partners provides expert consulting services on Product Lifecycle Management systems from the leading vendors and assists the Retail, Footwear and Apparel industries in implementing new software or enhancing their existing PLM environments.

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

Infor Fashion PLM

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 several Infor Fashion PLM (earlier known as Freeborders PLM and Lawson Fashion PLM) implementations. This includes providing different services to our customer. The time period mentioned below is when we provided the services to the customer.

ITC Limited (India - 2006)
Reliance Retail (India - 2007)
Gini & Jony (India - 2007)
Aditya Birla Retail (Madura Fashion & Lifestyle Division) (India - 2008)
Colorplus Fashions (India - 2009)
Peacock (UK in 2009)
Weissman (USA in 2010)
Club 21 (Singapore in 2010)
TAL (Hong Kong in 2010)
Big Strike (USA in 2012)
Darice (USA in 2013) CPG industry (toys and gift articles).
CUK Clothing Limited (UK in 2013)
Badger Sportswear (USA – 2014)
HH Brown (USA - 2015)
Future Retail Limited (India – 2015)
Indus League (India – 2016)
Ziera Shoes (New Zealand – 2016)
The Apparel Group (USA – 2016)
Dynamic Designs (USA – 2016)
Outpac Designs (Hong Kong - 2017)
Michaels Retail (USA - 2017) – Implemented for RFA and CPG industry (Toys and Gift Articles).
Horseware (Ireland - 2017)
LTP Limited (Lithuania - 2017)
W.L. Gore (Germany - 2018)
Vida Shoes (USA - 2018)
Fristads (Sweden - 2019)

* Plus 17 other customers that do not wish to be named.

What do you consider your practice's strategic, tactical and implementation strengths to be in the region of 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 companies to deliver superior business results by harnessing the power of technology..

The team reflects a 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 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?

Blockchain technology has started to transform the apparel supply chain. It connects a physical product to its digital identity. This link offers opportunities for a more transparent end to end supply chain. It allows to track and trace the supply chain in moving the product from supplier to consumer. RFA Brands can assign a unique code to each product and allow their customers to access the entire history of that product – from the country of origin to the final seller – and every step along the way. It could indicate if the product is sustainably and ethically manufactured. When the label says "Made in US or Europe." The customer can track where the product was manufactured, who manufactured it with which materials. These greater transparency in supply chains will create new incentives for companies to change the way they do business and even how they view themselves as an organization.

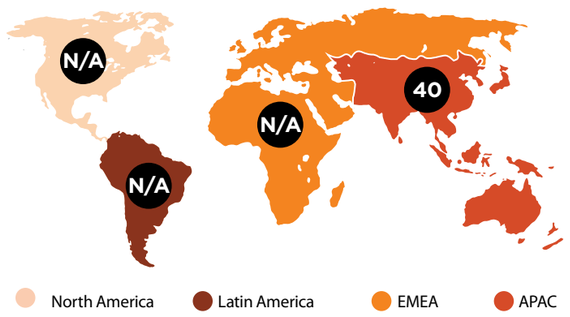
Tell us (in a maximum of 150 of your own words) what you see as the two most important emerging trends for supply chain manufacturing (particularly fashion, footwear and accessories) in the coming year?

Sustainability practices are led by the developed nations however this cannot happen without the support from the suppliers and vendors from developing nations. By manufacturers switching to sustainable manufacturing practices they can save money by reducing your water, power and electricity use. Right system will allow manufacturers to track and analyse every step of your process, helping them to determine where they can make the most effective changes.

Customers especially Millennials like to buy products from brands and retailers with pro-social messages, sustainable manufacturing methods and ethical business standards. Blockchain offers the technology to make it easier for the manufacturers to be directly responsible throughout the production processes, to communicate this better to their customers and for customers to easily trace the journey of the products throughout the production and distribution processes.

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



PLM MARKET ANALYSIS

2018/19.

Extended digital solutions may take up a large part of this publication, but the centre of any digital ecosystem will always be a single, accurate location where all essential information pertaining to the design and development portions of the product lifecycle is stored. So while we certainly believe that brands, retailers, and manufacturers are spreading their technology investments more broadly – buying into the potential of technologies like 3D, AI, digital printing, and blockchain – this will not come at the cost of an investment in PLM. Although, as this section of the publication will demonstrate, the scope and the nature of that investment – taken at a global level, over the course of the fiscal year 2018/19 – has now reached a new level of stability, maturity, and commoditisation.

WhichPLM has now charted, commented on, and analysed the PLM market for retail, footwear, and apparel for around a decade. In that time we have seen the market evolve considerably: from costly, fully-customised solutions that were in reach of only the largest enterprises, to today's world where affordable, cloud-based, subscription deployments (and even truly multi-tenant environments) have brought the benefits of PLM to businesses of essentially any size.

Throughout that time, the RFA PLM market has continued to outpace expectations. Although fluctuations in the different tiers of the market (the way these tiers are segmented is described in more detail in the coming pages) have sometimes confounded our expectations, on balance the industry has demonstrated clear growth year-on-year, usually far exceeding the expectations of other enterprise software segments.

For a long time, that growth was visible across both the number of new name sales (our primary metric for measuring the market) and the composite monetary value of those sales when software licensing, implementation and support services, and maintenance costs are taken into account. As you might expect, though, given the way the underlying technology and the way it's sold and deployed have changed, those two yardsticks for growth – new sales and total revenue – have begun to diverge over the last few years.

This year, new sales are up, while overall monetary value is down – a trend that can be largely attributed to the difference in value between a PLM implementation for a small business and a large-scale deployment for a multinational company.

The market analysis that spans the next few pages will explain what we see as the primary forces behind this shift, as well as providing the up-to-the-minute RFA PLM sales data that has allowed us to reach our conclusions.

Following on from the analysis itself, executive summaries are provided for the four major segments of our readership: PLM customers, PLM vendors, consultants and professional services companies, and developers of other digital solutions that are rapidly becoming key components of brands' and retailers' technology ecosystems.

First, though, it's important to understand 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 won't 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 ninth year, we

believe we have perfected this approach; we collect clear information, refine it according to clear criteria, apply transparent models to the raw data, and present our findings in a 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. Although, as we will explain towards the end of this portion of the publication, this may be the last year in which we run this model, given the largely predictable results it now generates in what has become a very mature market. Over the coming pages, though, we will set out the number, type, and geographical spread of RFA PLM sales in the period 1st April 2018 to 31st March 2019, 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. We invariably need to challenge one or more vendors on the information they provide, and in most cases our revisions are accepted. On the whole, however, 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.

It's important to note that although this publication includes overviews of (and promotions for) many leading digital solutions that round out the technology ecosystem and can add considerable value to a PLM implementation, the scope of the research, intelligence, and analysis in these pages is constrained to the market for core, modern PLM solutions only.

What we consider to be a modern PLM solution, and how this is distinct from other technologies that are sometimes mis-sold as being PLM, is explained in the Glossary section that takes up the final pages of this publication. This is just one example of where, in an industry rife with acronyms, our Glossary can be helpful in understanding the different terms that we and others use. If you encounter anything in these pages that you are not familiar with, please turn to the Glossary to see if a more detail definition is available – and remember that WhichPLM may define even common things differently to

other analysts and vendors.

For comparison purposes, the complete back catalogue of WhichPLM publications (including our **2018 Buyer's Guide**, and the Annual Editions that preceded it) 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 for our **5th Edition**, **6th Edition**, **7th Edition**, **2018 Buyer's Guide**, and this publication. 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.

"For many years, the RFA PLM market has outperformed other enterprise software."

Our qualifications

This Buyer's Guide and the other downloadable publications that preceded it form only part of WhichPLM's continuous industry analysis, speaking events, 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 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 2018/19 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 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 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.

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.

Last year, 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, 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 and 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.

As was the case in our **2018 Buyer's Guide**, very few CPG Crossover companies were named by vendors this year, and as such their inclusion has had a very limited impact on the composition of the market. There remains little doubt, though, that cross-vertical expansion is still a major target for leading PLM vendors whose ambitions stretch beyond the RFA industry. And a similar trend, albeit operating in reverse, is taking place with customers who have traditionally produced engineering-led products using non-RFA PLM solutions, but who are now having to incorporate more design-led elements, visual iteration, and even fashion and seasonality into their product line-ups.

"The potential market value from upgrades and expansions could reveal a much larger overall value than new name sales alone."

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.

"We predicted the market would grow by 5% this year. It exceeded our expectations and grew by close to 8% in 2018/19."

The RFA PLM market - a retrospective

Each year, our analysis team has set out their predictions for the following twelve-month period, looking at how and where the RFA PLM market is likely to grow or contract in the next twelve months, as well as providing an overall growth prediction for the market as a whole.

While our overall predictions have typically been fairly accurate, and have always pointed in the same direction as the eventual reality, history has demonstrated the difficulties inherent in trying to predict the behaviour of prospective PLM customers at the specific tier level. The reasons for this vary year-on-year, but broadly speaking it is difficult to make accurate predictions in a market where large-scale PLM projects (which are typically funded by capital expenditure budgets) are often in the preparatory stage for more than a year before a final selection, while smaller-scale ones (which are usually paid for on a recurring basis as operational expenditure) can go through preparation, selection, and implementation in just a few months.

In both cases, the actual date at which a PLM project can be said to be "sold" is usually in flux; larger projects may be deferred until another project of a similar size is completed, whereas smaller ones may simply be put on hold until a future season, since they can be resumed and even trialled with minimal disruption. So while our predictions have always been based on clear, observable information, exclusive insight, and some level of intuition, those expectations can be easily confounded by the nature of commercial decision-making.

This year, these and other factors have affected how the reality of the RFA PLM market in 2018/19 compares to the predictions we made for the market twelve months ago. We will briefly revisit those predictions now, and set out some of what we see as the key reasons for the disparities between our expectations and what actually occurred:

- Overall, we predicted that the RFA PLM market would grow by 5% in terms of new name sales this year. This prediction has been borne out, and the market has actually exceeded our expectations and grown by close to 8%.

- At the extreme upper end of the market, we predicted that sales to Tier 0 customers would rise dramatically, by more than 60%, in 2018/19. This prediction was based on insider knowledge that led us to conclude, with a good degree of confidence, that several of the world's biggest retailers were preparing to adopt PLM this calendar year. In reality, this market segment actually shrank, running completely counter to our expectations. It's important to note, though, that while the percentage swing here is obviously wild, the difference between what we expected to see from Tier 0 and what was actually realised is a matter of single-digit sales numbers.

- For Tier 1, our expectation was that growth would continue at around 11% year-on-year. In reality, growth of 22% is evident in this market segment, with the additional, unexpected sales landing in this fiscal year rather than being signed after the time period covered by this analysis.

- We were again correct in the direction of movement for Tier 2, although again our predictions proved conservative. We expected to see a fall of around 17%, resulting from an essentially saturated market with few, if any, late-comers, and where PLM solutions have not yet been in place long enough to warrant complete replacements. This year's data reveals that this market segment did indeed shrink, but at a much faster pace than expected; sales to Tier 2 customers fell by 30% year-on-year, suggesting that even we underestimated just how rapidly the market would shift towards the lower Tiers.

- Although we expected that similar forces would apply to Tier 3, the point of market saturation was, we reasoned, farther off. This prediction proved reasonably accurate, and while this market segment did not grow as we'd initially expected, it also did not shrink in any serious way.

- Market performance in Tier 4, on the other hand, diverged dramatically from our prediction. Fuelled by an influx of small-to-medium businesses who we believed were on the cusp of becoming the larger brands of tomorrow, we expected to see growth of around 4% in 2018/19. In reality, this market segment shrank by 44%, with the bulk of the sales from the lower Tiers now belonging to the smaller businesses that make up Tier 5.

- The largest market segment by volume, Tier 5 growth has far outstripped our expectations, growing by 70% year-on-year as sales to Tier 4 businesses dwindled in comparison.

On balance, while we are pleased to see that the industry as a whole grew in line with our expectations, a confluence of different factors has affected the accuracy of the predictions we made at the Tier level.

THE RFA PLM MARKET IN 2018/19

Continuing on from our comparison of prediction against actual performance, 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 2018/19.

In previous years, we have used Gartner polling and predictions for IT spending to gauge the RFA PLM market against the wider software and technology industry – usually finding that our market has exceeded expectations to some degree. This year, however, growth in RFA PLM sales appears to be in line with the multinational analyst firm's **latest predictions**; Gartner peg spending on enterprise software in 2019 as being likely to grow 8.3% year-on-year, with core applications taking "the lion's share of dollars," while RFA PLM sales grew by 7.8% between 2018 and 2019, galvanised by PLM's status as an essential business system.

This is not the end of the similarities: according to Gartner, SaaS and cloud software account for a good percentage of the growth in the broader IT market, and the same forces are also responsible for the uptake of PLM at both the small business and multinational ends of the market. This conformity to the common model for technology spending is, in our eyes, something of a dual-edged sword.

From one perspective, the fact that RFA PLM is no longer carving an independent path, and bucking trends that hold true elsewhere, is a net positive; our industry has clearly reached a level of maturity where it is effectively self-sustaining, and where having a PLM platform is seen as an essential part of doing business in a world of digital retail. For customers this means that selecting PLM is a matter of choosing carefully between an ever-tightening field of very close competitors. For vendors this means a captive market for both first installations and replacements, and a level of certainty that brands, retailers, and manufacturers will need PLM for some time to come.

From another angle, though, vendors – depending on their current business model and technology stack – may be rightfully wary of their place in what is rapidly becoming a relatively static, commodity market. Where once a PLM vendor could stand out from the crowd on the basis of core functionality, today most solutions have long since passed feature parity, and scalability, affordability, and usability are much more prominent selection criteria. As a result, unless a vendor is well-prepared to sell to small businesses in the volume SaaS market with a low-cost, intuitive solution (whether that's in isolation or as part of a hybrid model that targets both the upper and lower extremes of the market), that vendor runs the risk of being shut out of much of the industry's future growth.

Because, as the following table demonstrates, an overwhelming 71% of all new PLM sales in the 2018/19 financial year were made to businesses with turnovers of less than $100 million – and of those sales, the vast majority (55% of all sales this year) were to companies whose revenues are less than $49 million.

Customer Tier	Percentage of sales 2017/18	Percentage of sales 2018/19
Tier 0	5%	4%
Tier 1	7%	8%
Tier 2	13%	9%
Tier 3	10%	9%
Tier 4	30%	16%
Tier 5	35%	55%

This is a trend that WhichPLM has seen coming for many years. Originally, our market analysis methods involved segmenting customers into just Tiers 0-3, but over time we realised that sales were pooling at the lowest tier due to the combination of affordability and strong functionality that most modern PLM solutions offered.

To shine a light on this concentration of customers, we segmented what was then the lowest Tier (Tier 3) in two, and for a year that provided the right level of insight into the forces that were driving adoption in both the middle market and for smaller businesses. Quickly, though, even this five-tier model was overwhelmed by the volume of sales in the lowest Tier, and with our **2018 Buyer's Guide** we introduced Tier 5 as a way of obtaining even more granular analysis of why the RFA PLM market had again shifted downwards.

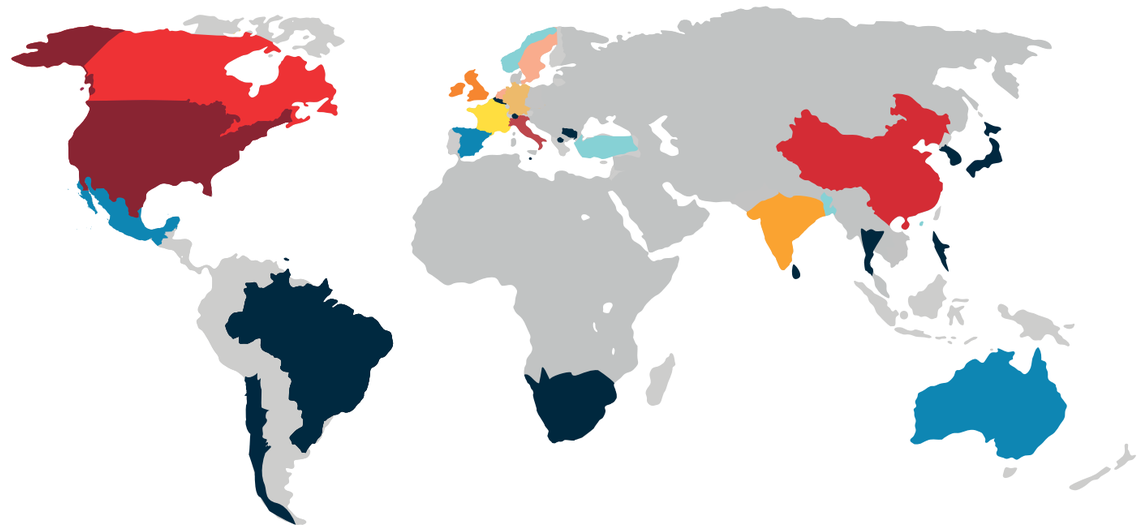
As the table shows, Tiers 4 and 5 were split quite evenly in the 2017/18 financial year, and we were confident that the volume end of the market would remain reasonably consistent for another year. As the evidence shows, however, we underestimated the appetite of the smallest businesses to get their hands on powerful technology that has typically been out of their reach, and this year a full 55% of all new PLM sales were made in Tier 5.

At the time of writing, we have no plans to segment our model any further. While it may be possible to split this market tranche by drawing a line under businesses with revenues of less than $25 million, the practical value of doing so is likely to be slight. For the purposes of our analysis, as well as for PLM vendors' sales strategies, the existing Tier 5 and a hypothetical Tier 6 would be so closely aligned as to be indistinguishable.

To put it bluntly, the RFA PLM market has evolved to such a stage that, however we or other analysts slice it, the bulk of the new names in any given period will be dominated by small and boutique businesses.

Things are not as cut and dry as they seem, however, since the number of new name sales can paint a deceptive picture of the market without being accompanied by a financial analysis. But before we look at how much the RFA PLM industry is worth, it's important that we set out how that overall value is spread throughout the world.

Sales concentration by region - 2018/19



United States	37.0%	Sweden	2.5%	Spain	1.0%	Malta	0.5%
Italy	9.0%	Netherlands	2.5%	Austria	0.5%	Philippines	0.5%
China	8.0%	Bangladesh	1.5%	Belgium	0.5%	South Africa	0.5%
Canada	7.0%	Hong Kong	1.5%	Brazil	0.5%	South Korea	0.5%
United Kingdom	5.5%	Norway	1.5%	Bulgaria	0.5%	Sri Lanka	0.5%
India	5.0%	Turkey	1.5%	Chile	0.5%	Thailand	0.5%
Germany	4.0%	Australia	1.0%	Japan	0.5%	Trinidad & Tobago	0.5%
France	3.5%	Mexico	1.0%	Macedonia	0.5%		

Geographical breakdown of sales

The international market for RFA PLM remains an intensely competitive one, but by and large that competition is occurring in a predictable geographical pattern, as the table below demonstrates.

Evaluated over a three year period, the high-level distribution of PLM sales has not varied by more than 2% per region in either direction – even with several major PLM vendors making significant inroads into new and emerging markets outside their home territories.

Like the financial stability we see when we compare the RFA PLM market to the broader enterprise software market, this level of geographical stability also suggests an extremely mature market. In 2019, extremely entrenched players are choosing their targets carefully, while brands and retailers are following in the footsteps of both national and international peers, creating a feedback loop that has led to, in some cases, several cycles of PLM purchases and replacements.

Surveying this landscape, it seems unlikely that we will see any significant shake-ups at the macro level in the next three years.

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 overleaf are several regions where we believe sufficient change occurred in the 2018/19 financial year to warrant additional analysis.

Region	2016/17	2017/18	2018/19
EMEA	35%	34%	34%
Asia	23%	22%	20%
Americas	42%	44%	46%

Share Of Total RFA PLM Sales By Country (%)

Country	2016/17	2017/18	2018/19
Australia	0.5%	0.5%	1.0%
Austria	0.0%	0.0%	0.5%
Bangladesh	4.0%	3.5%	1.5%
Belgium	0.5%	1.0%	0.5%
Brazil	0.0%	1.0%	0.5%
Bulgaria	0.0%	0.0%	0.5%
Canada	3.0%	5.5%	7.0%
Chile	0.0%	0.0%	0.5%
China	6.0%	6.0%	8.0%
Denmark	1.0%	0.5%	0.0%
Finland	0.5%	0.0%	0.0%
France	3.0%	3.5%	3.5%
Germany	3.0%	5.0%	4.0%
Greece	0.5%	0.0%	0.0%
Hong Kong	2.0%	2.5%	1.5%
India	6.0%	7.0%	5.0%
Israel	0.5%	0.0%	0.0%
Italy	6.0%	3.0%	9.0%
Japan	1.0%	1.5%	0.5%
Jordan	0.5%	0.0%	0.0%
Macedonia	0.0%	0.0%	0.5%

Country	2016/17	2017/18	2018/19
Malta	0.0%	0.0%	0.5%
Mexico	0.0%	2.0%	1.0%
Netherlands	3.0%	2.5%	2.5%
Norway	2.0%	1.5%	1.5%
Pakistan	0.0%	0.5%	0.0%
Philippines	0.0%	0.0%	0.5%
Poland	1.0%	0.0%	0.0%
Portugal	0.0%	0.5%	0.0%
Russia	0.5%	1.0%	0.0%
South Africa	0.5%	0.5%	0.5%
South Korea	0.0%	0.0%	0.5%
Spain	1.0%	1.0%	1.0%
Sri Lanka	0.0%	0.5%	0.5%
Sweden	4.0%	3.0%	2.5%
Switzerland	1.0%	0.0%	0.0%
Thailand	0.5%	0.0%	0.5%
T & Tobago	0.0%	0.0%	0.5%
Turkey	3.0%	2.0%	1.5%
UK	8.0%	9.0%	5.5%
USA	37.5%	35.0%	37.0%

South America

Once the 'next big thing' for a variety of industries (RFA PLM included) the South American retail technology market has now all but disappeared, and almost all the vendors who established tentative operations there have quietly shuttered them. After three years of zero new name sales, we have now eliminated Argentina, Colombia, and Guatemala from our lists of contemporary markets. And while Chile has entered that list for the first time in 2018/19, even combined with Mexico and Brazil, the only other remaining Latin American countries, account for just 2% of new name PLM sales.

Although it is impossible to draw generic conclusions across multiple countries, it seems fair to say that a combination of economic and political factors have so far worked against the exciting market that once seemed to be emerging across South America. This may change on a country-by-country basis in the future, but for the time being we would be surprised to see any RFA PLM vendor make the region a focus of their sales efforts.

United Kingdom

WhichPLM's home nation has undergone an extremely difficult period politically – one that shows no sign of being solved at the time this publication was written. And at the same time its retail industry has experienced a protracted slump. As a result, investment in retail businesses has fallen steeply, and, like many other countries, consumer spending has coalesced around the upper and lower ends of the price and quality spectrum, with the middle market being home to several high-profile bankruptcies and administrations. In these conditions, PLM has become a secondary consideration for many businesses as they scrabble to survive, which is a direct contributor to a 3.5% drop in the UK's share of PLM sales in 2018/19.

India and Bangladesh

This year has seen a noteworthy slump in both India and Bangladesh's shares of the PLM sales, which amounted to a combined 10.5% last year, but which now total 6.5% when taken together. Contrary to the picture this paints, however, WhichPLM believes that brands and retailers today are more willing than ever to extend their use of PLM into the supply chain – and indeed the industrial powerhouse of China has seen a upswing in its share of sales, suggesting that the reasons for the lower proportional sales in India and Bangladesh lie within those specific countries.

This fall in sales may be attributed to Western-owned brands and retailers shifting their sourcing and manufacturing to alternative locations for either cost or compliance reasons, or it may be due to fewer opportunities existing in the factory-owned private label market than many analysts – WhichPLM included – had originally envisioned.

Italy

One of the luxury capitals of the world, the Italian RFA PLM market has seen a major resurgence this year. In the 2016/17 financial year, sales in Italy peaked at 6% of overall market share, but this fell to just 3% in 2017/18, putting the country 8th in a ranking of territories by PLM adoption that year. This year, a surge of interest from prestige brands, luxury groups, and retailers has pushed Italy into second place with 9% of sales – ahead of previously dominant markets like India, China, and the Nordic bloc.

Nordic Countries

Once the third largest PLM market by sales volume, the Nordic bloc (comprised of Denmark, Finland, Norway and Sweden) attracted considerable interest from PLM vendors who had established themselves in Europe and who now saw an opportunity to cater to the booming fashion scene in these countries. That market may have been smaller or more competitive than these vendors expected, however, since the group is now in 6th place overall, with only half the share of global PLM sales in 2018/19 that it achieved at its peak in 2016/17. We do not believe this market is saturated, however, and the vendors that have committed resources to it are likely to see breakthroughs in different market tiers over the coming years.

USA & Canada

North America is home to two major PLM markets this year. The USA continues to dominate the industry, with 37% of all RFA PLM sales occurring there in 2018/19 – a share that has now been consistent for the best part of a decade. The reasons for this are the same they have always been: the United States is home to an extremely healthy mixture of the world's biggest and most innovative companies, as well as a startup culture and ethically-driven consumer base that together support new, home-grown brands and help them ascend to the international stage. Given that almost every major PLM vendor is either headquartered in the USA or has major operations there, this is not something we expect to change in the near future.

Its northern neighbour Canada, however, has seen a significant rise in PLM sales this year. From just a 3% share in 2016/17, Canada has now seized 7% of the market, and a three-year analysis suggests that this trend may continue and the country may become the second-largest market in 2019/20. This year Canada is fourth in overall sales volume, behind only the USA, Italy, and China, and its percentage market share is just one point shy of the performance that attracted such interest in the Nordic countries at their peak.

"The international market for RFA PLM remains intensely competitive, but by and large that competition is occuring in a predictable geographical pattern that suggests an extremely mature market."

MARKET SIZING

To understand the full size and scope of the RFA PLM market in the 2018/19 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 unwillingness of a small number of vendors to provide what we consider to be accurate sales figures.

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 2018/19. 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 (12 sales)	Tier 1 (22 sales)	Tier 2 (25 sales)	Tier 3 (27 sales)	Tier 4 (46 sales)	Tier 5 (160 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:	24,000 (comprised 9,000 internal and 15,000 external)	13,200 (comprised 4,400 internal and 8,800 external)	7,500 (comprised 2,500 internal and 5,000 external)	2,025 (comprised 1,350 internal and 675 external)	1,380 (comprised 920 internal and 460 external)	2,400 (comprised 800 internal and 1,600 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:	$16.50 million ($9.00 million internal, $7.50 million external)	$15.40 million ($11.00 million internal, $4.40 million external)	$8.12 million ($5.62 million internal, $2.50 million external)	$3.08 million ($2.70 million internal, $338,000 external)	$1.73 million ($1.38 million internal, $345,000 external)	$1.97 million ($768,000 internal, $1.20 million external)
First year maintenance:	18%	20%	17%	15%	0%	0%
Total maintenance this year:	$2.97 million	$3.08 million	$1.38 million	$460,000	$0	$0
Typical number of service days to conduct implementation:	2,000 man days	600 man days	300 man days	100 man days	25 days	10 days
Total service days this year:	24,000	13,200	7,500	2,700	1,150	1,600
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:	$42.00 million	$19.80 million	$9.37 million	$2.70 million	$1.15 million	$1.60 million

Total RFA Market Size for 2018/19

	Tier 0	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Total
License Costs	$16.50 million	$15.40 million	$8.12 million	$3.08 million	$1.73 million	$1.97 million	$46.80 million
Maintenance Costs	$2.97 million	$3.08 million	$1.38 million	$460,000	Zero	Zero	$7.89 million
Service & Setup Costs	$42.00 million	$19.80 million	$9.37 million	$2.70 million	$1.15 million	$1.60 million	$76.62 million
Composite Total	$61.47 million	$38.28 million	$18.87 million	$6.24 million	$2.88 million	$3.57 million	$131.31 million

As these tables demonstrate, the difference in the quantity of new-name sales between the extreme upper end and the extreme lower end of the market is stark. Out of a total of 292 global sales, 160 were made to Tier 5 businesses and 46 to Tier 4, meaning that more than 200 sales in the 2018/19 financial year were to businesses with revenues of below $100 million.

Factoring in software licensing across internal and external users, professional services, and ongoing maintenance (whether paid as a line item or amortised as part of a recurring subscription) we arrive at a total size for new-name sales of $131.31 million. It's important to bear in mind, though, that this market size is confined to new sales, implementation, and service-level maintenance only. 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 can be generated – from thousands of dollars at the Tier 4 and 5 level, up to hundreds of thousands 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.

Contrasted against the number of new-name sales – which has grown by 7.8% in the last twelve months – the monetary size of the RFA PLM market has fallen year-on-year by around 5%. This may sound gloomy, but it is worth qualifying this percentage figure by assigning it a dollar value, where we see that the bottom line has shrunk by just $7 million.

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 INTERPRETATION

Although the RFA PLM industry has been clearly and inexorably moving in this direction for several years, by far the most salient result from our 2018/19 market analysis is the concentration of sales in Tiers 4 and 5. Although it is not the first time in our decade-long history of these publications that the small-to-medium business market segment has accounted for more than half of all PLM sales, it is the first time that a single tier has done so.

The reasons for this shift have been repeated time and again. A rapid shift to cloud deployments and a Software As A Service mindset. Technology advancements inside and outside PLM that have made it easier than ever to launch a new brand and sell directly to consumers with minimal overheads. Modular, hyper-configurable PLM platforms and, this year, the launch of the industry's first true multi-tenant environment.

It stands to reason, then, that PLM vendors should be making every effort to reorient their businesses and target this huge segment of the market. Not necessarily.

Tier 5 may have seized the lion's share of new-name PLM sales this year, but examine the composition of those sales in more detail (as set out in the Market Sizing section of this analysis) and it becomes clear just how different a sale to a Tier 5 company is than a sale to a Tier 0 business. From a vendor perspective, Tier 5 sales will involve low user counts, a trickle of annual recurring revenue, a vastly reduced professional services margin, and ongoing maintenance charges that are now rolled into a single, affordable software license rather than being a revenue stream in their own right.

An easy assumption would be that a vendor who chose to specialise in sales to Tier 5 businesses would be able to compensate for a lower individual deal value by signing new agreements in much greater volume, but the raw data does not bear this out. Even taken together, all sales made in Tiers 4 and 5 this year (a combined total of 71% market share) account for just $6.45 million in revenue – or just 5% of the total market size.

Tier 0, on the other hand, remains an incredibly lucrative segment of the market despite the comparatively miniscule number of new sales. On top of more than $16 million in software license fees, professional services provided to Tier 0 customers in 2018/19 amounted to a value of $42 million, or almost 32% of the total monetary size of the industry.

When we place the quantity of sales and the value of those sales side by side, pitting super-size businesses against small-to-medium ones, the division becomes even more obvious. From just 12 sales this year, Tier 0 seized almost 47% of the monetary value of the market, whereas Tiers 4 and 5 combined account for just 5% of the industry's total value from more than 200 sales. This means that a single Tier 0 sale can be worth more in composite dollars than around 150 sales to Tier 5 companies.

Now, looking at things from the opposite angle, it appears as though the sensible thing for any software vendor to do is to target the upper echelons of the market, where there are millions to be made in

implementation and support services alone. Again, not necessarily.

While each individual deal at the Tier 1 and Tier 0 level is worth a lot of money, these opportunities only occur sporadically, and pursuing them requires large-scale investments in infrastructure, support services, partnerships, and a pool of expert resources spread across pre-sales, sales, development, implementation, training, and so on. And while this segment of the market is buoyant today, what happens when the ongoing cycle of PLM replacements ends? As a vendor, does your business boast enough other, complementary revenue streams to sustain itself in the downtime between big deals?

As we have said for several years, the future of the RFA PLM industry lies somewhere in the middle of these two extremes. We believe – as we have for a while now - that vendors must develop what we refer to as a hybrid business model, offering a solution and a package of professional services that can scale both up and down without threatening their profitability or undermining their ability to reinvest in responding to the evolving needs of the market as rapidly as possible.

At the upper end of the market, this means offering an absolutely bulletproof technical environment that can accommodate thousands (or even tens of thousands) of in-house and supply chain users, and can support multiple product categories and brands without extensive customisation. At this level, the world's biggest companies are seeking a peerless technology partner whose support (and potentially even a managed services offering) services, implementation partners, and other resources are second-to-none.

Needless to say, this is a cutthroat world where a very small number of companies will be equipped to play, and remaining competitive there will require a vendor to invest heavily in acquiring the best talent the industry has to offer, developing the most intuitive, agile, and scalable solution, and meeting the rapidly evolving needs of the most demanding customers.

At the opposite end of the spectrum to the extremely labour-intensive upper market is the small and boutique business market segment, where affordability and automation will rule. Because of the low value of each individual sale at this level, vendors will need to cover their costs with volume - but achieving that volume will not be possible if a vendor still needs to spend the same amount on sales, implementation, and onboard services as it does for a Tier 1 or Tier 0 sale.

To compete effectively in the small business market, every stage of the PLM sale, implementation, and support cycle should be able to run with as little human intervention as possible. In practice this means customers being able to spin up their own, hyper-configurable instances of PLM in minutes or hours, and onboarding, training, and first-stage support all being delivered via self-serve video, chatbots, and even in-solution tooltips and guides.

"PLM solutions targeted at small businesses should be able to run with as little human intervention as possible."

This is where we expect to see true multi-tenancy make a big difference in 2019/20 and beyond. Vendors who make the considerable commitment to develop a multi-tenant PLM environment, with continuous deployment, constant development, and a single upgrade path for everyone, will be perfectly positioned to acquire small business users in the required volume – with extremely minimal overheads. Indeed, the multi-tenancy business model absolutely requires this kind of approach, since vendors face a large upfront cost in acquiring data centres, and must then fill them to capacity to turn a profit.

For anyone with a history in the RFA PLM industry, this will sound like a completely different world. And rightly so; as an enterprise system, PLM has long been couched in the sales, implementation, and support structure of that world, where lengthy, bespoke implementations and perpetual licenses paid for upfront were common.

But whether vendors choose to embrace it or not, this is a necessary evolution. Consider the scenario facing a new retail or brand startup today, and how it differs from that historical model. Without having to invest a cent upfront, a brand today could obtain licenses for Adobe Illustrator, lightweight ecommerce and accounting solutions, and a subscription-based PLM platform for a combined cost of less than $400 per month.

In this context, it is extremely unlikely that the distribution of PLM sales at the Tier level is likely to change in 2020, 2021, or indeed any time in the foreseeable future. Because rather than just being a matter of affordability and accessibility, this market evolution indicates, in our opinion, that PLM is now seen as a commodity or a utility – something to be turned on and off, and something that customers expect to simply slot into their existing workflows and IT ecosystems.

While this puts the power in the customer's hands, it also adds another laying of difficulty onto the task of analysing the full size of the market. What begins as an agreement for a small number of users may quickly (and quietly) be upgraded to hundreds, and then even downgraded when temporary design staff are let go after a seasonal peak.

This evolution is also already showing itself in other ways, with the number of key PLM vendors dropping as the market consolidates and companies are either retired or acquired. And while some vendors have already forged ahead with the hybrid business models, others are running the risk of becoming hyper-specialised and eventually obsolete.

CONCLUSION

For the best part of a decade, WhichPLM has tracked and analysed the RFA PLM market. In that time we have followed its progress across the chasm from early adoption to mass market penetration, and we have seen the customised, on-premise model fall by the wayside in favour of cloud-hosted deployments built around non-destructive configuration. Running alongside that evolution, we have also watched as PLM has become more fully-featured – to the extent that effectively any solution on the market today offers a complete set of the common capabilities that most brands and retailers will need.

In those ten years, our predictions and conclusions have been challenged at the micro level, but the macro growth trends we predicted have almost always been realised.

In essence, the back catalogue of WhichPLM publications (including this one) tell the story of a market achieving its potential, and our entire analysis team is humbled to have been able to put such a record together. And if you have been a reader of several – or even all – of these publications, then we thank you for joining in the journey.

Rather than provide a new set of predictions, then, this market analysis should be considered the cap on a series. But this does not mean that WhichPLM will cease analysing the technology market for retail, footwear and apparel. Far from it. And while we are not quite ready to set out how our approach to this kind of analysis will change from here, the presence of such a wide set of digital solutions in this publication should provide some indication of the way we see the industry evolving from here.

For our final set of PLM-specific recommendations for customers, vendors, consultants, and partners, please turn the page and pick the executive summary that suits you best.

WHICHPLM READERSHIP

The WhichPLM website has become the de facto destination for brands, retailers, and manufacturers who want to make better-informed investments in technology, and to understand the changes that are shaping the digital future of fashion and retail. As a global publication, we attract readers who fall into these categories from all over the world – many of whom then go on to either replace or upgrade an existing solution, or to select their first PLM solution.

This being the case, we have devoted a small part of our market analysis each year to comparing the composition of our online readership to the actual sales realised in the same period. And while online readership is usually more accurate as a predictor of future performance (given the time it takes to educate a project team, then select and implement a solution) this analysis has revealed some interesting insights in previous years.

In the financial year 2018/19, WhichPLM's readership was segmented as follows:

- EMEA 35.5%
- APAC 26.5%
- Americas 38%

When compared to the same data set from our last publication (covering the fiscal year 2017/18) we see very little change, except for a 5% shortfall in readers from Europe, Africa and the Middle East – which was shared equally between APAC and the Americas instead.

Placed alongside sales figures from this year, we see some correlation. The EMEA market accounts for almost exactly the same proportion of overall PLM sales as it does WhichPLM readership, while customers in the Asia-Pacific region appear to be researching faster than they are buying – a trend that suggests we may see a spike in sales in that region next year. This disparity is made up by an 8% difference in the rate at which North and Latin American customers (although South America comprises only a small share of PLM sales today) are buying versus reading.

NEXT STEPS FOR PLM CUSTOMERS

Implementing and using PLM in 2019 may be easier than ever, but choosing the right solution is still not a decision you should take lightly. Because while most modern PLM platforms will be functionally complete in the sense that they offer the essential components most brands and retailers need today, they differ in how well they might align with your objectives for longer-term digital transformation.

This leads us to a dichotomy in the way that you, as a brand or retailer, need to think about PLM. On the one hand, you, the buyer, now have the power to treat PLM as a utility – a service to turn on and off at short notice, and to pay only for the components of it you use. And from that point of view, running small pilot programmes, trialling multiple solutions, or even changing from one platform to another are all more accessible options than they have ever been. Through this lens, choosing the right PLM solution to fit your immediate requirements makes perfect sense, since the odds of finding a platform that does what you need are high, and the risks of piloting one that doesn't are at a historic low.

At the same time, though, every PLM selection project is also part of a broader digital transformation strategy – whether or not it's labelled as such. So while you, a prospective PLM customer, are shopping with your current challenges firmly in mind, the solution you choose – assuming it's successfully adopted within your business – will also eventually become the beating heart of your digital ecosystem.

Before drawing up a checklist of selection criteria that's informed by today's market pressures, take some time to read (or re-read) the Digital Solutions section of this publication and mark down which technologies you're already thinking of adopting, and which you might consider using in the future. As we have explained throughout that section, almost all of those digital solutions will only be able to realise their full potential when they share access to a common, centralised pool of product information, meaning that PLM will be essential to achieving the true value potential of a host of other technologies that WhichPLM believes are going to shape the future of our industry.

In short, PLM is both a solution to your pressing problems and a roadmap to your future. Obviously this makes buying and implementing PLM an extremely compelling prospect (as almost 300 customers this year can attest) but due care and consideration must be given when it comes to laying the groundwork for the next generation of technologies.

To this end, we encourage you 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 – and to examine several key criteria alongside the core design and development functionality you need.

Look particularly for a solution that offers a wide variety of pre-built integrations and partnerships, and one that supports vendor-agnostic integrations through open standards. Because whether you realise it or not, by implementing PLM you are making a choice that will sooner or later come to define the digital future of your business.

WhichPLM's team of expert advisors and analysts are accustomed to working with brands and retailers in precisely this situation. We regularly consult with companies to help them understand the full range of opportunities that PLM and other digital solutions present, and often work with them far in advance of solution selection and implementation.

Visit WhichPLM to discover our full suite of educational resources, or contact a WhichPLM board member for more tailored advice.

"Whether you realise it or not, your choice of PLM will, sooner or later, come to define the digital future of your business."

NEXT STEPS FOR DIGITAL SOLUTIONS VENDORS

The RFA PLM industry is now in a consolidation phase, with the number of independent PLM vendors steadily dropping, the remaining vendors rushing to differentiate themselves with added-value features, and the distribution of new sales tilting heavily towards small-to-medium businesses who have relatively little experience with enterprise technology.

This situation presents two clear opportunities for you – irrespective of whether you sell advanced, algorithm-driven planning software, or revolutionary printing or dyeing hardware.

The first of these is to align yourself with one or more PLM vendors, and to develop an integration between your product and theirs – either through standardised web services and open file formats, or using whatever middleware or configurable connectors those vendors offer. As well as being a potent promotional tool in its own right, this kind of partnership will also provide you with a captive audience for your solution: a pool of brands, retailers, and manufacturers who have established a foundation for digital transformation and are prime candidates for taking the next step.

The second compelling opportunity that today's market presents is to strike while the iron is hot, and to educate prospective customers (whether they already use PLM or not) about the potential of your solution as part of a cohesive technology ecosystem. Unlike Tier 0 companies, which may be on their second or third cycle of PLM replacement, customers in the small-to-medium business bracket are not saddled with the legacy of expensive, bespoke integration. For this segment of the market, business solutions and platforms should integrate as easily as they do in their personal lives, and these brands and retailers will be willing to invest in new technologies that will slot seamlessly into their value chains.

To capitalise on both opportunities, communication will be essential. Carefully consider the channels that will expose your solution to the right audience of technology partners and prospective customers, and commit to producing engaging, educational content that will help both profiles understand the value of your solution – both in isolation and as part of the extended digital ecosystem.

NEXT STEPS FOR PLM VENDORS

Reflecting the market itself, our advice for PLM vendors in 2018/19 remains very similar to the guidance we issued in 2017/18.

Last year, when only 35% of all PLM sales were concentrated at the very lowest end of the market, we said that "catering to both extremes of the market will soon demand a blended business model that allows you to profitably fulfil the consultancy needs of big enterprise clients at the same time as delivering remote deployment, training, and support to tiny startups".

In the twelve months since that suggestion was published, a further 20% of all PLM sales have migrated down the Tier ladder – to the extent that more than half the potential market today, in terms of new name sales, is restricted to brands and retailers that turn over less than $50 million a year.

As this accelerating pace suggests, if you are a vendor that has previously restricted itself to working only in the mid-market and above – or even to just the top two tiers – then you have an extremely pressing choice to make.

If you are confident enough in your operational stability and PLM-only cashflow, or you have other revenue streams to rely on, then you may be able to continue to specialise in just the upper echelons of the market. And make no mistake, as this year's market sizing shows, there is still a significant amount of money to be made there – especially in professional services.

But be aware: while a single deal at this level might be able to boost your balance books for the entire year, this segment of the market operates according to a very unpredictable cycle. It is not uncommon for vendors competing for multinational enterprise customers to spend significant amounts of money on pre-sales, sales, and prospect consulting, only to find the project is postponed to another year, or the deal is lost to a competitor. And competition will not be kind in this segment, as extremely entrenched companies whose entire business models hinge on deals of this scale vie for just a 12% share of the market (or 21% if Tier 2 is also included).

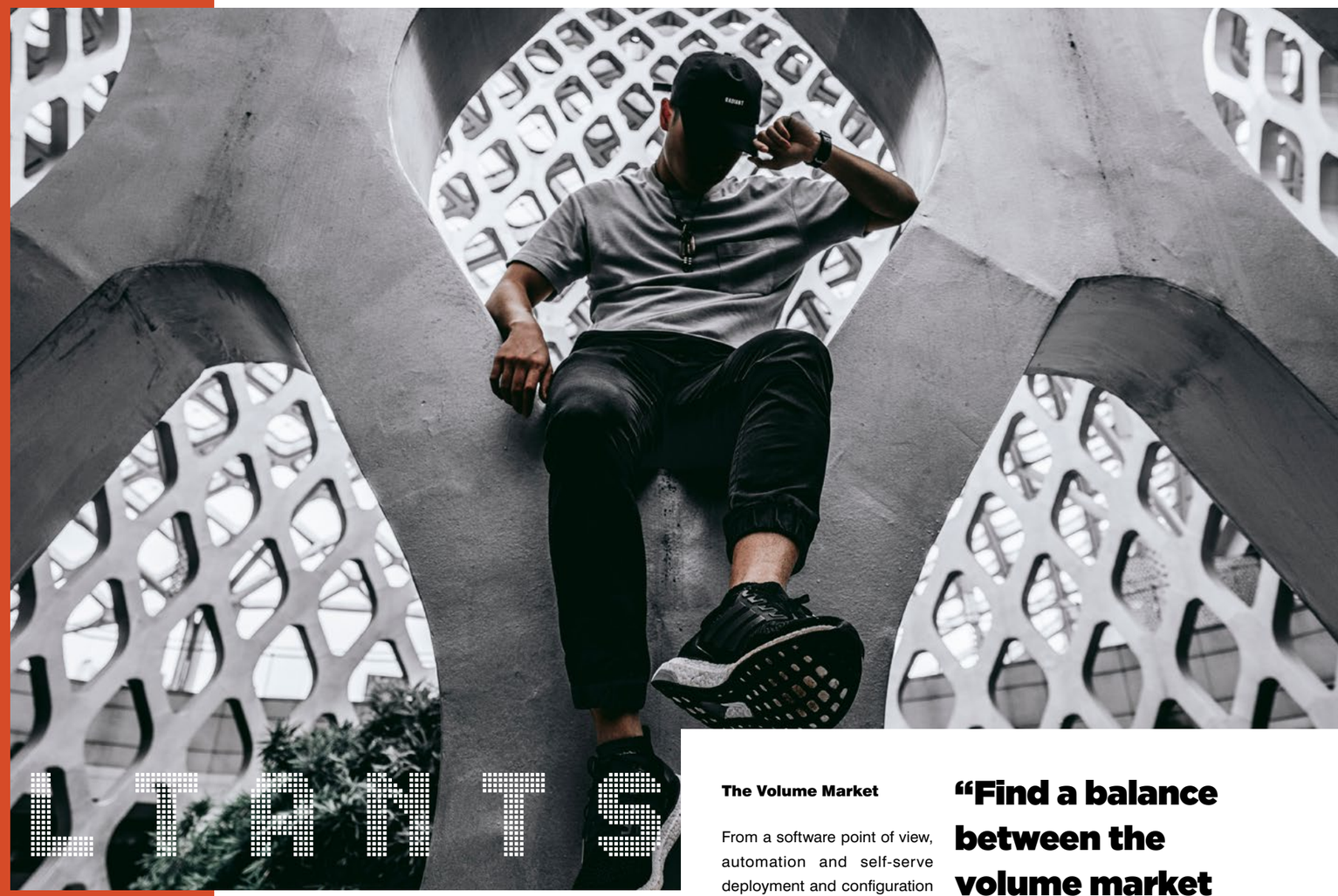
We offer similar advice, albeit reversed, to vendors who are currently running extremely lean operations and hoping to grow their businesses through sheer volume in Tiers 4 and 5 alone. As we have established in our Market Analysis, while there are an incredible number of opportunities here, a typical Tier 5 deal is only worth in the region of $23,000 across software and services. This figure can easily be swallowed up by the cost of customer acquisition – something that will only become more important and more expensive as new competitors emerge, drawn by the explosive potential of this market segment.

We believe that, for PLM vendors, specialisation is rapidly becoming a thing of the past – which should come as no surprise in what has become a commodity market. So, whether you fall into one extreme or the other, our advice remains to develop a hybrid business model and build a blended pipeline that will limit your exposure to the risks inherent at both the top and bottom ends of the market.

This may seem like a difficult task, but it is not an insurmountable one. WhichPLM has evaluated vendors who have already taken clear steps towards a hybrid future, and true multi-tenancy will very soon become a disruptive force in this area. If you would like to better understand how your solution and infrastructure stack up against the best the competitive landscape has to offer, or are looking for validation of your hybrid business model, consider submitting your solution for an objective WhichPLM evaluation.

"If your business is restricted to working only in the mid-market and above - or even just the top two tiers - then you have a pressing choice to make about how you build a blended pipeline and a hybrid business model."

NEXT STEPS FOR PLM CONSULTANTS



Reflecting the relatively static state of the RFA PLM market itself, our guidance for consultancy practices big and small remains relatively unchanged since last year.

In 2017/18 we suggested that all consultants – although especially implementation partners – needed to "rapidly remodel their businesses to service to very distinct markets simultaneously".

In the twelve months since that advice was written, that need has only become more acute.

Although consultants are less affected by the slight market size slump we saw in this year's market analysis than software vendors are (since professional services revenues have remained essentially intact), the broader shift towards a higher volume of lower-value projects may still necessitate a change in the way you do business.

The Upper Tiers

Once considered the norm, heavy customisation is now a thing of the past in PLM implementations. This is a net positive for customers, who no longer need to spend up to ten times their software licensing costs on implementation services. It is a challenge for consultants like you, however, because hands-on, bespoke implementation projects are now a rarity.

As this year's Market Analysis shows, Tiers 0 and 1 still produce a tremendous amount of revenue from professional services contracts, but today that money is being spent on more strategic services, rather than on bringing in armies of consultants to manage a multi-phase implementation. To keep pace, re-tool your services (if necessary) to instead help brands and retailers re-engineer their product lifecycles, undergo far-reaching digital transformations, and implement proven best practices that will allow them to maximise their use of PLM over time and beyond the walls of their headquarters.

In practice, of course, the means that any PLM consultant needs to know about a lot more than just PLM. Whether it's digital printing and Industrial IoT, or storyboard solutions and blockchain, your services teams will need to engage with large businesses, understand their supply chains, and potentially map a huge array of input and outputs – upstream and downstream – to assist them in constructing truly end-to-end digital workflows.

The Volume Market

From a software point of view, automation and self-serve deployment and configuration are going to shape the future of RFA PLM in Tiers 4 and 5. In order to compete in this market segment, it's therefore going to be essential for you to become instrumental in the automation side of your vendors partners' businesses.

In light of the stark difference in professional services revenues at the 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 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.

"Find a balance between the volume market and the upper tiers."

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 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.

Across the board, though, our advice remains that you should look to achieve a balance between the volume market and the upper tiers, where a single engagement can still - even today – encompass months or years' work of strategic advisory services.

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.

2018/19 = Each WhichPLM publication represents a retrospective look at the financial year that has gone before it, this Guide included. Our **2018 Buyer's Guide**, released in summer 2018, examined trends, market analysis, topics, events, end user feedback and more – all originating from or pertaining to the fiscal year 2017/18, while this Buyer's Guide contains similar content, but from the financial year 2018/19. 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 "2018/19" in these pages, we mean the period from 1st April 2018 to 31st March 2019 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 2018/19, signed a deal with – 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 2018/19, 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, and 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 Limited
Company No. 7055021
1 Jeremy's Barn, Lily Lanes, Ashton-under-Lyne,
Lancashire, England OL6 9AE
For press and syndication enquiries contact:
info@whichplm.com
www.whichplm.com
Tel: +44 (0)161 330 5077